

**Lightening the Load: Perceived Partner Responsiveness Fosters More Positive
Appraisals of Relational Sacrifices**

Mariko L. Visserman¹, Amy Muise², Francesca Righetti³, Rebecca M. Horne¹, Bonnie M.
Le⁴, Stéphane Côté⁵, and Emily A. Impett¹

¹Department of Psychology, University of Toronto Mississauga, Canada

²Department of Psychology, York University, Toronto, Canada

³Department of Experimental and Applied Psychology, VU Amsterdam, The Netherlands

⁴ Department of Psychology, University of Rochester, United States

⁵ Rotman School of Management, University of Toronto, Canada

Author Note

Mariko L. Visserman: <https://orcid.org/0000-0001-8747-3852>, Amy Muise:
<https://orcid.org/0000-0002-9000-4106>, Francesca Righetti: <http://orcid.org/0000-0002-5126-1388>, Rebecca M. Horne: <https://orcid.org/0000-0003-2982-8779>, Bonnie M. Le:
<https://orcid.org/0000-0002-1857-6716>, Stéphane Côté: <https://orcid.org/0000-0001-5447-0620>, Emily A. Impett: <https://orcid.org/0000-0003-3348-7524>. We have no known conflicts of interest to disclose.

Correspondence should be addressed to Mariko L. Visserman, Department of Psychology, University of Toronto Mississauga, Canada. 3359 Mississauga Road, Mississauga, ON L5L1C6, Email: m.visserman@utoronto.ca.

This research was supported by grants from the Social Sciences and Humanities Research Council (Canada) awarded to M. L. Visserman (#756-2021-0007), A. Muise, and E. A. Impett, and a grant from the Netherlands Organization for Scientific Research (#451-12-024) awarded to F. Righetti.

© 2021, American Psychological Association. *This paper is not the copy of record and may not exactly replicate the final, authoritative version of the article. Please do not copy or cite without authors' permission. The final article will be available, upon publication, via its DOI: 10.1037/pspi0000384*

Abstract

Romantic partners regularly sacrifice their own self-interest when partners' needs and preferences diverge. The present work examines the role of perceived partner responsiveness (PPR)—impressions that one's partner is understanding, caring, and validating—in positively shaping people's appraisals of their relational sacrifices. In Study 1, a preregistered experiment of romantically involved individuals ($N = 548$), we manipulated PPR (high, low, or control) in a hypothetical sacrifice scenario. In Study 2, we tracked romantic couples' ($N = 126$) in-lab conversations about a sacrifice (Study 2a), and their sacrifices in daily life (Study 2b). In Study 3, romantic couples ($N = 111$) engaged in lab conversations about a sacrifice that entailed making a change that one partner desired from the other, and reported on their progress two weeks later. In Study 4, we surveyed romantically involved individuals ($N = 230$) who recently made a life-changing sacrifice by relocating to a new city or country to support their partner's career. Across studies, results showed that higher PPR fostered more positive sacrifice appraisals (i.e., lower costs and viewing the act as less of a sacrifice, greater satisfaction, greater personal and relational benefits, lower regret) and greater sacrifice behavior (Study 3)—in part due to greater closeness with and lower negative affect toward the partner. Additionally, Study 4 suggested that PPR partly originated from the partner's efforts to fulfill fundamental psychological needs (i.e., autonomy, competence, relatedness). Thus, PPR can play a critical role in lightening the load of daily and even life-changing sacrifices.

Keywords: sacrifice appraisals, perceived partner responsiveness, fundamental psychological needs, closeness, negative affect

Lightening the Load: Perceived Partner Responsiveness Fosters More Positive Appraisals of Relational Sacrifices

The well-being of romantic relationships profoundly shapes individuals' health and well-being (e.g., Diener & Seligman, 2002; Holt-Lunstad et al., 2010; Robles et al., 2014). However, couples' well-being is often challenged by conflicts of interests in which partners have different goals, needs, or preferences (Columbus et al., 2021; Righetti et al., 2016). To resolve such conflicts, individuals may give up their own self-interest to benefit the partner and their relationship (Van Lange et al., 1997). On a daily basis, people may sacrifice, for example, by taking on extra chores around the house, watching a partner's preferred movie, or agreeing to spend time with their partner rather than seeing their friends. Sometimes, sacrifices can be more substantial and potentially life-changing, such as relocating to a new city or country to accommodate a partner's career (e.g., Farrell et al., 2016).

Sacrifices are inevitable and essential for coordinating partners' lives together and maintaining a high-quality relationship (Righetti et al., 2021; Righetti & Impett, 2017), but are also inherently burdensome to the partner who subordinates their own needs and interests (Righetti & Impett, 2017; Righetti et al., 2020a). When romantic partners sacrifice—or consider a sacrifice—they form *sacrifice appraisals*, which are evaluations of interrelated aspects of the sacrifice one is making, including the costs, the benefits, how satisfying it feels, and how much regret is anticipated or experienced afterwards (Righetti & Impett, 2017). When sacrificing seems particularly costly, difficult, or harmful to oneself, this prosocial act can actually detract from—rather than benefit—the well-being of the relationship (Righetti et al., 2015; Ruppel & Curran, 2012; Stanley et al., 2006; Visserman et al., 2021; Whitton et al., 2007) and hurt both partners' personal well-being (Righetti et al., 2020a). In contrast, greater satisfaction with making a sacrifice is associated with greater personal and relational well-being in both partners (Righetti et al., 2020b; Stanley et al., 2006).

While sacrifice appraisals crucially determine how sacrificing impacts the individual and their relationship, to date, little is known about the factors that impact such appraisals. In the present work we propose that perceiving a partner as highly responsive to one's needs and interests may be key to appraising sacrifices in a more positive light, and may fuel greater sacrifice behavior. We further propose that perceiving greater responsiveness from a partner helps people to appraise sacrifices more positively due to feeling closer and experiencing less negative affect toward their partner. Additionally, we examine how sacrificing individuals come to perceive their partner as responsive in the first place, proposing that the partner's help in satisfying fundamental psychological needs (i.e., autonomy, competence, relatedness) can be a powerful way of eliciting overall perceptions of the partner's responsiveness.

Perceived Partner Responsiveness

Perceived partner responsiveness (PPR) encompasses three key ways in which the partner is perceived to be supportive (Reis et al., 2004): perceiving that the partner comprehends one's core self, including one's needs and interests (i.e., *understanding*); that they respect or appreciate one's view of oneself (i.e., *validation*); and that they express warmth, affection, a concern for one's well-being, and are willing to attend to one's needs (i.e., *caring*) (Reis & Gable, 2015; Reis & Shaver, 1988). Partners' responsiveness to each other's needs and interests is at the heart of well-functioning, satisfying, and committed relationships (Balzarini et al., 2020; Donato et al., 2015; Gordon et al., 2011; Joel et al., 2020; Reis, 2013; Reis et al., 2004; Reis & Gable, 2015; Segal & Fraley, 2016).

Beyond providing these relational benefits, perceiving a partner as understanding, validating, and caring also greatly benefits the individual, including their overall psychological well-being and physical health (Reis & Gable, 2015; Stanton et al., 2019; Tasfiliz et al., 2018), and their ability to cope and thrive through good and bad times (Feeney, 2004; Feeney & Collins, 2015). More specifically, a partner's responsiveness signals their

acceptance of one's true self (Reis & Gable, 2015) and helps people to reach their goals and aspirations (Finkenauer & Righetti, 2011). PPR also assures that one's needs are in good hands, now and in the future, rather than feeling doubtful, vulnerable, and unable to rely on a partner's support when needed (e.g., Mikulincer & Shaver, 2003). These qualities may be particularly important when partners' interests misalign and one partner subordinates their own goals and needs to serve the other partner and the relationship, thereby incurring personal costs and leaving them vulnerable to potential exploitation (Van Lange et al., 1997).

Some prior work suggests an important role of PPR in maintaining high relationship quality in the face of relational conflicts, and conflicts of interests specifically. For example, feeling that a partner understands one's thoughts, feelings, and point of view helps people to maintain satisfaction in the relationship when experiencing conflict (Gordon & Chen, 2016). Moreover, a partner's responsiveness when they request a sacrifice promotes greater trust and commitment toward them (Farrell et al., 2016), while a lack of partner's recognition and appreciation for a sacrifice leaves people feeling dissatisfied in the relationship (Visserman et al., 2019). Extending past findings on the relational benefits of partner responsiveness during conflict, in the present work we test whether PPR plays a key role in how people appraise a sacrifice for their partner, helping them to reinterpret these costly acts more favorably.

Sacrifice Appraisals

We build on research demonstrating the detrimental impact of negative sacrifice appraisals (e.g., perceiving greater costs) for individual and relational well-being (Righetti et al., 2015, 2020a, 2021; Stanley et al., 2006; Visserman et al., 2021; Whitton et al., 2007), as well as research demonstrating the power of *reappraisal*—cognitively changing the way a situation is construed in order to manage one's emotional response—in promoting people's emotional, psychological, and relational well-being (Denny & Ochsner, 2014; Gross, 2002, Gross & John, 2003). Recent research has shown that appraisals of sacrifices carry some

subjectivity and should thus be malleable. In fact, people reported lower costs and higher personal and relational benefits for their own sacrifices versus their partner's sacrifices, even when those sacrifices were identical (Visserman et al., 2021). Thus, sacrifice appraisals may not purely reflect the objective costs and benefits that these acts may bring, but can be flexibly construed and reappraised. In the present work, we argue that perceiving a partner as highly responsive should be a prime candidate for promoting positive sacrifice appraisals.

Sacrificing one's own self-interests carries a risk of being exploited and incurring personal harm (Righetti & Impett, 2017; Righetti & Visserman, 2018). Perceiving a partner as responsive to one's needs can reduce defensiveness, doubt, and self-protection tendencies in the face of such risk (Caprariello & Reis, 2011; Reis et al., 2018). By alleviating concerns around exploitation and self-protection, PPR might cause partners to appraise sacrifices as less costly and prompt less doubt and regret. Indeed, some initial work in this direction revealed that feeling supported by one's partner combats experiencing regret after sacrificing (Righetti & Visserman, 2018). Moreover, PPR induces a more open mindset in which people are more likely to consider different perspectives and in which their evaluations are more malleable (Itzchakov & Reis, 2021). Thus, perceiving that a partner cares, understands one's needs and interests, and validates one's authentic self may enable people to see beyond the immediate costs of sacrifice. Instead, people may perceive a sacrifice as less of a departure from self-interest, adopt a greater focus on potential benefits for the relationship and for oneself, and feel more satisfied with making a sacrifice.

Downstream Consequences for Sacrifice Willingness and Actual Behavior

Beyond the immediate effects on how a sacrifice for a partner is appraised, a partner's responsiveness may also promote people's willingness and actual efforts toward making the sacrifice when they face the choice to do so. Indeed, partner responsiveness fuels people's motivation to engage in behaviors to maintain the relationship (Algoe et al. 2008, 2010; Reis

& Clark, 2013; Reis et al., 2010; Wieselquist et al., 1999), including efforts to resolve conflicts (Kubacka et al., 2011). More specifically, previous research has demonstrated that when a partner is responsive by demonstrating understanding, validation, and care when asking for a sacrifice, people are more likely to accommodate the request (Farrell et al., 2016). In addition, when people appraise a sacrifice as less costly, they are generally more willing to make the sacrifice (Day & Impett, 2018; Powell & Van Vugt, 2003). Taken together, we expect that by shaping more positive appraisals when anticipating a sacrifice, PPR will consequently fuel people's sacrifice intentions and their actual sacrifice behavior.

Mediating Roles of Closeness and Negative Affect toward a Partner

In order to advance our understanding of *why* greater PPR might help people appraise their sacrifices in a more positive light, we focused on two mechanisms that we argue to be particularly relevant in promoting more favorable appraisals when giving up one's own self-interests for one's partner: greater felt closeness and lower negative affect toward the partner.

Closeness. One reason why PPR may lead people to appraise sacrifices for their partner more positively may be that perceiving a partner as highly responsive fosters feeling closer (i.e., more intimate and interconnected; Debrot et al., 2012; Laurenceau et al., 1998; Mikulincer & Shaver, 2003; Reis et al., 2004; Reis & Shaver, 1988). In fact, past research has demonstrated that increases in PPR directly cause greater feelings of closeness (Ruan et al., 2020), and that daily changes in closeness are rooted in the partner's responsiveness—especially during stressful interpersonal events (Murray et al., 2003). Thus, PPR influences people's felt closeness, helping them to strongly connect with their responsive partner.

When people feel close to their partner, they adopt a more collective mindset, seeing themselves and their partner intrinsically interwoven in the collective of their relationship (i.e., cognitive interdependence; Agnew et al., 1998; Aron et al., 2004) and feeling a sense of being “in it together” (Maisel et al., 2008). As the partner's preferences become more

integrated in one's own interests, sacrificing to accommodate the partner's interests may be seen as less costly and more beneficial to the relationship—and by extension, also to oneself, thus promoting more positive sacrifice appraisals. In support of this prediction, greater closeness has been found to foster more positive attitudes toward making sacrifices for a partner (Van Lange et al., 1997), and individuals who strongly identify themselves as part of their relationship (i.e., those with a relational self-construal) feel more satisfied with making relational sacrifices (Day & Impett, 2018). Thus, increased feelings of closeness as a result of a partner's responsiveness may similarly shape people's sacrifice appraisals.

Negative affect toward a partner. Additionally, perceiving a partner as highly responsive may also help people appraise sacrifices more favorably because of a reduction in negative feelings toward the partner. When people resolve conflicts of interests by sacrificing their own goals and needs for their partner, they experience greater negative mood and increased negative feelings toward their partner, such as resentment and frustration—as the partner obstructs their goals—as well as feel exploited by their partner, all of which negatively color people's experience of sacrifice (Righetti et al., 2020b).

Greater PPR has been found to help people better regulate negative emotions (Ruan et al., 2020) and downregulate negative affect (Debrot et al., 2013, 2014; Slatcher & Schoebi, 2017; Stanton et al., 2019). When giving up important goals and needs for a partner, perceiving that they understand and validate one's needs and interests, and seem willing to support one's goals and needs in the future should reduce defensiveness, doubt, and fear of exploitation (Caprariello & Reis, 2011; Reis & Gable, 2015; Reis et al., 2018) that may otherwise evoke negative affect toward the partner (Righetti et al., 2020b). Instead, the sense of security that a partner's responsiveness instills (Collins & Feeney, 2000; Mikulincer & Shaver, 2003) may help to break down the wall of negativity that arises in reaction to making

(or anticipating) a relational sacrifice. Thus, greater PPR may help reduce negative affect toward the partner, thereby lightening the load of a sacrifice.

Perceived Responsiveness Grounded in Fundamental Need Satisfaction

Given the proposed benefits of partner responsiveness in alleviating the burden of sacrificing one's own needs and interests, we additionally aimed to investigate how partners can be responsive when making a sacrifice. According to Self-Determination Theory, people are driven by fundamental psychological needs for *autonomy* (i.e., feeling control and freedom over one's actions), *competence* (i.e., feeling challenge and mastery in activities), and *relatedness* (i.e., feeling a sense of connectedness), and their well-being depends on satisfying these needs (Deci & Ryan, 2000). Recent research has shown that people experience lower fulfilment of these fundamental needs when they forego their own self-interest by making daily sacrifices for a romantic partner (Horne et al., 2021).

A unique context in which to examine a partners' responsiveness to fundamental needs is when people relocate with their partner (domestically or internationally) to accommodate the partner's career opportunities—one of the largest and frequently reported type of sacrifice (Farrell et al., 2016; Impett et al., 2005; Mandal, 2020). Indeed, partnered relocation is a common reality in our highly globalized world (Brookfield Global Relocation Services, 2016; Canadian Employee Relocation Council, 2018), even during the global COVID-19 pandemic (Pew Research Center, 2020). After such major life transition, people typically experience a deficit in meeting their fundamental needs (Brown, 2008; Deci & Ryan, 2000). For example, they may feel less autonomous when following their partner's ambition rather than their own, less competent when learning the ropes in a new job, and less connected to others after moving away from their friends and family. Accordingly, relocation sacrifices often take a toll on individual well-being (Anderzén, & Arnetz, 1999, Riemer, 2000) and leave couples vulnerable to dissatisfaction and divorce (McNulty, 2015; Sweatman, 1999).

Thus, restoring these fundamental needs may be a much needed but challenging endeavor after a relocation sacrifice. This does not have to be an individual endeavor: when a partner is perceived to be helpful in fulfilling one's fundamental needs, people experience greater personal and relational well-being (Patrick et al., 2007). In the present work we propose that partners' attunement to satisfying sacrificers' fundamental psychological needs after a relocation sacrifice may inform people's overall perceptions of the partner's responsiveness, and thereby could positively shape appraisals of this sacrifice for the partner.

Research Overview

In a multi-method series of four studies, employing experimental, daily experience, longitudinal, and survey methods, we investigated whether perceiving a partner as highly responsive when making, or anticipating, a sacrifice fosters more positive sacrifice appraisals. In Studies 2a, 2b, and 3 we also took a dyadic perspective by involving both partners. The studies captured a variety of sacrifices, ranging from hypothetical daily scenarios to life-changing sacrifices, and were conducted in different countries (i.e., The Netherlands, Canada, US, UK) in order to generalize findings across these different Western cultures.

First, in Study 1, a preregistered experiment, we manipulated perceptions of partner responsiveness in a hypothetical sacrifice scenario to provide support for the causal role of PPR in promoting more positive appraisals of sacrifice.¹ In Study 2a, romantic couples discussed a potential sacrifice related to a current conflict of interests in the lab and reported on their in-the-moment experiences of PPR and sacrifice appraisals. In Study 2b we tracked the same couples over eight days to assess PPR and appraisals of sacrifices as they occurred in daily life. In Study 3, couples discussed a sacrifice that required making a change that the partner desired. After assessing PPR and appraisals of this sacrifice, we tracked participants'

¹ Note that Study 1 was preregistered and conducted after we ran preliminary analyses on the data in Studies 2a and 2b. Thus, this preregistration was grounded in theory as well as some first empirical findings, but presented here first to promote a coherent flow of the studies.

behavior toward making this sacrifice two weeks later. Last, in Study 4, we investigated the role of PPR in appraising a life-changing sacrifice that participants had recently made by relocating for their partner's career. Here we also focused on perceptions of the partner's efforts toward satisfying fundamental psychological needs for autonomy, competence, and relatedness as a predictor of how people come to see a partner as responsive, and thereby lighten the load of some of the largest sacrifices that romantic partners make for each other.

In Studies 2b, 3, and 4, we also investigated whether greater PPR fosters more favorable appraisals in part due to feeling closer and experiencing less negative affect toward the partner when giving up one's own self-interest. Last, in Studies 2a, 2b, 3, and 4 we additionally controlled for other associated relationship dynamics (e.g., attachment orientation, commitment, trust) to test the unique role that PPR may play in shaping sacrifice appraisals. All study materials, data, and syntax are available on the Open Science Framework: <https://osf.io/hvn85/>.

Study 1

Study 1 is a preregistered experiment in which we manipulated PPR (high, low, or control) using a hypothetical sacrifice scenario in which participants imagined making a sacrifice for their partner. We considered a range of sacrifice appraisals, including the costs of the potential sacrifice to the self (Day & Impett, 2018), the benefits of the sacrifice to the self (Visserman et al., 2021), satisfaction with making the sacrifice (Righetti et al., 2015; Stanley et al., 2006), and anticipated regret (Righetti & Visserman, 2018). We preregistered our hypotheses and analyses before data collection: <https://osf.io/w8a5n>.

Methods

Participants. The sample consisted of 537 romantically involved individuals (42.5% men, 57.1% women, 0.4% transgender), with a mean age of 32.8 years ($SD = 12.1$, range = 18 to 78), and an average relationship length of 8.8 years ($SD = 9.8$, range = 4 months to 52

years). Participants' relationship status included seriously dating (49.7%), married (36%), engaged (11%), casually dating (2.2%), and "other" (1.1%, e.g., common law/civil union, long-distance relationship, or polyamorous relationship), and the majority of participants (68.7%) cohabitated with their partner. The majority of participants identified as heterosexual (89.8%), and some as bisexual (4.8%), gay or lesbian (3%), queer (0.4%), or "other" (2%, e.g., pansexual, omnisexual, asexual, or preferred not to answer). Most participants identified their nationality as United Kingdom (44.8%) or otherwise European (36.8%), and some as United States (6.8%), Canada (4.3%), Asia (2.7%, broadly defined), Mexico (2.1%), or "other" (2.5%, e.g., South Africa, Venezuela, Australia, New Zealand).

Participants were recruited on the online platform Prolific (Palan & Schitter, 2018; Peer et al., 2017), and were paid £0.50 GBP (or another currency's equivalent; e.g., \$0.67 USD). Based on effect sizes observed in previous work using a PPR manipulation (i.e., a minimum effect size of $d = .29$; Reis et al., 2018), we conservatively expected to find a small to medium effect ($d = .29$). A power calculation (using the program G*Power) allowing for 80% power to test whether conditions significantly differ, and accommodating for posthoc comparisons, suggested a sample size of 460 participants. Originally, we collected 567 participants, but following our preregistration, one participant identified as divorced, four participants admitted to dishonesty, 19 participants did not pass our attention probe in their open-ended response (e.g., they wrote that their partner was the one who sacrificed, wrote in Spanish, or wrote nothing at all), and six participants were removed because of duplicate IP addresses. Thus, our analyses are based on the final sample of 537 participants. Sensitivity analyses (using G*Power), given power = .80 and α (two-sided) = .05, revealed that with this sample size, the smallest effect size we could detect was $d = .26$ (equivalent to $\eta^2 = .02$) for the overall effect of condition, while posthoc comparisons accommodated a minimum effect size of $d = .30$.

Measures and procedures. Participants were eligible if they were currently involved in a romantic relationship for at least four months, over 18 years of age, and were able to read and write in English. Participants were first presented with a sacrifice scenario in which we manipulated partner responsiveness (i.e., high, low, or control condition), they then reported on how they appraised the sacrifice for their partner, and finished the study with a few demographic questions (e.g., gender, relationship length) to identify our sample. Last, participants were thanked and debriefed about the goal of the study.

Sacrifice scenario. All participants were presented with the same scenario in which their preference diverges from their partner's preference and were asked to imagine sacrificing their preference: "You and your partner are making plans for this Saturday night. Your partner would really like to go to the movies with you and watch a new movie that (s)he has been looking forward to seeing, and that has a special premier this Saturday night. You have a different preference for this Saturday night. You would really like to go out with your best friends, as they are all available that night. You haven't seen them for a long time and are looking forward to finally catching up with them again. Eventually you decide not to go out with your friends and instead to the movies with your partner." This scenario is designed based on previous research identifying sacrifice situations that couples regularly encounter in daily life (Righetti et al., 2016; Visserman et al., 2018), and was modeled after previous work using relational sacrifice scenarios to assess costs and benefits (Visserman et al., 2021).

Partner responsiveness manipulation. In a between-subject design, we randomly assigned participants to the *high* partner responsiveness ($n = 177$), the *low* partner responsiveness ($n = 183$), or the control condition ($n = 177$). Partner responsiveness was manipulated with a short description at the end of the sacrifice scenario, tapping into the three key components of PPR (i.e., understanding, care, validation; Reis et al., 2017a, 2018; Reis & Shaver, 1988). In the *high* responsiveness condition, we added the following description: "As

you and your partner talk about this situation, it is clear to you that your partner understands what it means for you to give up seeing your friends. You feel that your partner expresses that they care about your needs and truly value what is important to you.” In the *low* responsiveness condition, the partner was described as lacking this understanding, caring, and valuing of their interests: “As you and your partner talk about this situation, it is clear to you that your partner does not really understand what it means for you to give up seeing your friends. You feel that your partner does not express that they care about your needs and value what is important to you.” In the *control* condition, participants received the same sacrifice scenario but without any description of the partner’s responsiveness.

Sacrifice appraisals. After providing a minimum of 25 seconds to read and imagine themselves in the scenario, we asked participants to rate the sacrifice costs (“How costly would this sacrifice be for you?”, 1 = *not at all costly* to 7 = *very costly*; $M = 3.78$, $SD = 1.59$), personal benefits (“How beneficial would this sacrifice be for you?”, 1 = *not at all beneficial* to 7 = *very beneficial*; $M = 4.37$, $SD = 1.49$), sacrifice satisfaction (“How satisfied would you feel about making this sacrifice?”, 1 = *not at all* to 7 = *very much*; $M = 4.26$, $SD = 1.56$), and anticipated regret (“How much regret do you think you will feel after making this sacrifice”, 1 = *none at all* to 7 = *very much*; $M = 3.44$, $SD = 1.56$). Appraisals of costs and regret were reversed and all four sacrifice appraisals were averaged into one assessment indicating how positively the sacrifice was appraised ($\alpha = .77$; $M = 4.35$, $SD = 1.19$).

Perceived partner responsiveness. As a manipulation check, we assessed how supportive participants had perceived their partner in the sacrifice scenario (“How helpful and supportive did you feel that your partner would be when you would make this sacrifice?”; 1 = *not at all helpful/supportive* to 7 = *very helpful/supportive*; $M = 5.26$, $SD = 1.56$). To avoid raising awareness about the goal of our study which could elicit demand characteristics and biased responding, this item deliberately operationalized PPR as perceived partner support

rather than explicitly addressing the three key components of PPR as operationalized in the experimental manipulation (i.e., describing the partner as expressing care, understanding, and validation, or a lack thereof). Moreover, to avoid interfering with our manipulation, we assessed our manipulation check *after* assessing sacrifice appraisals.

Results

We used Analysis of Variance (ANOVA) in SPSS to examine whether the three conditions differ in PPR (i.e., manipulation check) and sacrifice appraisals. Subsequently, we conducted Tukey's HSD post hoc comparisons to examine which conditions differed significantly. Note that gender did not reliably moderate the findings.

Perceived partner responsiveness. First, we examined whether the responsiveness manipulation successfully elicited high or low PPR. Indeed, participants in the high responsiveness condition ($M = 5.60$, $SD = 1.30$) perceived their partner as more helpful and supportive than in the low responsiveness condition ($M = 4.79$, $SD = 1.75$) (see Table 1). The low responsiveness condition also significantly differed from the control condition ($M = 5.40$, $SD = 1.52$), but the high responsiveness condition did not (although the means differed in the expected direction). This finding suggests that describing the partner as lacking responsiveness may be particularly powerful in *lowering* participants' perceptions—or their explicit reports—of their partner's responsiveness, while describing the partner as highly responsive may not be as powerful in *boosting* PPR. Note that this manipulation check was administered after assessing sacrifice appraisals and may not purely reflect participants' perceptions right at the moment when they imagined the scenario.

Table 1

Comparisons of mean responsiveness ratings (i.e., manipulation check) between the high responsiveness, low responsiveness, and the control condition in Study 1

Perceived Responsiveness	Difference (SE)	95% CI	Cohen's <i>d</i>	<i>t</i>	<i>F</i>	η^2	<i>p</i>
Condition							
Total effect					13.57	.05	< .001
High vs. low	.81 (.16)	.43, 1.19	.53	5.01			< .001
High vs. control	.21 (.16)	-.18, .59	.14	1.23			.202
Low vs. control	-.60 (.16)	-.98, -.22	.37	-3.72			< .001

Sacrifice appraisals. In support of our key hypothesis, participants significantly differed in overall sacrifice appraisals across conditions, with more positive appraisals in the high responsiveness condition ($M = 4.73$, $SD = 1.10$) as compared to the control condition ($M = 4.34$, $SD = 1.20$) and the low responsiveness condition ($M = 3.99$, $SD = 1.15$). Post hoc analyses revealed a significant difference between each of these conditions (see Table 2), with participants in the low responsiveness condition also appraising their sacrifice *less* favorably as compared to those in the control and high responsiveness conditions.

Additionally, we explored whether the overall difference between conditions was also evident for each of the four sacrifice appraisals when examined separately. Indeed, all total models and all comparisons between the high and low responsiveness conditions were significant (all *p*-values .001 or smaller) and in the expected directions. See *Supplemental Online Material* for the analyses separated by each sacrifice appraisal. Note that although the pattern was the same across all appraisals, in two cases (i.e., costs and regret appraisals) the difference between the low PPR and control conditions did not reach significance.

Table 2

Comparisons of overall sacrifice appraisals between the high responsiveness, low responsiveness, and the control condition in Study 1

Sacrifice Appraisals	Difference (SE)	95% CI	Cohen's <i>d</i>	<i>t</i>	<i>F</i>	η^2	<i>p</i>
<i>Condition</i>							
Total effect					18.80	.07	<.001
High vs. low	.75 (.12)	.46, 1.03	.66	6.13			<.001
High vs. control	.39 (.12)	.10, .68	.34	3.18			.005
Low vs. control	-.36 (.12)	-.64, -.07	.30	-2.93			.010

Discussion

Using an experimental paradigm, Study 1 showed that a hypothetical sacrifice was appraised *more* positively in the high responsiveness condition and *less* positively in the low responsiveness condition compared to ratings of the same sacrifice in a control condition. Moreover, the difference between the high- and low responsiveness conditions was robust for each separate sacrifice appraisal. Thus, Study 1 provides causal support for our hypothesis that perceiving a partner as highly responsive elicits more positive appraisals when considering making a sacrifice for the partner, while perceiving a partner as *unresponsive* increases the perceived burden of sacrifice.

Study 2a

In Study 2a, a study of romantic couples, we investigated the role of PPR in promoting more positive appraisals (i.e., lower costs) of an actual and potentially large sacrifice that participants were currently facing in their relationship. We tracked couples' in-lab conversations about a current conflict of interests between partners and employed in-depth assessments of PPR with a video-mediated recall task to assess in-the-moment experiences of partner responsiveness, as well as overall ratings of partner responsiveness after the conversation. Appraisals of sacrifice costs were assessed both before and after the conversation to isolate the role of PPR in buffering against perceived costs of the sacrifice.

Methods

Participants. Participants were 126 couples (i.e., 252 individuals), comprised mostly of heterosexual couples and one same-sex couple. Couples were recruited in The Netherlands via advertisement on social media, various internet forums, and personal approach, and were eligible to participate if they were together for at least four months, did not have children, spoke Dutch fluently, and had a smartphone. Participants' mean age was 23.3 years ($SD = 3.7$ years, range = 18 to 43 years), 64.5% were students (versus 34.1% working full time and 2.4% both working and studying), and almost all participants identified as Dutch (93%). On average, couples reported being involved in their current relationship for 2.8 years ($SD = 2.4$ years, range = 4 months to 17 years); 35% lived together and 2.8% were married. The data come from a larger project on sacrifice in romantic relationships (e.g., Faure et al. 2018; Righetti et al., 2016; Visserman et al., 2018, 2021, Zoppolat et al., 2020).

Originally, 130 couples participated in the study, but one couple broke up before completing the daily experience sampling (see Study 2b), and three couples did not properly follow instructions. Participants could earn €80 for their participation in the laboratory session of the study, which included couples' conversations, and when they responded to at least 80% of the daily surveys (in Study 2b). Each couple was also entered into a raffle at the end of the study to win a €200 bonus. A minimum sample size of 120 couples was specified prior to data collection based on sample sizes typically used in relationship studies and combined with a daily experience sampling design to provide adequate statistical power (Study 2b). Sensitivity analyses (using G*Power), given power = .80 and α (two-sided) = .05, revealed that with our sample of 126 couples, the smallest unstandardized slopes we could detect were -.21 and -.25 for the associations of video-mediated recall and overall ratings of PPR with sacrifice costs appraisals, respectively. These analyses corrected the sample size for non-independence in the

data (see Wiley & Wiley, 2019)² (*ICCs* are .10 and .12, respectively) and take all variables' observed standard deviations (see below) into account.

Measures and procedure. Couples were invited to the laboratory where they discussed a current situation in their relationships in which their interests diverged. They were instructed that this conversation could be about any situation in which they have different preferences, and were provided with examples, including some that were relatively less costly (e.g., “on Saturday you would like to go to visit your family while s/he prefers to spend time with common friends” and “you would like to meet a friend while your partner feels uncomfortable if you do so”) and some that were considerably more costly (“you would like to go on a trip to USA while your partner wants to go to Thailand” and “you would like to move to another country while your partner would like to stay in the Netherlands”). Couples were seated together in a private room, and the experimenter timed the conversation to last for seven minutes. After this time, the experimenter came back into the room and asked the couple to end their conversation. Partners were seated in separate rooms right before and right after the conversation to reply to some questions regarding the conversation.

Perceived partner responsiveness. PPR during the conversation was assessed with a video-mediated recall task to capture in the moment perceptions of partner responsiveness, and with overall ratings of partner responsiveness after the conversation. We aimed to operationalize PPR in a robust and comprehensive manner by tapping into the three key components (i.e., understanding, care, validation; Reis et al., 2018; Reis & Shaver, 1988) as well as overall perceptions of partner support. Perceiving a partner as reacting supportively to one's core needs and interests makes people feel understood, valued, and cared for (Reis et

² In Studies 2a, 2b and 3, the sample sizes used for sensitivity analyses were corrected for non-independence in the data to determine the number of independent observations. Effective sample size: $n_{\text{effective}} = N / (1 + [n - 1] * ICC)$, where N = total number of observations, n = cluster size (e.g., number of partners within a couple and/or number of repeated assessments within partners), and ICC = within-cluster correlation (see Wiley & Wiley, 2019, pages 455-456).

al., 2004), and thus perceptions of partner support were added to the three specific key components to fully capture the overall construct of PPR.

Video-mediated recall. Right after the conversation, the experimenter uploaded the recorded video of the conversation to participants' computers. Participants were instructed to pause the video every 30 seconds and to report how supported ("How much did you feel supported by your partner?"; $M = 4.22$, $SD = 1.33$; cf. Visserman et al., 2018) and understood ("How much did you feel understood by your partner?"; $M = 4.36$, $SD = 1.28$; cf. Reis et al., 2017b) they felt in these 30 seconds of the conversation, each assessed on a 7-point scale (1 = *not at all* to 7 = *very much*). Over the course of the 7-minute conversation, participants reported on how supported and how understood they felt at 14 timepoints in total. Average ratings of feeling understood and feeling supported were highly correlated ($r = .92$) and thus were combined into one assessment (i.e., "supported/understood") that served as a measure of PPR across the conversation ($\alpha = .96$; $M = 4.29$, $SD = 1.28$).

Overall perceptions. After the video-mediated recall task, partners indicated their overall experience of how responsive they perceived their partner to have been during the conversation. We used three items each directly tapping into one of the three components of PPR (Reis et al., 2017a, 2018; Reis & Shaver, 1988): understanding ("My partner understood me"), care ("My partner cared for me"), and validation ("My partner appreciated who I really am"), in addition to perceived partner support ("My partner was supportive"). All items were assessed on a 7-point scale (1 = *not at all* to 7 = *very much*). As expected, perceived support was highly correlated with our direct assessments of each key component of PPR (understanding: $r = .72$, care: $r = .43$, validation: $r = .50$). Thus, we combined the four items (i.e., understanding, care, validation, support) into one assessment of overall perceptions of partner responsiveness ($\alpha = .84$; $M = 5.35$, $SD = 1.10$).

Sacrifice costs. Participants were asked to indicate how costly their sacrifice would be if they were to choose to sacrifice their own preference to resolve the conflict of interest (Visserman et al., 2021) (“If you had to sacrifice your preference, how big would the sacrifice be?”; 1 = *not at all* to 7 = *extremely*), right before the conversation ($M = 4.47, SD = 1.35$), and right after ($M = 4.27, SD = 1.47$).

Results

Analysis strategy. We used multilevel models in SPSS in which individuals were nested within couples to account for non-independence in the data (Kenny et al., 2006). Intercepts were allowed to randomly vary, whereas slopes were treated as fixed effects. Dyads were treated as indistinguishable because gender did not consistently moderate effects and because of the presence of one same-sex couple (Kenny et al., 2006).

Partner responsiveness—sacrifice costs. In separate regression models, we examined the associations of both indicators of PPR (i.e., video-mediated recall and overall perceptions) with appraisals of sacrifice costs after the conversation, while controlling for the costs reported prior to the conversation, which were associated with costs reported after the conversation. Thus, these associations test whether PPR during the conversation predicts the participant’s appraisal of costs, above and beyond how they first appraised these costs, to ensure that participants’ costs appraisals reflect how they feel about the sacrifice *after* having experienced their partner as (un)responsive. This analysis also helps rule out alternative explanations based on the size of the sacrifice (i.e., when the sacrifice is smaller, it is perceived as less costly and, separately, partners are more responsive), because sacrifice size should be reflected in the perceived costs of the sacrifice before the conversation. Both indicators of PPR significantly predicted lower costs appraisals after the conversation (see Table 3). Note that findings are similar when the video-mediated reports of feeling understood

and feeling supported are analyzed separately, and when perceived support is analyzed separately from the understanding, care, and validation components of PPR.

Table 3

Associations of both indicators of perceived partner responsiveness with appraisals of sacrifice costs after the laboratory conversation in Study 2a

Partner Responsiveness	<i>b</i>	<i>SE</i>	95% CI	<i>df</i>	<i>t</i>	<i>p</i>
<i>Video-mediated recall</i>						
Supported/understood	-.19	.06	-.30, -.07	207.5	-3.29	.001
Prior costs report	.70	.05	.60, .80	225.1	13.49	<.001
<i>Overall perceptions</i>						
Responsiveness	-.19	.07	-.32, -.06	191.0	-2.80	.006
Prior costs report	.70	.05	.59, .80	218.4	13.24	<.001

Auxiliary analyses.

(Un)resolved conflicts of interests. We aimed to ensure that the role of partners' responsiveness in reducing sacrifice costs is not simply due to the partner offering to sacrifice. Most participants reported that they and their partner had *not* yet resolved their conflict of interests ($n = 96$, 42.1%), followed by both partners deciding to compromise (i.e., each partner would sacrifice a bit) ($n = 82$, 36%), participants themselves deciding to sacrifice ($n = 31$, 13.6%), or the partner deciding to sacrifice ($n = 19$, 7.5%). Note that some participants ($n = 24$, 9.5%), without clear reasons, had not filled out this section of the survey. Thus, for most participants, their costs appraisals were grounded in an unresolved situation, in a compromise, or in a self-sacrifice, with few cases in which the partner would sacrifice.

When excluding cases in which the partner would sacrifice ($n = 19$, remaining $n = 209$), both indicators of PPR remained significant predictors of sacrifice costs appraisals (video-mediated recall: $p = .002$, overall perceptions: $p = .008$). Additionally, to only reflect

situations in which participants were clearly facing costs for a future sacrifice or compromise, we only selected cases in which participants had decided to sacrifice or compromise (remaining $n = 113$). Again, both indicators of PPR remained significant predictors of sacrifice costs appraisals (video-mediated recall: $p = .003$, overall perceptions: $p = .005$).

Partners' self-reported responsiveness. We additionally explored whether it is participants' perception of the partner's responsiveness, or also the partner's reports of their own responsive behavior that helps participants to appraise their sacrifices as less costly. We asked partners how supportive they had been overall during the conversation ("I was supportive of my partner"; 1 = *not at all* to 7 = *very much*; $M = 4.41$, $SD = 1.53$), which mirrored our assessment of participants' perceived partner support. Perceived partner support and the partner's own report of their support were moderately correlated ($r = .40$). Thus, participants' perceptions and their partner's own reports of their responsiveness aligned quite well while also revealing some discrepancy between perceivers' and enactors' reports. This observation is consistent with an extensive literature showing that people are moderately accurate in perceiving their partner's inner experiences, intentions, and behaviors (Fletcher, 2015; Nater & Zeil, 2015) and responsive behaviors in particular (Maisel et al., 2008).

Similar to participants' perceived partner support, partners' self-reported support also predicted lower sacrifice costs appraisals after the conversation ($b = -.12$, $SE = .05$, 95% CI = $[-.21, -.02]$, $t(217.2) = -2.48$, $p = .014$), controlling for costs appraisals before the conversation. Next, to examine which most strongly affects sacrifice appraisals, we entered both perceived partner support and partners' self-reported support in one model to predict participants' costs appraisals. Partner's self-reported support dropped to marginal significance ($p = .079$), and perceptions of partner support dropped to non-significance ($p = .109$) but still trended in the right direction. Thus, *perceived* partner responsiveness and partner's self-

reported responsive behavior may predict some of the same variance in how costly sacrifices are appraised, and they may both matter in shaping sacrifice appraisals.

Other relationship dynamics. Last, we examined the unique role of PPR in predicting sacrifice appraisals, above and beyond other relationship dynamics. We first explored whether attachment anxiety and avoidance, trust, commitment, and perspective taking, all assessed at an earlier intake session, also predicted sacrifice costs appraisals. In cases in which they did, we examined whether PPR uniquely predicts costs appraisals once accounting for these other variables. None of these other relationship dynamics predicted costs appraisals ($ps > .295$), except for commitment ($b = -.32$, $SE = .09$, $95\% \text{ CI} = [-.51, -.14]$, $t(244.7) = -3.51$, $p = .001$). However, video-mediated recall of PPR ($p = .006$) and overall perceptions ($p = .025$) uniquely predicted costs appraisals when controlling for commitment. Note that PPR was also assessed as a general perception at intake, which did not predict costs appraisals ($p = .595$), suggesting that momentary perceptions may more powerfully predict appraisals of a current sacrifice.

Discussion

Study 2a provides further support for our prediction that greater PPR helps people appraise a sacrifice more positively. Specifically, results showed that greater PPR helps to alleviate anticipated costs for a potential sacrifice that couples were currently facing in their relationship. In this study, we assessed PPR with repeated video-mediated recall assessments of in-the-moment experiences of feeling understood and supported during the conversation, and overall ratings of partner responsiveness after the conversation. The findings were consistent across these two methods as well as across separate operationalizations of PPR, indicating that various aspects of perceived responsiveness (i.e., feeling understood, cared for, validated, and feeling supported overall) matter for shaping sacrifice appraisals.

Although these findings are correlational in nature, we controlled for how costly sacrifices were appraised *before* couples engaged in the conversation and participants were

exposed to the partner's (un)responsive behavior, suggesting that any changes in sacrifice costs appraisals are due to perceptions of the partner's responsiveness *during* the conversation. Thus, taken together with Study 1's experimental results, Study 2a adds further credence to a causal explanation of PPR helping to appraise sacrifices in a more positive light, and extends to real sacrifices that people were currently facing in their relationship.

Study 2b

In Study 2b, the same couples who participated in Study 2a completed an 8-day daily experience study to investigate the role of PPR in alleviating sacrifice costs in couples' daily life, in their natural environment. Here we aimed to examine the role of partner responsiveness in appraising sacrifices *shortly after* participants had sacrificed. We also tested the predicted mediating roles of felt closeness and negative feelings toward the partner to explain *why* greater PPR promotes more positive sacrifices. A sensitivity analysis (using G*Power), given power = .80 and α (two-sided) = .05, revealed that with our sample of 126 couples (see Study 2a), the smallest unstandardized slope we could detect was -.19 for the association between PPR and sacrifice costs appraisals. This analysis accommodated the increased number of observations due to the repeated daily experience assessments within participants, while also correcting for non-independence in the data ($ICC = .19$) and taking the variables' observed standard deviations (see below) into account.

Methods

Measures and procedure. At the end of the laboratory session (see Study 2a), the experimenter instructed couples on the daily experience sampling study procedure, and on how to recognize daily sacrifices in their relationship. Sacrifices were explained as forgoing your own preference by doing something that you find unpleasant and that you would not like to do (active sacrifice; e.g., going on a boring outing with your partner's friends), or by giving up something that you find pleasant or would like to do (passive sacrifice; e.g., not going out

with your best friend), or a combination of the above (e.g., giving up spending time with your friends to go on a boring outing with your partner's friends) (see Van Lange et al., 1997). We explained that sacrifices can be very small, such as forgoing their own preference for a meal and instead having the partner's preferred meal, as long as it involves some experience of personal cost (e.g., unpleasantness). Afterward, participants received a booklet with these definitions and examples of sacrifice, as well as general instructions for completing the daily experience sampling phase of the study.

Couples started the 8-day daily experience sampling study on the first Saturday after the laboratory session. At the end of each day at 9:30 pm, participants received a short survey on their smartphone (using the SurveySignal application; Hofmann & Patel, 2015). The link to the survey expired after midnight to give participants ample time to reply to summary questions regarding the entire day. Participants completed 90.9% of the eight daily surveys ($M = 7.27$, $SD = 1.33$). All items in the daily experience procedure were assessed with one item each to minimize participant fatigue and attrition (Bolger et al., 2003), rated on a 7-point scale (0 = *not at all* to 6 = *very much*).

Perceived partner responsiveness. At the end of the day, participants reported on their partner's responsiveness, operationalized as how supported they felt by their partner that day ("Right now, I feel that my partner supports me"; $M = 4.93$, $SD = 1.17$) (Righetti & Visserman, 2018; Visserman et al., 2018). The validity of this single-item assessment of PPR is supported by its high correlation with perceived partner understanding and moderate to high correlations with perceived partner care and validation in Study 2a.

Closeness and negative affect. Each day participants also reported on how close they felt to their partner that day ("Right now, I feel close to my partner"; $M = 5.04$, $SD = 1.17$) as well as their negative affect toward the partner ("I feel negative feelings toward my partner"; $M = 0.81$, $SD = 1.18$).

Sacrifice costs appraisals. Each day, participants were asked whether they had sacrificed that day (i.e., “Have you sacrificed today for your partner/relationship?”). On average, participants reported to have sacrificed on 1.89 days ($SD = 1.70$, ranging from 0 to 8 days), which totaled to 471 timepoints for our analyses. When participants reported to have sacrificed, they were asked how costly their sacrifices were to them (“About your sacrifice(s) today, how costly were they for you?”; $M = 2.47$, $SD = 1.56$) (Visserman et al., 2021).

Results

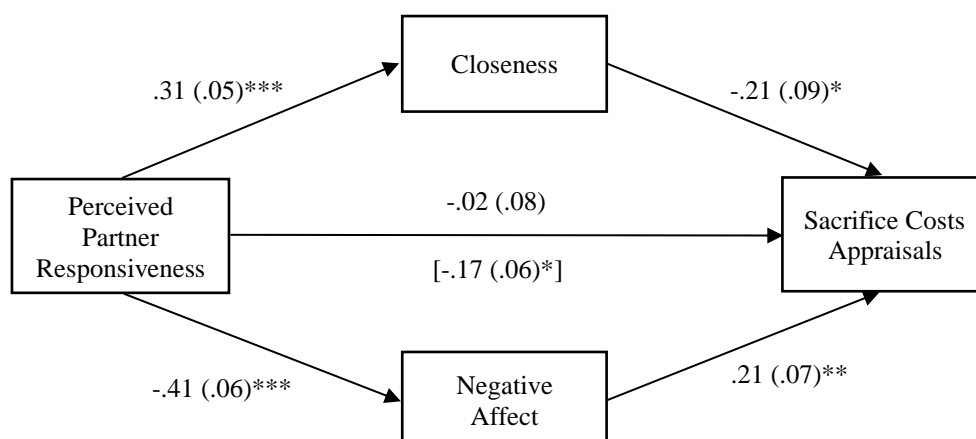
Analysis strategy. Given the repeated daily assessments, we used multilevel models in SPSS in which individuals were nested within couples, and couples and days were crossed to account for the partners reporting on the same days (Kenny et al., 2006). Intercepts were allowed to randomly vary, whereas slopes were treated as fixed effects. Dyads were treated as indistinguishable because gender did not reliably moderate effects and because of the presence of one same-sex couple (Kenny et al., 2006). Predictors were within-person centered (Enders & Tofighi, 2007), such that all daily effects assessed whether day-to-day changes from a participant’s own mean in PPR, felt closeness to the partner, and negative feelings toward them were associated with corresponding changes in sacrifice appraisals. To test for mediation, we used the Monte Carlo method for assessing mediation (MCMAM) using unstandardized estimates. This simulation method estimates a 95% confidence interval for the indirect effect using 20,000 simulations (Selig & Preacher, 2008). The confidence interval is significant at $p < .05$ when the interval does not include the value of zero.

Partner responsiveness—sacrifice costs. First, we entered daily perceptions of the partner’s responsiveness to predict participants’ costs appraisals when they had sacrificed. As expected, on days when participants perceived their partner as more responsive than typical over the course of the daily experience sampling, participants appraised their sacrifices as less costly ($b = -.17$, $SE = .07$, 95% CI = $[-.31, -.02]$, $t(384.7) = -2.20$, $p = .028$).

Mediation by closeness and negative affect. In a dual-pathway mediation model we examined whether the association between PPR and sacrifice costs appraisals is mediated by participants' felt closeness and negative affect toward their partner (see *Figure 1*). First, on days when participants had sacrificed and perceived more responsiveness from their partner than they typically did, they reported greater closeness ($b = .31, SE = .05, 95\% CI = [.22, .40], t(363.4) = 6.82, p < .001$) as well as lower negative affect toward their partner ($b = -.41, SE = .06, 95\% CI = [-.52, -.30], t(374.6) = -7.32, p < .001$). In turn, participants appraised their sacrifices as less costly on days when they felt closer to their partner ($b = -.21, SE = .09, 95\% CI = [-.38, -.03], t(397.5) = -2.31, p = .022$; indirect effect: $b = -.07; 95\% CI = [-.13, -.01]$) and experienced lower negative affect ($b = .21, SE = .07, 95\% CI = [.06, .35], t(387.0) = 2.81, p = .005$; indirect effect: $b = -.09; 95\% CI = [-.15, -.03]$) than they typically did. Thus, these findings provide support for our prediction that perceiving a partner as highly responsive when sacrificing for them helps to appraise sacrifices as less costly at least in part because the partner's responsiveness helps to feel closer to them, as well as feel less negative affect, which typically arises when sacrificing one's personal needs and interests for a partner.

Figure 1

The dual-pathway mediation model for the association between perceived partner responsiveness and sacrifice costs appraisals mediated by greater closeness and lower negative affect toward the partner in Study 2b



Note. All reported values are unstandardized estimates (*b*-values), with their standard errors reported between parentheses. Between brackets are the values for the total effect of perceived partner responsiveness on sacrifice costs appraisals.

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

Auxiliary analyses.

Directionality of mediation process. We conducted additional analyses to better understand the direction of the indirect effect of PPR on sacrifice costs appraisals, mediated by closeness and negative affect. To support the direction of the a-paths (i.e., PPR predicting closeness or negative affect), we controlled for previous day closeness or negative affect to ensure that PPR affects current feelings of closeness and negative affect above and beyond how earlier reports of these feelings toward the partner may shape perceptions of partner responsiveness. Indeed, the associations of PPR with closeness and negative affect held when controlling for previous day closeness ($p < .001$) and previous day negative affect ($p < .001$).

To support the direction of the b-paths (i.e., closeness or negative affect predicting sacrifice costs appraisals), we examined *reversed* mediation models with costs appraisals as the mediator and closeness or negative affect as the outcome—which required analyzing closeness and negative affect in separate models. This method enables us to compare whether the reversed causal direction may also produce a significant indirect effect as well as the percentage of mediation that occurs in the original versus the reversed models. Indeed, the original model with closeness as the mediator is stronger than the reversed model (% mediation original = 47.06%, indirect effect = $-.07$, CI = $[-.14, -.02]$; % mediation reversed = 2.90%, indirect effect = $.01$, CI = $[-.001, .03]$). Similarly, the original mediation model with negative affect as the mediator is stronger than the reversed model (% mediation original = 58.82%, indirect effect = $-.09$, CI = $[-.16, -.04]$; % mediation reversed = 4.88%, indirect effect = $-.02$, CI = $[-.04, .00]$). See *Supplemental Online Materials* for further details.

Other relationship dynamics. From Study 2a we had intake assessments of attachment anxiety and avoidance, trust, commitment, and perspective taking, and in this study, we also assessed daily commitment. Most of these variables did not predict costs appraisals ($ps > .105$). However, intake commitment marginally ($b = -.24, SE = .14, 95\% CI = [-.53, .04], t(141.1) = -1.68, p = .095$) and attachment anxiety significantly ($b = .27, SE = .09, 95\% CI = [.10, .45], t(128.9) = 3.05, p = .003$) predicted costs appraisals, but PPR uniquely predicted costs appraisals when controlling for commitment ($p = .025$) or anxiety ($p = .023$).

Discussion

In the present study we tracked couples' daily sacrifices in their natural environment, which conceptually replicated findings from Studies 1 and 2a, demonstrating that greater PPR helps people appraise a sacrifice for their partner in a more positive light (i.e., as less costly). In this study we also obtained initial evidence for *why* partner responsiveness helps lighten the load of sacrifices, with greater felt closeness to the partner and lower negative affect toward them to some extent driving the association between higher perceived responsiveness and lower sacrifice costs when making daily sacrifices for the partner.

Study 3

In Study 3 we investigated whether PPR fosters more positive appraisals when people are asked to sacrifice by making a long-term change that their partner desires, such as a change in their daily habits or personality. Extending our findings from couples' lab discussions about a potential upcoming sacrifice in Study 2a, here we also studied the role of partner responsiveness and sacrifice appraisals in fueling intentions and actual behavior toward making the change over time.

Changing for a partner represents a particular type of sacrifice. Similar to conflicts of interests that arise from partners holding different goals or needs, people inevitably experience discrepancies between their partner ideals—what their partner would ideally be

like or how they behave—and what they actually observe in reality (Fletcher et al., 2000a).

This discrepancy typically results in the desire that their partner changes, or sacrifices, some aspect of themselves or their behavior (Overall et al., 2006). For example, people may desire their partner to change their lifestyle, give up personal pleasures, break undesired habits, or spend more time with them (Impett et al., 2005; Mandal, 2020; Visserman et al., 2019).

Accommodating such desire from a partner to change oneself or one's behavior typically goes against one's own preferences and thereby represents a sacrifice (Van Lange et al., 1997).

Romantic couples came to the laboratory to discuss such change that one partner desired from the other. We examined whether greater PPR during the discussion fostered more positive appraisals of the change sacrifice, thereby fueling greater intentions to make the sacrifice, and in turn, greater progress toward actually making the sacrifice two weeks later. In addition to Study 2b, we also aimed to find further support for the mediating roles of increased closeness and reduced negative affect toward the partner as explanations for why PPR fosters more positive sacrifice appraisals.

Methods

Participants. Participants were 111 couples (i.e., 222 individuals), comprised of mostly heterosexual couples and three same-sex couples. Couples were eligible to participate if they were together for at least one year. Participants' mean age was 26.8 years ($SD = 7.2$ years, range = 18 to 57 years), and they reported the following ethnic backgrounds: 24.6% Western European, 18.2% South Asian, 7.9% Eastern European, 6.9% Caribbean, 5.4% South American, 2.5% African, 2.5% Middle Eastern, 2.5% Southeast Asian, 14.3% bi- or multiethnic, 12.8% other, and 2.5% unreported. As their highest achieved education level, participants reported high school/some university (40.1%), a Bachelor's degree (40.6%), a Master's degree (10.1%), an Associates/vocational/2-year degree (5.5%), a PhD/MD (1.4%), not having finished high school (1.4%), or a JD, MBA, or other 2-3 year graduate program

(0.9%). Couples reported being involved in their current relationship for 4.1 years on average ($SD = 2.7$ years; range = 1 to 23 years), and 50.5% lived together with 23.5% being married.

Couples were recruited through advertisements posted online (Reddit, Kijiji) and in public locations (e.g., libraries) in a major Canadian city. Participants were compensated with \$40 CAD for the lab session and the 2-week follow-up survey. The data come from a larger study on relationships (for further details see: Le et al., 2020; Park et al., 2020). A minimum sample size of 100 couples was specified prior to data collection based on available budget and sample sizes typically used in relationship studies as well as previous studies specifically examining outcomes among couples requesting a change from each other (Overall et al., 2006, 2009). Sensitivity analyses (using G*Power), given power = .80 and α (two-sided) = .05, revealed that with our sample of 111 couples, the smallest unstandardized slopes we could detect were .16 and .18 for the associations of PPR with sacrifice appraisals and sacrifice intentions, respectively. These analyses corrected the sample size for non-independence in the data ($ICCs$ are .15 and .13, respectively) and take all variables' observed standard deviations (see below) into account.

Measures and procedure. During the lab session, couples discussed a characteristic or behavior that one partner (i.e., the requester) would like their partner (i.e., the participant) to change. Partners were randomly assigned to the role of requester or participant for the first discussion, after which they switched roles for the second discussion. The conversational structure was adapted from past research (Fritz et al., 2003). At the beginning of the first discussion, the requester was instructed to “please tell your partner about something you would like them to change, work on, or improve” and to take one minute to think of such topic. The requester then opened the conversation with a 1-minute elaboration on their change request, during which the participant listened without yet responding. The participant then responded for one minute while the requester listened. After that, the requester spoke for an

additional minute, followed by another minute by the participant. Finally, couples spoke freely for an additional two minutes.

Right after each discussion, participants completed a short questionnaire about the conversation they just had. Initial pilot testing and participant feedback indicated that the conversation structure felt natural and suited the topic well. Topics of change raised by partners varied widely and covered a range of more mundane to more severe issues, but often involved a change of personal characteristics or behaviors. For example, requests often involved the partner's lifestyle (e.g., exercise more, be less lazy, change their diet, be tidier, change their morning routine, play fewer video games), communication (e.g., communicate better, control their emotions, be on their phone less), or dedication to the relationship (e.g., spend more time together, or provide more space and be more independent). These topics parallel those typically found in studies on more mundane and more substantial sacrifices (e.g., Impett et al., 2005; Visserman et al., 2019), including how to coordinate partners' daily lives (e.g., picking and planning activities together, what to eat, dividing chores) and couples' time spent together (e.g., play less video games, reduce time with friends).

All couples were contacted again two weeks later to complete an online follow-up survey to track their progress on the change they discussed in the lab. Note that due to a survey error, a third of the participants accidentally did not receive one-third of the follow-up survey. Although these participants were missing at random, this caused some attrition of the original sample. Additionally, some participants failed to remember the change they discussed (i.e., four participants did not remember the change that was asked from them, and six partners did not remember the change they asked from their partner). Therefore, the follow-up analyses are based on 128 participants (i.e., 65 couples) and thus are somewhat underpowered. Sensitivity analyses (using G*Power), given power = .80 and α (two-sided) = .05, revealed that with this sample of 65 couples, the smallest unstandardized slopes we

could detect were .21 and .30 for the associations of PPR with participants' behavior toward making the change sacrifice, as reported by themselves and their partners, respectively. These analyses corrected the sample size for non-independence in the data (*ICCs* are .09 and .33, respectively) and take all variables' observed standard deviations (see below) into account.

Perceived partner responsiveness. Right after the conversation, participants' perception of their partner's responsiveness during the change conversation was assessed using one face-valid item tapping into all three components of PPR (i.e., care, understanding, and validation; Reis et al., 2017a, 2018; Reis & Shaver, 1988): "My partner expressed that they cared about, understood, and validated my needs" ($M = 5.65$, $SD = 1.46$), rated on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*).

Closeness and negative affect. Right after the conversation, participants' felt closeness with their partner during the conversation was assessed with one item ("I felt close to my partner in this discussion"; 1 = *strongly disagree* to 7 = *strongly agree*; $M = 5.64$, $SD = 1.44$). Participants were also asked "How much did you feel the following emotions during this discussion with your partner?" (1 = *not at all* to 10 = *as much as I've ever felt*), which—relevant to sacrifice (Righetti et al., 2020b)—included "*anger*", "*hostile*", "*annoyed*", and "*resentment*". These four negative emotions were aggregated into one overall assessment of negative affect toward the partner ($\alpha = .89$; $M = 2.57$, $SD = 2.05$).

Sacrifice appraisals. Right after the conversation, participants were asked how they appraised the change that their partner requested from them. Similar to previous work on sacrifice costs and benefits (Visserman et al., 2021), we assessed perceived costs ("Making this change would be costly for me"; $M = 2.41$, $SD = 1.62$) and benefits ("Making this change would be beneficial for me"; $M = 5.42$, $SD = 1.64$), each rated on a 7-point scale (1 = *not at all* to 7 = *extremely*). We also assessed perceived level of sacrifice ("Making this change would be a sacrifice for me"; 1 = *not at all* to 7 = *very much so*; $M = 2.86$, $SD = 1.65$). These

three items were aggregated into one overall assessment indicating how positively this sacrifice by changing for their partner was appraised ($\alpha = .54$; $M = 5.38$, $SD = 1.18$), with the costs and sacrifice level items reverse-coded. Although the reliability was less than ideal, results were similar for each separate sacrifice appraisal (see *Supplemental Online Materials*). For ease of presentation, the results below are based on the overall assessment of sacrifice appraisals. Note that due to the nature of the conversation—the change being requested during the conversation—we could not assess these appraisals prior to the conversation and thus, unlike Study 2a, could not control for earlier appraisals of the change sacrifice.

Sacrifice intentions. Right after the conversation, we assessed participants' anticipated effort (Le et al., 2020; Sisson et al., 2019) (“To what extent will you put in the effort to make this change for your partner?”; 1 = *not at all* to 7 = *a lot*; $M = 5.62$, $SD = 1.25$) and anticipated success (“How successful do you think you will be in making this change?”; 1 = *not at all successful* to 7 = *extremely successful*; $M = 4.93$, $SD = 1.36$). These two items were aggregated into one overall assessment of participants' sacrifice intentions ($\alpha = .72$, $r = .57$; $M = 5.27$, $SD = 1.18$).

Sacrifice behavior. At follow-up, participants were asked how much effort they had put into making the change (“To what extent did you try to make the change that your partner requested in the initial lab conversation?”; $M = 5.12$, $SD = 1.20$) and how successful they were (“To what extent do you feel that you were successful in making the change your partner requested in the initial lab conversation?”; $M = 4.79$, $SD = 1.34$), both rated on a 7-point scale (1 = *not at all successful* to 7 = *extremely successful*).³ These two items were aggregated into one overall assessment indicating self-reported sacrifice ($\alpha = .86$, $r = .75$; $M = 4.95$, $SD =$

³ The scale anchors for the item assessing exerted effort should have been 1 = *did not try to change at all* to 7 = *tried very hard to change*, but were erroneously programmed with the same anchors as the item assessing success. Although participants may have understood that they were asked to report on their efforts rather than their success at making the change sacrifice, this item may to some extent reflect success rather than effort. To facilitate interpretation, we combined both items into one composite score reflecting sacrifice behavior.

1.19). We also asked the partner who requested the change how much effort they thought the participant had put into the change (“To what extent do you think your partner tried to make the change you requested in the initial lab conversation?”; 1 = *did not try to change at all* to 7 = *tried very hard to change*; $M = 4.88$, $SD = 1.67$), and how successful they perceived them to be (“To what extent was your partner successful in making the change you requested in the initial lab conversation?”; 1 = *not at all successful* to 7 = *extremely successful*; $M = 4.68$, $SD = 1.62$). These two items were aggregated into one overall assessment indicating partner-reported sacrifice ($\alpha = .91$, $r = .83$; $M = 4.75$, $SD = 1.60$).

Results

Analysis strategy. We used multilevel models in SPSS in which individuals were nested within couples to account for non-independence in the data (Kenny et al., 2006). Intercepts were allowed to randomly vary, whereas slopes were treated as fixed effects. Dyads were treated as indistinguishable because gender did not consistently moderate effects and because of the presence of three same-sex couples (Kenny et al., 2006). In a dual-pathway mediation model we examined the mediating roles of closeness and negative affect in the association between PPR and sacrifice appraisals, as in Study 2b, using the Monte Carlo method for assessing mediation (MCMAM; Selig & Preacher, 2008), with unstandardized estimates, to obtain the 95% confidence interval for the indirect effect. Additionally, in a sequential mediation model, we examined the indirect effect of PPR on sacrifice behavior at follow-up, mediated by sacrifice appraisals and sacrifice intentions. We followed the steps as recommended by Taylor et al. (2008) in Mplus to test each step of this indirect effect model.

Partner responsiveness—sacrifice appraisals. In line with our findings from Studies 1, 2a and 2b, greater PPR during the conversation predicted more positive appraisals of the change sacrifice (see Table 4). This finding also held for each sacrifice appraisal (i.e., costs, benefits, sacrifice level) when examined separately (see *Supplemental Online Material*).

Mediation by closeness and negative affect. In a dual-pathway mediation model we examined our hypothesis that closeness and negative affect toward the partner mediate the association between PPR and sacrifice appraisals (see *Figure 2*). First, greater PPR predicted greater closeness ($b = .75, SE = .05, 95\% CI = [.66, .84], t(158.0) = 16.45, p < .001$) as well as lower negative affect toward the partner ($b = -.46, SE = .09, 95\% CI = [-.64, -.28], t(199.0) = -4.95, p < .001$). In turn, participants appraised the change sacrifice more positively the more they felt close to their partner ($b = .17, SE = .08, 95\% CI = [.001, .33], t(195.5) = 1.99, p = .048$; indirect effect: $b = .13; 95\% CI = [.01, .25]$) and the lower negative affect they experienced toward them ($b = -.15, SE = .04, 95\% CI = [-.23, -.06], t(184.8) = -3.47, p = .001$; indirect effect: $b = .07; 95\% CI = [.03, .12]$). Thus, in line with our findings from Study 2b, partner responsiveness when discussing a change request helps people appraise a change sacrifice in a more positive light, at least in part due to increased feelings of closeness and experiencing less negative affect toward the partner (see *Figure 2*).

Figure 2

The dual-pathway mediation model for the association between perceived partner responsiveness and sacrifice appraisals mediated by greater closeness and lower negative affect toward the partner in Study 3

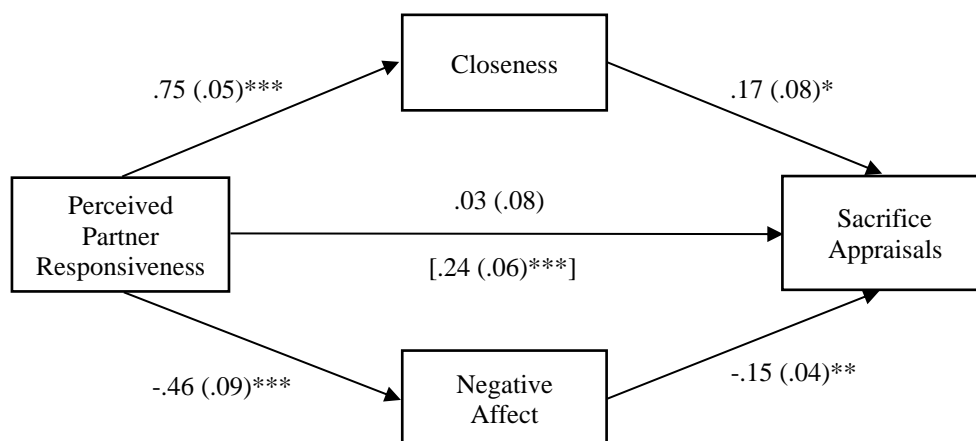


Figure 2. All reported values are unstandardized estimates (*b* values), with their standard errors reported between parentheses. Between brackets are the values for the total effect of perceived partner responsiveness on sacrifice appraisals.

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

Table 4

Associations of partner responsiveness with sacrifice appraisals and sacrifice intention in the lab conversation, and sacrifice behavior at follow-up in Study 3

Partner Responsiveness	<i>b</i>	<i>SE</i>	95% CI	<i>df</i>	<i>t</i>	<i>p</i>
<i>Lab Conversation</i>						
Sacrifice appraisals	.24	.06	.13, .35	177.0	4.33	< .001
Sacrifice intentions	.19	.06	.08, .30	177.3	3.35	.001
<i>Follow-up</i>						
Self-reported sacrifice	.12	.07	-.02, .27	115.7	1.70	.092
Partner-reported sacrifice	.23	.09	.04, .41	114.2	2.40	.018

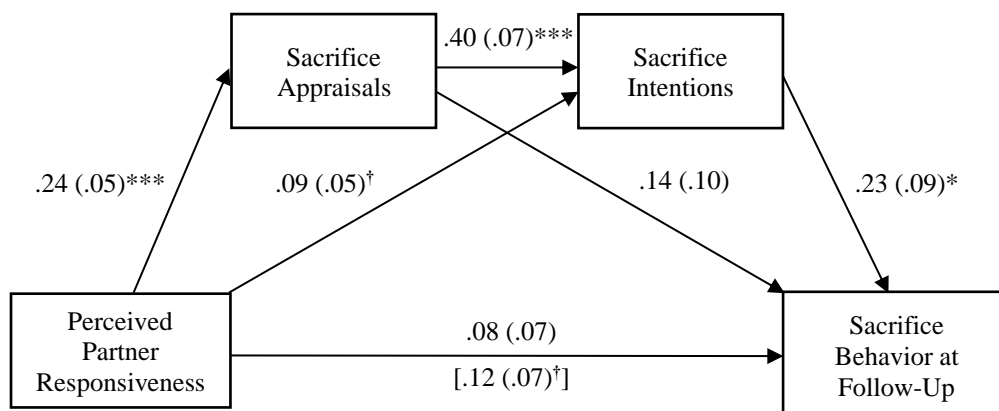
Partner responsiveness—sacrifice intentions and behavior. Greater PPR during the conversation predicted greater intentions to sacrifice (i.e., making the requested change for the partner), and marginally significantly predicted greater self-reported sacrifice behavior two weeks later (see Table 4). Additionally, PPR during the conversation also predicted greater actual sacrifice behavior as reported by the partner. This finding underscores the validity of the participant's self-reported sacrifice behavior, given that their partner who requested the change similarly was able to see progress in them making this change.

Sequential mediation by sacrifice appraisals and intentions. Using sequential mediation modeling in Mplus, we examined the indirect path of PPR, through sacrifice appraisals and sacrifice intentions, to self-reported sacrifice behavior (see *Figure 3*). First, similar to the findings shown above, greater PPR marginally predicted greater sacrifice

behavior at follow-up ($b = .13$, $SE = .07$, 95% CI = $[-.02, .27]$, $z = 1.76$, $p = .079$). As step one of the sequential mediation model, and in line with our key finding, PPR promoted more positive sacrifice appraisals ($b = .24$, $SE = .05$, 95% CI = $[.14, .35]$, $z = 4.49$, $p < .001$). Second, more positive sacrifice appraisals predicted greater sacrifice intentions ($b = .40$, $SE = .07$, 95% CI = $[.28, .53]$, $z = 6.19$, $p < .001$), while controlling for PPR. Last, greater sacrifice intentions in turn promoted greater self-reported sacrifice behavior at follow-up two weeks later ($b = .23$, $SE = .09$, 95% CI = $[.05, .42]$, $z = 2.49$, $p = .013$), while controlling for PPR and sacrifice appraisals. The direct effect of PPR on sacrifice behavior was reduced to non-significance ($b = .08$, $SE = .07$, 95% CI = $[-.06, .23]$, $z = 1.14$, $p = .255$), while the indirect effect was significant ($b = .023$, $SE = .011$, 95% CI = $[.001, .045]$, $z = 2.05$, $p = .040$). Note that in the Supplemental Online Materials, we present additional analyses of this sequential mediation model that includes the dual-pathway mediation from PPR to closeness and negative affect, predicting sacrifice appraisals, intentions, and behavior.

Figure 3

The sequential mediation model for the association between perceived partner responsiveness in the lab and sacrifice behavior at follow-up, mediated by sacrifice appraisals and intentions in Study 3



Note. All reported values are unstandardized estimates (*b* values), with their standard errors reported between parentheses. Between brackets are the values for the total effect of partner responsiveness on sacrifice behavior at follow-up.

†*p* < .10; **p* < .05; ***p* < .01; ****p* < .001.

Auxiliary analyses.

Partners' self-rated responsiveness. As in Study 2a, we additionally examined whether the partner's report of their own responsiveness also predicted sacrifice appraisals. Similar to our assessment of PPR, we also assessed the partner's self-reported responsiveness during the conversation ("I expressed that I cared about, understood, and validated my partner's needs"; *M* = 5.73, *SD* = 1.24), rated on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). First, in a separate model we entered partners' self-rated responsiveness to predict participants' sacrifice appraisals. Partners' self-rated responsiveness marginally predicted more positive appraisals (*b* = .12, *SE* = .07, 95% CI = [-.01, .25], *t*(190.6) = 1.76, *p* = .080). Next, in a model in which we simultaneously entered participants' PPR and partners' self-rated responsiveness to predict sacrifice appraisals, PPR significantly predicted appraisals (*p* < .001) while partners' self-rated responsiveness did not (*p* = .703). As in Study 2a, PPR and partner's self-reported responsiveness were moderately correlated (*r* = .38, *p* < .001). However, in contrast to Study 2a, these findings suggest that perceptions of partner responsiveness are a more proximal predictor of sacrifice appraisals and do not necessarily need to match the partner's reports of their own responsiveness. This conclusion aligns with a broader literature on the impact of *perceived* versus partner enacted (or self-reported) responsiveness (for an overview see Reis & Gable, 2015).

Change conceptualized as sacrifice. To ensure that the change for the partner indeed represented a sacrifice, we additionally re-ran our key analyses while excluding participants who indicated that the change that their partner requested was "*not at all*" a sacrifice (i.e.,

“1”), with 152 participants remaining in the lab session, and 94 (self-reports) and 87 (partner-reports) at follow-up. All results were highly similar except for the association between PPR and sacrifice behavior at follow-up: participants self-reported sacrifice behavior became non-significant ($p = .135$) while the association with partner-reported sacrifice behavior remained significant ($p = .031$). Moreover, while all separate paths in the sequential mediation model held when applying this restriction, the indirect effect of PPR to sacrifice behavior reduced to non-significance ($b = .015$, $SE = .010$, 95% CI = [-.005, .035], $z = 1.51$, $p = .131$). These trending but non-significant results may be due to the limited statistical power for this smaller sample, thus, we decided to include all cases in our main analyses. Moreover, it is possible that during the lab session participants may have re-appraised the partner’s requested change from “somewhat” of a sacrifice to “not at all” *because* they felt cared for, understood, and validated by their partner, so excluding these cases may not necessarily be valid.

Prior discussion of change topic. To ensure that our findings are not confounded with how much couples had discussed the topic of the change request prior to the in-lab discussion, we additionally controlled for the extent to which participants had engaged in previous discussions about the change in all analyses examining the associations of PPR with sacrifice appraisals, sacrifice intentions, and each partners’ report on actual sacrifice behavior at follow-up. All findings held when controlling for prior discussion of the change topic.

Directionality of mediation process. In support of the direction of the a-paths (i.e., PPR predicting closeness or negative affect) in the indirect effect of PPR on sacrifice appraisals, the associations of PPR with closeness and negative affect held when controlling for closeness ($p < .001$) and negative affect ($p < .001$) assessed right before the conversation.

In support of the direction of the b-paths (i.e., closeness or negative affect predicting sacrifice appraisals), the original model with closeness as the mediator is stronger than the reversed model in which we reversed the positions of the mediator and outcome, although the

reversed model showed a significant—but small—indirect effect (% mediation original = 83.33%, indirect effect = .19, CI = [.07, .31]; % mediation reversed = 6.67%, indirect effect = .04, CI = [.01, .08]). Moreover, the original model with negative affect as the mediator is stronger than the reversed model, although the indirect effects are comparable (% mediation original = 41.67%, indirect effect = .08, CI = [.04, .13]; % mediation reversed = 15.22%, indirect effect = -.10, CI = [-.18, -.04]). See *Supplemental Online Materials* for further details.

Other relationship dynamics. Attachment anxiety and avoidance, commitment, and perspective taking were assessed at an earlier intake session. Commitment and perspective taking did not predict sacrifice appraisals ($p > .181$), but attachment anxiety ($b = -.09$, $SE = .05$, 95% CI = [-.19, .01], $t(200.5) = -1.80$, $p = .074$) and avoidance ($b = -.16$, $SE = .09$, 95% CI = [-.34, .01], $t(197.5) = -1.87$, $p = .063$) marginally did. However, PPR uniquely predicted sacrifice appraisals when controlling for anxiety ($p < .001$) or avoidance ($p < .001$).

Discussion

In Study 3 we investigated the role of PPR in appraising a sacrifice in the form of making a change desired by the partner, and the impact on actual behavior toward making this sacrifice over time. Results conceptually replicated our previous studies' findings that greater PPR helps people appraise a change sacrifice in a more positive light. Results also conceptually replicated findings from Study 2b, showing that PPR was associated with feeling closer to a partner as well as less negative affect toward them, which in turn were associated with positive sacrifice appraisals.

The present study—for the first time—also demonstrated that PPR can have important longer-term implications for resolving conflicts of interests in the relationship. That is, findings from the sequential mediation analysis showed that perceiving a partner as highly responsive when they request a change helps people to see this sacrifice for their partner in a more positive light and, in turn, feel more motivated to sacrifice, which fueled actual sacrifice

behavior as indicated two weeks later. Moreover, partners were also able to see participants' dedication and success in making the change, which suggests a cyclical process with the greater climate of responsiveness during the conversation ultimately benefitting the partner who requested the change they wanted to see in their partner.

This study is also the first to focus on making a change for the partner as a particular type of sacrifice that people make to resolve different preferences in the relationship. The uniqueness of this type of sacrifice was characterized by the costs being generally appraised as somewhat lower than in Studies 1, 2a, and 2b. In contrast, perceived benefits for oneself were generally appraised as higher and clearly outweighed the costs of making the requested change for the partner. Some changes—although initially not preferred—may be particularly personally endorsed and beneficial, such as changing one's life style (e.g., enjoying a healthier, more energized, and organized life), while other changes may resemble a more typical sacrifice such as increasing time with the partner and reducing time with friends. Although our findings largely held when restricting our analyses to cases that clearly resembled a sacrifice, in Study 4 we turned our focus to sacrifices that are made by moving for a partner's career, which typically require giving up one's own needs and interests to a very large extent, and in which personal benefits may be less prominent.

Study 4

In Study 4 we expanded our focus from relatively mundane and moderately large sacrifices, to one of the most *life-changing sacrifices* that romantic partners can make for each other—when they move to a different city or country to support their partner's career (Farrell et al., 2016; Impett et al., 2005; Mandal, 2020). In contrast to our previous studies, we examined how such sacrifices are appraised in *hindsight*, that is, within the year following the sacrifice. We assessed the full range of sacrifice appraisals assessed in Studies 1-3, including the extent to which the relocation felt like a sacrifice, sacrifice costs, satisfaction, personal and

relational benefits, and regret. We also sought to provide additional evidence for the roles of closeness and negative affect toward the partner in explaining why greater PPR helps people to appraise even a life-changing sacrifice in a more positive light.

We also expanded our theoretical focus on how people come to see their partner as responsive to them by examining the partner's attunement to satisfying sacrificers' fundamental psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 2000). These fundamental needs tend to be compromised even after making smaller, daily sacrifices (Horne et al., 2021) and may be particularly relevant when engaging in a life-changing sacrifice. We predicted that the more the partner is perceived to have been helpful in fulfilling these fundamental needs in the wake of the move, the more they are presently perceived as being responsive to the sacrificer's needs more generally, thereby helping the sacrificer appraise their relocation sacrifice in a more positive light.

Method

Participants. The sample consisted of 230 participants (67.8% women, 31.3% men, 0.9% non-binary), with a mean age of 32.3 years ($SD = 7.5$). The majority of participants identified as White (73.5%), some identified as bi- or multi-ethnic (9.1%), Latin American (4.8%), South Asian (4.8%), East Asian (2.6%), or Black (2.6%), and few identified as "other" (e.g., Middle Eastern, South East Asian; 2.6%). Most participants identified as heterosexual (88.3%), some as bisexual (8.3%), and few as gay (1.3%), lesbian (0.9%), or "other" (e.g., asexual or queer; 1.3%). Participants were romantically involved for 8.4 years on average ($SD = 4.8$, range = 1.2 to 29 years), and almost all participants were married (96.1%), while some indicated that they were in a "dating relationship" (1.7%) and a few indicated "other" (e.g., common law or engaged; 2.2%). On average they had moved 2,060 km (1,280 miles) from their homes, with 35.1% having moved to a new city, 45.7% to a new state or province, and 19.2% to a new country.

Participants were recruited on the online platform Prolific (Palan & Schitter, 2018; Peer et al., 2017) and compensated with \$10 CAD (or another currency's equivalent; e.g., \$7.68 USD, £5.96 GBP). Based on a power calculation (using G*Power) we targeted a minimum sample of 200 participants to provide high power to detect a relatively small effect. Originally, 267 participants filled out the survey, but five participants did not indicate that they had moved for their partner, four participants failed the attention checks, twenty responses were duplicate IP addresses, four participants did not complete the survey, three participants admitted that they were not actually romantically involved (two participants) or did not reply honestly to all questions (one participant), and one participant's responses seemed to reflect automatic responding (i.e., only responding with "1" and "7" and no consistency in responding to reversed items). After removing these cases, our final sample consisted of 230 participants. A sensitivity analysis (using G*Power), given power = .80 and α (two-sided) = .05, revealed that with this sample size, the smallest unstandardized slope we could detect was .17 for the association of PPR with sacrifice appraisals when taking each of these variables' observed standard deviations (see below) into account.

Measures and procedure. The current data are part of a larger study on consequences of relocating with a romantic partner (see Carswell et al., 2021). Participants were eligible to participate if they were romantically involved, had moved with their partner to a different city or country in the past year primarily for their partner (e.g., to accommodate their studies or job opportunities elsewhere), and they already lived with their partner before the move. Failing any one of these criteria disqualified access to the survey. All participants replied to various questions regarding the relocation and the relationship with their partner more generally. The following measures were assessed relevant to the present investigation.

Need satisfaction from partner. We assessed the partner's helpfulness in satisfying fundamental needs for relatedness, autonomy, and competence by creating a scale adapted

from earlier work assessing the satisfaction of these needs (La Guardia et al., 2000; Sheldon et al., 2001). Participants were asked to think back on their time since relocating and reported to what extent their partner helped them meet their needs. They were presented with four items tapping the need for relatedness (i.e., “Feeling loved and cared about”, “Feeling close and connected with the other people who are important to me”, “Feeling a sense of contact with people who care for me, and whom I care for”, and “Feeling a strong sense of intimacy with the people I spend time with”; $\alpha = .94$; $M = 5.10$, $SD = 1.49$). Similarly, they were presented with four items tapping the need for autonomy (e.g., “Feeling free to be who I am”, “Feeling that my choices express my true self”, “Feeling free to do things my own way”, and “Feeling that my choices are based on my true interests and values”; $\alpha = .94$; $M = 4.65$, $SD = 1.57$), and four items tapping the need for competence (e.g., “Feeling like a competent person”, “Successfully completing difficult tasks and projects”, “Taking on and mastering hard challenges”, and “Being very capable in what I do”; $\alpha = .93$; $M = 4.42$, $SD = 1.73$). All items were assessed on a 7-point scale (1 = *not fulfilled by my partner*, 4 = *somewhat fulfilled by my partner*, 7 = *totally fulfilled by my partner*). The partner’s helpfulness in fulfilling relatedness, autonomy, and competence needs in the wake of the move were averaged into one assessment representing need satisfaction from the partner ($\alpha = .82$; $M = 4.73$, $SD = 1.37$).

Perceived partner responsiveness. Similar to Study 2a, PPR was assessed with three items each tapping into one of the three components of PPR (Reis et al., 2017a, 2018; Reis & Shaver, 1988): understanding (“My partner understands me”), care (“My partner cares for me”), and validation (“My partner appreciates who I really am”), assessed on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). These three items were aggregated into one assessment indicating PPR ($\alpha = .85$; $M = 5.83$, $SD = 1.22$).

Closeness and negative affect. Participants’ felt closeness with their partner was assessed with one item (“How close do you and your partner feel?”; 1 = *not at all* to 7 =

extremely; $M = 5.83$, $SD = 1.40$), as part of the Perceived Relationship Quality Component Inventory (PRQC; Fletcher et al., 2000b). Negative affect toward the partner was assessed in two ways. First, one item assessed anger or resentment toward the partner (“How often do you feel angry or resentful toward your partner?”; 1 = *not very often* to 7 = *very often*; $M = 3.13$, $SD = 2.06$). Second, one item assessed overall negative affect (“How negative do you feel toward your partner?”; 1 = *very negative* to 7 = *not at all negative*), which we reverse-coded for ease of interpretation, with higher scores reflecting greater negative affect toward the partner ($M = 2.27$, $SD = 1.43$). These two items were averaged into one assessment indicating negative affect toward the partner ($\alpha = .69$, $r = .56$; $M = 2.70$, $SD = 1.55$).

Sacrifice appraisals. Participants were first instructed that “A “sacrifice” is when you forgo your own preferences, goals, or desires for your partner or your relationship” and were then asked how much they perceived the move with their partner as a sacrifice (“How much was the move a sacrifice for you (i.e., you gave up your own preferences, goals, or desires)?”; 1 = *not at all* to 7 = *very much so*; $M = 4.70$, $SD = 1.89$). We then assessed sacrifice costs (“This move involved a lot of personal costs for me”; $M = 4.37$, $SD = 2.04$), satisfaction (“I feel happy that I moved with my partner”; $M = 5.93$, $SD = 1.35$), personal benefits (“I feel like this move has provided me with important benefits”; $M = 4.85$, $SD = 1.65$), relational benefits (“I feel like this move has been very beneficial for our relationship”; $M = 5.34$, $SD = 1.45$), and regret (“I regret moving with my partner”; $M = 1.93$, $SD = 1.44$), all assessed on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). These six appraisals were averaged into one assessment indicating how positively the relocation sacrifice was appraised ($\alpha = .78$; $M = 4.85$, $SD = 1.14$), with the sacrifice level, costs, and regret items reverse coded.

Results

Analysis strategy. We conducted linear regression analyses in SPSS to test all main associations and the mediation models. As in Studies 2b and 3, we used the Monte Carlo

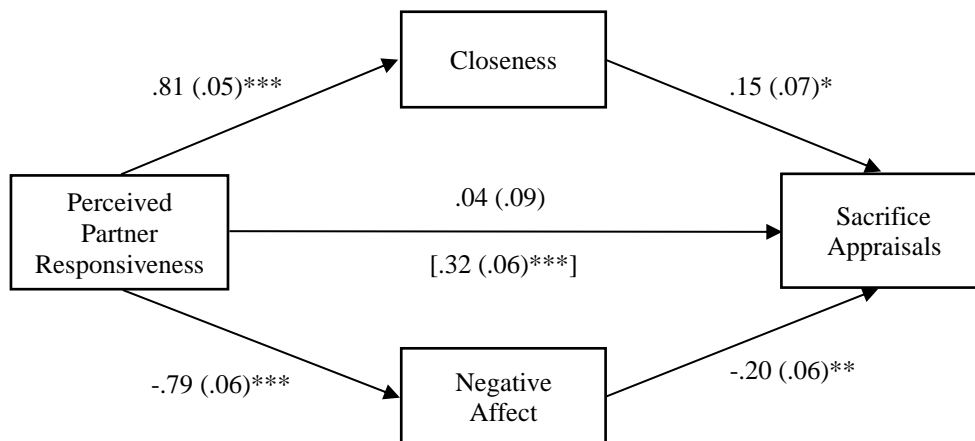
method for assessing mediation (MCMAM; Selig & Preacher, 2008), with unstandardized estimates, to obtain confidence intervals for the indirect effects. Note that gender did not reliably moderate the findings.

Partner responsiveness—sacrifice appraisals. In line with our findings from Studies 1 to 3, greater PPR predicted appraising the relocation sacrifice in a more positive light overall ($b = .32$, $SE = .06$, 95% CI = [.20, .43], $t(228) = 5.40$, $p < .001$), and this finding held for each separate sacrifice appraisal as well, except for sacrifice costs ($p = .491$; see *Supplemental Online Material*).

Mediation by closeness and negative affect. In a dual-pathway model we aimed to provide another test of our hypothesis that closeness and negative affect toward the partner mediate the association between PPR and sacrifice appraisals (see *Figure 4*). Indeed, greater PPR predicted feeling closer to the partner ($b = .81$, $SE = .05$, 95% CI = [.71, .92], $t(228) = 15.62$, $p < .001$), and also predicted lower negative affect toward the partner ($b = -.79$, $SE = .06$, 95% CI = [-.91, -.67], $t(228) = -12.57$, $p < .001$). In turn, participants appraised the relocation sacrifice more positively the closer they felt to their partner ($b = .15$, $SE = .07$, 95% CI = [.002, .29], $t(228) = 1.99$, $p = .048$; indirect effect: $b = .12$; 95% CI = [.01, .24]) and the lower negative affect they experienced toward them ($b = -.20$, $SE = .06$, 95% CI = [-.32, -.08], $t(228) = -3.28$, $p = .001$; indirect effect: $b = .16$; 95% CI = [.06, .26]). Thus, in line with our findings from Studies 2b and 3, perceiving a partner as highly responsive helps people to appraise a life-changing relocation sacrifice in a more positive light, at least in part due to greater feelings of closeness and experiencing less negative affect toward the partner.

Figure 4

The dual-pathway mediation model for the association between perceived partner responsiveness and sacrifice appraisals mediated by greater closeness and lower negative affect toward the partner in Study 4



Note. All reported values are unstandardized estimates (*b* values), with their standard errors reported between parentheses. Between brackets are the values for the total effect of perceived partner responsiveness on sacrifice appraisals.

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

Need satisfaction from partner—partner responsiveness. Additionally, we examined whether perceiving a partner as responsive originates from their helpfulness in satisfying participants' fundamental needs after relocating for them. Indeed, the more participants perceived their partner to have helped them satisfy their fundamental needs for relatedness, autonomy, and competence in the wake of the move, the more they generally perceived the partner to be responsive to them (i.e., feeling understood, valued, and cared for). This finding also held for each of the three needs analyzed separately (see Table 5).

Table 5

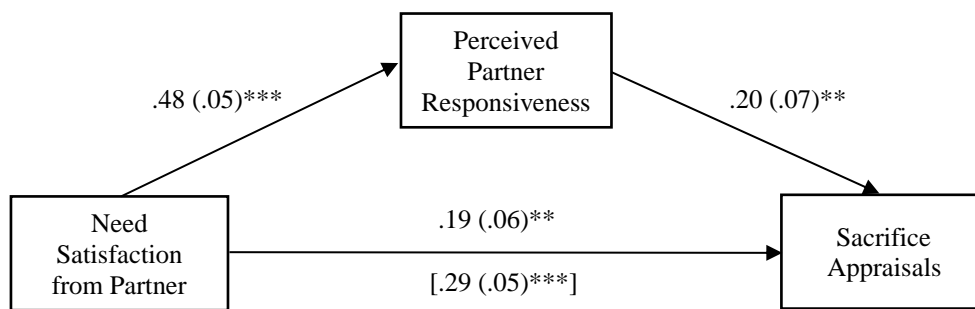
Perceived partner responsiveness predicted by perceived partner's helpfulness in satisfying relatedness, autonomy, and competence needs in Study 3

Perceived Partner Responsiveness	<i>b</i>	<i>SE</i>	95% CI	<i>df</i>	<i>t</i>	<i>p</i>
Relatedness	.52	.04	.43, .60	228	12.04	<.001
Autonomy	.33	.05	.24, .43	228	7.12	<.001
Competence	.25	.04	.16, .33	228	5.63	<.001
Overall need satisfaction	.48	.05	.38, .58	228	9.55	<.001

Need satisfaction from partner—partner responsiveness—sacrifice appraisals. Next, in a mediation model, we examined whether the association between PPR and sacrifice appraisals originates from greater helpfulness from the partner in satisfying fundamental needs in the wake of the move. First, perceived overall need satisfaction from the partner predicted appraising the sacrifice in a more positive light overall ($b = .29$, $SE = .05$, 95% CI = [.18, .39], $t(229) = 5.50$, $p < .001$) as well as each sacrifice appraisal separately, again except for sacrifice costs ($p = .757$; see *Supplemental Online Material*). Next, we examined whether this association is mediated by PPR (see *Figure 5*). We entered both predictors in one model to predict sacrifice appraisals. Indeed, need satisfaction from the partner in the wake of the move promoted greater PPR (see above), which in turn promoted more positive sacrifice appraisals ($b = .20$, $SE = .07$, 95% CI = [.07, .34], $t(228) = 3.01$, $p = .003$; indirect effect: $b = .10$; 95% CI = [.03, .17]). Thus, after a life-changing relocation sacrifice, PPR—and its implications for sacrifice appraisals—originated to some extent from how helpful the partner was perceived in satisfying one’s fundamental psychological needs for autonomy, competence, and relatedness in the wake of the move.

Figure 5

The indirect effect of need satisfaction from the partner on sacrifice appraisals mediated by greater perceived partner responsiveness in Study 4



Note. All reported values are unstandardized estimates (*b* values), with their standard errors reported between parentheses. Between brackets are the values for the total effect of need satisfaction from partner on sacrifice appraisals.

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

Auxiliary analyses.

Directionality of mediation processes. In this study, we could not control for earlier levels of the mediators to support the a-paths (i.e., PPR predicting closeness or negative affect) in the indirect effect of PPR on sacrifice appraisals. However, in support of the direction of the b-paths (i.e., closeness or negative affect predicting sacrifice appraisals), the original model with closeness as the mediator is stronger than the reversed model in which we reversed the positions of the mediator and outcome, although the reversed model also showed a significant—but smaller—indirect effect (% mediation original = 56.25%, indirect effect = .17, CI = [.06, .30]; % mediation reversed = 6.17%, indirect effect = .05, CI = [.02, .10]). Moreover, the original model with negative affect as the mediator is stronger than the reversed model, although the reversed model showed a significant—but smaller—indirect effect (% mediation original = 59.38%, indirect effect = .18, CI = [.09, .29]; % mediation reversed = 10.13%, indirect effect = -.09, CI = [-.14, -.04]).

Additionally, the original mediation model for the indirect effect of need satisfaction from partner on sacrifice appraisals, mediated by PPR, was stronger than the reversed mediation model, although the reversed model also showed a significant—but somewhat smaller—indirect effect (% mediation original = 34.48%, indirect effect = .10, CI = [.03, .17]; % mediation reversed = 10.42%, indirect effect = .06, CI = [.02, .10]). Thus, in addition to our results from Study 1, showing that greater PPR *causes* more positive sacrifice appraisals, these findings highlight the possibility that more positive sacrifice appraisals may also shape perceptions of partner responsiveness. See *Supplemental Online Materials* for further details.

Other relationship dynamics. Attachment anxiety and avoidance, commitment, and trust were assessed concurrently with other measures in this study. Attachment anxiety ($b = -.28$, $SE = .06$, 95% CI = [-.40, -.17], $t(228) = -4.88$, $p < .001$), avoidance ($b = -.35$, $SE = .07$, 95% CI = [-.49, -.22], $t(228) = -5.34$, $p < .001$), commitment ($b = .21$, $SE = .08$, 95% CI = [.05, .37], $t(228) = 2.55$, $p = .011$), and trust ($b = .27$, $SE = .06$, 95% CI = [.16, .39], $t(228) = 4.70$, $p < .001$) all predicted sacrifice appraisals. However, PPR uniquely predicted sacrifice appraisals when controlling for attachment anxiety ($p = .001$), avoidance ($p = .006$), commitment ($p < .001$), or trust ($p = .002$).

Discussion

The present study—for the first time—showed that when having moved for a partner's career, greater perceived help of the partner in satisfying fundamental psychological needs (i.e., autonomy, competence, relatedness) in the wake of the move may lay an important foundation for how responsive the partner is generally perceived to be. In turn, and in line with findings from Studies 1-3 of sacrifices ranging from daily to more substantial ones, perceiving the partner as highly responsive helped people to appraise even a large relocation sacrifice in a more positive light. That is, greater PPR predicted appraising the relocation for the partner as less of a sacrifice, more beneficial to the self, more beneficial to the

relationship, and participants felt more satisfied and experienced less regret after having made this sacrifice. Furthermore, replicating findings of Studies 2b and 3, greater PPR was associated with feeling closer to the partner and feeling less negative affect toward them, which in turn helped lighten the load of the large sacrifice that participants had made.

Intriguingly, PPR and need satisfaction from the partner did not predict one of the facets of sacrifice appraisals, perceived costs of the sacrifice, which is in contrast to Studies 1-3 and all other sacrifice appraisals in the present study. In hindsight, the operationalization of sacrifice costs in the present study may to some extent have been interpreted as the *financial costs* of the move. Indeed, sacrifice costs were positively correlated with how far participants had moved ($r = .18, p = .023$). Thus, it is possible that this variable reflects the more objective costs associated with moving rather than a psychological appraisal that is malleable and could be (re)appraised in response to the partner's responsiveness. Conservatively, we kept the sacrifice costs item in our overall assessment of sacrifice appraisals because theoretically it could still contribute some meaningful variance and because it did not detract from the reliability of the overall sacrifice appraisals assessment. Importantly, findings are similar with or without this item in the overall sacrifice appraisals assessment.

General Discussion

Making sacrifices to resolve conflicts between partners' goals, needs, and preferences—ranging from relatively mundane daily sacrifices to life-changing ones—is a common and inevitable reality in romantic relationships (Righetti & Impett, 2017). How relational sacrifices impact the sacrificer and the relationship critically depends on how sacrifices are experienced, or appraised (Righetti et al., 2020a; Ruppel & Curran, 2012; Stanley et al., 2006; Visserman et al., 2021; Whitton et al., 2007). In the present work we proposed a key role of perceiving one's romantic partner as responsive—feeling that they care, understand, and value one's core self (e.g., Reis & Gable, 2015)—in positively shaping

sacrifice appraisals. Results from four studies demonstrated that greater PPR when making or anticipating a sacrifice fosters more positive sacrifice appraisals, such as perceiving the act as less costly (except for Study 4) and less of a sacrifice, experiencing less regret, feeling more satisfied with sacrificing, and perceiving greater benefits for the relationship and the self.

In particular, Study 1—a preregistered experiment—provided support for a causal effect of PPR, with an identical sacrifice scenario being rated *more positively* when PPR was manipulated to be high, and *more negatively* when manipulated to be low, as compared to a control condition. Study 2a, conducted in a controlled lab-environment, demonstrated positive *reappraisal* of sacrifice costs as a result of a highly responsive climate when discussing a potential sacrifice, indicated by in-the-moment experiences of PPR and overall PPR right after the sacrifice conversation. Study 2b, a daily experience sampling study in couples' natural environment, showed that sacrifices were appraised as less costly on days when the partner was perceived as particularly responsive. Study 3, with couples' in-lab discussions of a change that one partner desired from the other, supported the downstream consequences of PPR for inspiring actual sacrifice behavior two weeks later. Last, Study 4, in which we surveyed individuals who had recently moved for their partner's career, replicated the benefits of PPR in fostering more positive appraisals of a large, life-changing sacrifice. This study also provided first support for PPR being rooted in the partner's help with satisfying fundamental psychological needs (i.e., autonomy, competence, relatedness), at a time when these basic needs may be challenging to satisfy (Brown, 2008; Deci & Ryan, 2000; Horne et al., 2021).

Additionally, Studies 2b, 3, and 4 consistently showed that more positive sacrifice appraisals were achieved by PPR predicting greater closeness and less negative feelings toward the partner, thereby lifting the weight of a sacrifice. Thus, perceiving a partner as highly responsive when sacrificing helps people to draw closer to the partner—likely seeing one's own and one's partner's interests more intrinsically interwoven in the collective of their

relationship (Agnew et al., 1998; Aron et al., 2004; Maisel et al., 2008)—and lifting the veil of negative feelings and concerns such as exploitation or resentment that typically arise when giving up one's own self-interest for the partner (Righetti et al., 2020b).

Implications and Considerations

Is the role of perceived partner responsiveness unique? PPR is central to relationship functioning (e.g., Reis & Gable, 2015) and relates to various relational dynamics. For example, PPR can be shaped by individuals' attachment orientation toward their partner (Segal & Fraley, 2016), and can promote trust and commitment to the relationship (Joel et al., 2020; Reis, 2013; Segal & Fraley, 2016) and some forms of perspective taking (open-mindedness; Itzchakov & Reis, 2021). However, given the specific qualities that define PPR (i.e., perceiving a partner to understand and validate one's needs and interests, and their willingness to attend to these needs), this perception may be especially relevant when sacrificing. In particular, PPR may help to alleviate concerns around exploitation and self-protection and may facilitate a greater focus on potential benefits for the relationship and for oneself. Indeed, additional analyses in Studies 2a, 2b, 3, and 4 showed that PPR uniquely predicts sacrifice appraisals, above and beyond these other relational dynamics (i.e., attachment, trust, commitment, and perspective taking).

The challenge of being responsive. The present findings stress the need for people to be responsive when their partner sacrifices for them, but it may not always be easy to be responsive at these times. Both partners typically feel stressed when couples encounter conflicts of interests (Righetti et al., 2016), which can detract from partners' responsiveness to each other's needs (Peters et al., 2018). Indeed, people tend to see their partner as less responsive when conflicts of interests occur (Vowels & Carnelley, 2021). Moreover, recipients of sacrifice tend to feel grateful, but at the same time also feel burdened with guilt and indebtedness (Righetti et al., 2020b). Such negative and ambivalent feelings may prevent

them from expressing their positive reactions such as appreciation, and may detract from a focus on what the sacrificer needs. Thus, when people sacrifice, their partner may be challenged in demonstrating responsiveness, while their responsiveness may be especially needed to positively transform these situations and instigate an upward cycle of positive relationship interactions (Wieselquist et al., 1999). Indeed, as findings from Study 3 suggest, people may be more likely to accommodate a partner's wishes over time the more they perceive responsiveness from them when appraising this sacrifice. Demonstrating such dedication to the relationship and the partner's welfare may, in turn, motivate the receiving partner to similarly attend to the relationship and the other's welfare in the future.

Perceiving responsiveness. While increasing partners' responsiveness may seem a desirable avenue for interventions to improve people's experiences of relational sacrifices, people may not perceive their partner's responsiveness in an objective manner (e.g., Fletcher, 2015; see also our findings from Studies 2a and 3). Interpretations of a partner's responsiveness may be fueled by other influences such as the perceiver's expectations and own responsiveness that are projected onto the partner and shape how responsive they are perceived to be (e.g., Debrot et al., 2012; Lemay et al., 2007). Ultimately, *perceptions* of partner responsiveness may be particularly impactful as they most closely reflect how responsive people *feel* that their partner behaves toward them (Reis & Gable, 2015).

What is perceived as responsive? Perceiving a partner as responsive means that they are perceived to understand, validate, and care in a way that matches one's needs (Reis & Gable, 2015; Maisel et al., 2008). Thus, PPR should depend on the specific needs of the individual, which may vary across contexts and individuals. Our work in the context of a relocation sacrifice, when fundamental psychological needs for autonomy, competence, and relatedness are likely unfulfilled (Deci & Ryan, 2000), identified partners' attunement to satisfying these needs as one way in which partners were perceived to be responsive.

Importantly, such needs may also vary across individuals, which may have implications for the way that partner responsiveness can be optimally enacted. For example, avoidantly attached individuals may feel particularly challenged or threatened in their autonomy—likely especially so when making larger sacrifices—and perhaps benefit most from their partner being responsive by giving them more space (Maisel et al., 2008) or being responsive in less visible ways (Girme et al., 2019). At the same time, avoidantly attached individuals have been found to especially benefit from partner’s signs of appreciation (Murphy et al., 2021; Park et al., 2019), so expressing understanding, care, and validation may be best paired with invisible ways of supporting or intervening, thereby leaving the sacrificer’s autonomy intact (e.g., instead of organizing a meet up with other people after relocating, the partner could place a flyer of a social event on the kitchen table).

Other individuals may need more care and assurance from a partner when making or anticipating a sacrifice, such as individuals who are anxiously attached, or those with low self-esteem, who are already inclined to underestimate their partner’s responsiveness (Murray et al., 2002; Righetti & Visserman, 2017; Segal & Fraley, 2016) and may experience sacrifices in more detrimental ways (Righetti & Visserman, 2017; Ruppel & Curran, 2012). For example, in order to feel better about their relationships, anxiously attached individuals more strongly depend on signals of the partner’s understanding, care, and validation (Raposo & Muise, 2021), and after sacrificing, may be in particular need of seeing their partner’s willingness to sacrifice in return (Murphy et al., 2021). Thus, these individuals may need stronger demonstrations of the partner’s responsiveness in order to actually see their responsiveness and consequently appraise their sacrifices in more benevolent ways.

Protecting personal needs and interests. As a word of caution, by (re)appraising the costs and benefits of one’s relational sacrifices—and being more likely to sacrifice—people may risk undermining what they give up and neglect their personal goals and needs. Our

findings show that a partner's demonstration of responsiveness serves as a condition for appraising sacrifices more positively, which was most clearly illustrated in Study 1's experiment where a sacrifice for an *unresponsive* partner was appraised more *negatively* than in a neutral condition. Thus, people seem to gauge whether sacrificing may be beneficial depending on their partner's sensitive attunement to their needs and interests. However, sacrificing for a partner per definition comes at a personal cost. When people consider making a sacrifice—and appraise the costs of doing so—they might benefit from taking a broader perspective on how well their own needs are also fulfilled (Kumashiro et al., 2008; Visserman et al., 2017), rather than merely relying on a partner's demonstration of responsiveness. In the same vein, experiencing and expressing negative feelings toward a partner may at times be adaptive as these feelings may orient the partner toward changing an undesirable situation (Overall et al., 2009). Similarly, reducing closeness and adopting a self-protective focus may at times be adaptive when people need to prioritize their own needs (Murray et al., 2006).

Furthermore, since perceptions of partner responsiveness may not be fully grounded in reality, the true validity of these perceptions may only manifest later on. If a partner indeed behaves responsively—and sustains this behavior over time—it is possible that their responsiveness may mitigate some of the detrimental effects of sacrificing. Partners could demonstrate responsiveness in practical ways that help people to satisfy their goals in the long run (Righetti & Finkenauer, 2011) and thereby may help people to balance personal and relational concerns (Kumashiro et al., 2008). Moreover, partners' responsiveness sets the stage for an open and exploratory mindset (Fredrickson, 2004; Itzchakov & Reis, 2021), which may help people to see—and actually reap—potential benefits even in (initially) harmful situations such as when they sacrifice their own self-interest. For example, when approaching a sacrifice with an open mind, rather than sacrificing reluctantly, people might actually start to like some of the partner's preferred activities, or perhaps even discover a

more fulfilling career after relocating for a partner's job. However, such benefits may not be achieved when sacrificing disproportionately detracts from one's own goals and needs.

Strengths, Limitations, and Future Directions

The present multi-method set of studies had several methodological strengths, such as experimentally manipulating conditions of partner responsiveness (Study 1), having partners converse in a controlled lab setting (Studies 2a and 3) with a video-mediated recall task to gauge in-the-moment perceptions of responsiveness (Study 2a), tracking couples in their daily lives (Studies 2b and 3), and surveying participants' experiences shortly after a major life transition when they had moved for their partner's career (Study 4). In doing so, we were able to capture—and generalize across—a wide variety of sacrifices and at different stages of execution. We investigated participants' anticipation of a daily sacrifice in a hypothetical scenario (Study 1) and when couples discussed a potentially larger sacrifice (e.g., related to the couples' next holiday destination, or one partner's desire for the other to change aspects about themselves or their behavior) (Studies 2a and 3). We also captured participants' experiences after making relatively minor but frequent sacrifices (Study 2b), and after a life-changing sacrifice that required uprooting their lives (Study 4).

The present findings also generalized across the various Western cultures of the countries predominantly involved in our studies (i.e., UK, USA, The Netherlands, Canada). However, future research could focus on cultural differences in how relationships are valued and regulated, such as the experiences of those living in more collectivist cultures (e.g., China), and how these translate into experiences and appraisals of sacrificing one's own self-interest for the relationship. Some initial work in this regard suggests that anticipating a sacrifice may feel more rewarding for participants in China as compared to those in the USA (Zhu et al., 2020). This difference may be explained by stronger collectivistic values driving a greater expectation to attend to others' needs and a greater motivation to maintain social

harmony by resolving conflicts of interests. Relatedly, individuals may differ in adopting a *communal* orientation, in which they are motivated to attend to their partner's needs and sacrifice for them, versus an *exchange* orientation, in which they expect benefits to be exchanged in a tit-for-tat fashion (Clark & Mills, 2012), and these mindsets may also fluctuate over time. Observing a partner's responsiveness may instill a communal orientation, rather than an exchange orientation that is typically elicited when making a sacrifice—at least in Western cultures (Righetti et al., 2020b).

Future work could also make further strides in supporting the causal role of PPR in shaping sacrifice appraisals. While our experimental paradigm supported a causal effect on how a sacrifice was appraised, our studies examining the roles of closeness and negative affect toward the partner as mediators of this effect were correlational in nature. Some past research has demonstrated a causal effect of PPR on increasing closeness and better regulating negative affect (e.g., Ruan et al., 2020). Similarly, the present findings (Studies 2b and 3) supported the idea that PPR increases closeness and lowers negative affect toward the partner. However, support for closeness and negative affect causing sacrifice appraisals is limited. The present findings (Studies 2b, 3, and 4) suggest that our proposed directions from these mediators to appraisals are stronger and more robust than the reverse directions (i.e., appraisals predicting closeness or negative affect), but it is likely that more positive sacrifice appraisals may also promote individuals' felt closeness and affect toward the partner (Visserman et al., 2021). In order to establish a causal link from closeness and negative affect to sacrifice appraisals, future research should temporally separate these variables and ideally assess sacrifice appraisals after an experimental manipulation of closeness or negative affect. Furthermore, in addition to the present studies tracking couples' sacrifices in their daily lives, future work could track couples' experiences over time as they navigate a very substantial sacrifice, for example by following couples throughout a relocation sacrifice.

It is also noteworthy that our assessments of PPR varied across studies, with results corroborating across assessments that directly tapped into each of the three core components of PPR (understanding, care, validation) and assessments that focused more heavily on global perceived partner support. To increase standardization and unity in studying PPR, Crasta and colleagues (2021) recently validated a 16-item “Perceived Responsiveness and Insensitivity” scale assessing all three components of PPR, while also explicitly assessing a lack of responsiveness, or sensitivity, from the partner. Our findings from Study 1, demonstrating the benefits of high responsiveness and the particularly harmful effects of low responsiveness, suggest that such distinction between responsiveness and unresponsiveness, or insensitivity, may be particularly helpful for research on partner responsiveness to move forward.

Conclusion

Sacrificing one’s own needs and interests to resolve a conflict of interests with a romantic partner, such as giving up one’s preferred movie or moving countries to support the partner’s career, is an intrinsic part of coordinating couples’ lives together, but can be burdensome. The present work advances our understanding of how interpersonal factors can shape people’s experience of sacrifice, identifying a key role of perceived partner responsiveness—and its origins in satisfying fundamental psychological needs—in lightening the load of sacrifice and promoting sacrifice behavior. The partner’s sensitivity to one’s needs and interests—understanding, validating and caring for them—helps sacrificers to feel more closely connected to the partner and resolve negative feelings such as resentment that typically arise when people forgo their own self-interest to benefit the partner and the relationship. The present insights may inspire avenues for future research and interventions directed at improving couples’ navigation of conflicts of interests, their experience of sacrifice, and ultimately, the well-being of individuals and relationships.

References

- Agnew, C. R., Van Lange, P. A. M., Rusbult, C. E., & Langston, C. A. (1998). Cognitive interdependence: Commitment and the mental representation of close relationships. *Journal of Personality and Social Psychology, 74*(4), 939–954. doi: 10.1037/0022-3514.74.4.939
- Algoe, S. B., Gable, S. L., & Maisel, N. C. (2010). It's the little things: Everyday gratitude as a booster shot for romantic relationships. *Personal relationships, 17*, 217-233. doi: 10.1111/j.1475-6811.2010.01273.x
- Algoe, S. B., Haidt, J., & Gable, S. L. (2008). Beyond reciprocity: Gratitude and relationships in everyday life. *Emotion, 8*(3), 425–429. doi: 10.1037/1528-3542.8.3.425
- Anderzén, I., & Arnetz, B. B. (1999). Psychophysiological reactions to international adjustment. *Psychotherapy and Psychosomatics, 68*, 67-75. doi: 10.1159/000012315
- Aron, A. P., Mashek, D. J., & Aron, E. N. (2004). Closeness as including the other in the self. In D. J. Mashek & A. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 27– 41). Mahwah, NJ: Erlbaum.
- Balzarini, R. N., Muise, A., Zoppolat, G., Di Bartolomeo, A., Rodrigues, D. L., Alonso-Ferres, M., ... & Slatcher, R. B. (2020, May 16). Love in the time of COVID: perceived partner responsiveness buffers people from lower relationship quality associated with COVID-related stressors. Psyarxiv. doi: 10.31234/osf.io/e3fh4
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*(1), 579–616. doi: 10.1146/annurev.psych.54.101601.145030
- Brookfield Global Relocation Services (2016). *Global Mobility Trends Survey*. Retrieved from <http://globalmobilitytrends.bgrs.com>.
- Brown, R. (2008). Dominant stressors on expatriate couples during international assignments.

International Journal of Human Resource Management, 19, 1018-1034. doi:

10.1080/09585190802051303

Canadian Employee Relocation Council (2018). *CERC facts*. Retrieved from:

<https://www.cerc.ca/page/AboutUs>

Caprariello, P. A., & Reis, H. T. (2011). Perceived partner responsiveness minimizes defensive reactions to failure. *Social Psychological and Personality Science*, 2, 365-372. doi: 10.1177/1948550610391914

Carswell, K. L., Muise, A., Harasymchuk, C., Horne, R. M., Visserman, M. L., & Impett, E. A. (2021). Growing desire or growing apart? Consequences of personal self-expansion for romantic passion. *Journal of Personality and Social Psychology*, 121(2), 354–377. doi: 10.1037/pspi0000357

Clark, M. S., & Mills, J. R. (2012). A theory of communal (and exchange) relationships. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 232–250). Sage Publications Ltd. doi: 10.4135/9781446249222.n38

Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology*, 78, 1053–1073. doi: 10.1037/0022-3514.78.6.1053

Columbus, S., Molho, C., Righetti, F., & Balliet, D. (2021). Interdependence and cooperation in daily life. *Journal of Personality and Social Psychology*, 120(3), 626-650. doi: 10.1037/pspi0000253

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*. Advance online publication. doi: 10.1037/pas0000986

- Day, L. C., & Impett, E. A. (2018). Giving when it costs: How interdependent self-construal shapes willingness to sacrifice and satisfaction with sacrifice in romantic relationships. *Journal of Social and Personal Relationships, 35*, 722-742. doi: 10.1177/0265407517694965
- Debrot, A., Cook, W. L., Perrez, M., & Horn, A. B. (2012). Deeds matter: Daily enacted responsiveness and intimacy in couples' daily lives. *Journal of Family Psychology, 26*, 617-627. doi: 10.1037/a0028666
- Debrot, A., Schoebi, D., Perrez, M., & Horn, A. B. (2013). Touch as an interpersonal emotion regulation process in couples' daily lives: The mediating role of psychological intimacy. *Personality and Social Psychology Bulletin, 39*, 1373-1385. doi: 10.1177/0146167213497592
- Debrot, A., Schoebi, D., Perrez, M., & Horn, A. B. (2014). Stroking your beloved one's white bear: Responsive touch by the romantic partner buffers the negative effect of thought suppression on daily mood. *Journal of Social and Clinical Psychology, 33*, 75-97. doi: 10.1521/jscp.2014.33.1.75
- Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268. doi: 10.1207/S15327965PLI1104_01
- Denny, B. T., & Ochsner, K. N. (2014). Behavioral effects of longitudinal training in cognitive reappraisal. *Emotion, 14*, 425-433. doi: 10.1037/a0035276
- Diener, E., & Seligman, M. E. (2002). Very happy people. *Psychological science, 13*(1), 81-84. doi: 10.1111/1467-9280.00415
- Donato, S., Parise, M., Iafrate, R., Bertoni, A., Finkenauer, C., & Bodenmann, G. (2015). Dyadic coping responses and partners' perceptions for couple satisfaction: An actor-

- partner interdependence analysis. *Journal of Social and Personal Relationships*, 32, 580–600. doi: 10.1177/0265407514541071
- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods*, 12(2), 121–138. doi: 10.1037/1082-989X.12.2.121
- Farrell, A. K., Simpson, J. A., Overall, N. C., & Shallcross, S. L. (2016). Buffering the responses of avoidantly attached romantic partners in strain test situations. *Journal of Family Psychology*, 30, 580-591. doi: 10.1037/fam0000186
- 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. doi: 10.1177/0956797618785899
- Feeney, B. C. (2004). A secure base: Responsive support of goal strivings and exploration in adult intimate relationships. *Journal of Personality and Social Psychology*, 87, 631–648. doi: 10.1037/0022-3514.87.5.631
- Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review*, 19, 113-147. doi: 10.1177/1088868314544222
- Finkenauer, C., & Righetti, F. (2011). Understanding in close relationships: An interpersonal approach. *European Review of Social Psychology*, 22, 316-363. doi: 10.1080/10463283.2011.633384
- Fletcher, G. J., & Simpson, J. A. (2000). Ideal standards in close relationships: Their structure and functions. *Current Directions in Psychological Science*, 9, 102-105. doi: 10.1111/1467-8721.00070

- Fletcher, G. J. O. (2015). Accuracy and bias of judgments in romantic relationships. *Current Directions in Psychological Science, 24*, 292–297. doi: 10.1177/0963721415571664
- Fletcher, G. J. O., Simpson, J. A., & Thomas, G. (2000). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality and Social Psychology Bulletin, 26*, 340–354. doi: 10.1177/0146167200265007
- Fredrickson, B. L. (2004). The broaden–and–build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences, 359*(1449), 1367–1377. doi: 10.1098/rstb.2004.1512
- Fritz, H. L., Nagurney, A. J., & Helgeson, V. S. (2003). Social interactions and cardiovascular reactivity during problem disclosure among friends. *Personality and Social Psychology Bulletin, 29*, 713–725. doi:10.1177/0146167203251520
- Girme, Y. U., Overall, N. C., & Hammond, M. D. (2019). Facilitating autonomy in interdependent relationships: Invisible support facilitates highly avoidant individuals' autonomy. *Journal of Family Psychology, 33*, 154–165. doi: 10.1037/fam0000488
- Gordon, C. L., Arnette, R. A. M., & Smith, R. E. (2011). Have you thanked your spouse today? Felt and expressed gratitude among married couples. *Personality and Individual Differences, 50*, 339–343. doi: 10.1016/j.paid.2010.10.012
- Gordon, A. M., & Chen, S. (2016). Do you get where I'm coming from? Perceived understanding buffers against the negative impact of conflict on relationship satisfaction. *Journal of Personality and Social Psychology, 110*, 239–260. doi: 10.1037/pspi0000039
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39*, 281–291. doi: 10.1017/S0048577201393198
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes:

- Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85, 348–362. doi: 10.1037/0022-3514.85.2.348
- Hofmann, W., & Patel, P. V. (2015). SurveySignal: A convenient solution for experience sampling research using participants' own smartphones. *Social Science Computer Review*, 33(2), 235-253. doi: 10.1177/0894439314525117
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: a meta-analytic review. *PLoS medicine*, 7(7), e1000316.
doi: 10.1371/journal.pmed.1000316
- Horne, R. M., Righetti, F., Park, Y., Harasymchuk, C., & Impett, E. A. (2021). *Better to give or to receive? Sacrifice predicts lower psychological need satisfaction in romantic relationships*. Manuscript in preparation.
- Impett, E. A., Gable, S. L., & Peplau, L. A. (2005). Giving up and giving in: The costs and benefits of daily sacrifice in intimate relationships. *Journal of Personality and Social Psychology*, 89, 327–344. doi: 10.1037/0022-3514.89.3.327
- Itzhakov, G., & Reis, H. T. (2021). Perceived responsiveness increases tolerance of attitude ambivalence and enhances intentions to behave in an open-minded manner. *Personality and Social Psychology Bulletin*, 47, 468-485. doi: 0146167220929218.
- Joel, S., Eastwick, P. W., Allison, C. J., Arriaga, X. B., Baker, Z. G., Bar-Kalifa, E., ... Wolf, S. (2020). Machine learning uncovers the most robust self-report predictors of relationship quality across 43 longitudinal couples studies. *Proceedings of the National Academy of Sciences*, 117, 19061–19071. doi: 10.1073/pnas.1917036117
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York, NY: Guilford Press.
- Kubacka, K. E., Finkenauer, C., Rusbult, C. E., & Keijsers, L. (2011). Maintaining close

- relationships: Gratitude as a motivator and a detector of maintenance behavior. *Personality and Social Psychology Bulletin*, 37(10), 1362-1375.
<https://doi.org/10.1177/0146167211412196>
- Kumashiro, M., Rusbult, C. E., & Finkel, E. J. (2008). Navigating personal and relational concerns: The quest for equilibrium. *Journal of Personality and Social Psychology*, 95, 94–110. doi:10.1037/0022-3514.95.1.94
- La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology*, 79, 367–384. doi: 10.1037/0022-3514.79.3.367
- 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, 1238–1251. doi: 10.1037/0022-3514.74.5.1238
- Le, B. M., Côté, S., Stellar, J., & Impett, E. A. (2020). The distinct effects of empathic accuracy for a romantic partner's appeasement and dominance emotions. *Psychological Science*, 31(6), 607-622. doi: 10.1177/0956797620904975
- Lemay, E. P., Jr., 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, 834–853. doi: 10.1037/0022-3514.92.5.834
- Maisel, N. C., Gable, S. L., & Strachman, A. (2008). Responsive behaviors in good times and in bad. *Personal Relationships*, 15, 317–338. doi: 10.1111/j.1475-6811.2008.00201.x
- Mandal, E. (2020). Sacrifices of women and men in close relationships: the types and

- structure of sacrifices. The approach and avoidance motives for making sacrifices. *Current Issues in Personality Psychology*, 8, 317-328. doi:10.5114/cipp.2020.101952.
- McNulty, Y. (2015). Till stress do us part: The causes and consequences of expatriate divorce. *Journal of Global Mobility*, 3, 106-136. doi: 10.1108/JGM-06-2014-0023
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology*, Vol. 35 (p. 53–152). Elsevier Academic Press. doi: 10.1016/S0065-2601(03)01002-5
- Murphy, G., Horne, R. M., Visserman, M. L., & Impett, E. A. (2021). *Effects of attachment insecurity on trailing partners' well-being following relocation: The buffering role of perceived partner gratitude and sacrifice*. Manuscript in preparation.
- Murray, S. L., Bellavia, G. M., Rose, P., & Griffin, D. W. (2003). Once hurt, twice hurtful: How perceived regard regulates daily marital interactions. *Journal of Personality and Social Psychology*, 84, 126–147. doi: 10.1037/0022-3514.84.1.126
- Murray, S. L., Holmes, J. G., & Collins, N. L. (2006). Optimizing assurance: The risk regulation system in relationships. *Psychological Bulletin*, 132(5), 641–666. doi: 10.1037/0033-2909.132.5.641
- 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 & Social Psychology*, 83, 556– 573. doi: 10.1037/0022-3514.83.3.556
- Nater, C., & Zell, E. (2015). Accuracy of social perception: An integration and review of meta-analyses. *Social and Personality Psychology Compass*, 9(9), 481-494. <https://doi.org/10.1111/spc3.12194>

- Overall, N. C., Fletcher, G. J. O., & Simpson, J. A. (2006). Regulation processes in intimate relationships: The role of ideal standards. *Journal of Personality and Social Psychology, 91*, 662–685. doi: 10.1037/0022-3514.91.4.662
- Overall, N. C., Fletcher, G. J., Simpson, J. A., & Sibley, C. G. (2009). Regulating partners in intimate relationships: The costs and benefits of different communication strategies. *Journal of Personality and Social Psychology, 96*, 620-639. doi: 10.1037/a0012961
- Palan, S., & Schitter, C. (2018). Prolific.ac—A subject pool for online experiments. *Journal of Behavioral and Experimental Finance, 17*, 22-27. doi: 10.1016/j.jbef.2017.12.004
- Park, Y., Impett, E. A., MacDonald, G., & Lemay Jr, E. P. (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. doi: 10.1037/pspi0000178.
- Park, Y., Visserman, M. L., Sisson, N., Le, B. M., Stellar, J., & Impett, E. A. (2020). How can I thank you? Highlighting the benefits or costs when expressing gratitude. *Journal of Social and Personal Relationships*. Advanced online publication. doi: 10.1177/0265407520966049
- Patrick, H., Knee, C. R., Canevello, A., & Lonsbary, C. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal of Personality and Social Psychology, 92*, 434-457. doi: 10.1037//0022-3514.92.3.434
- Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology, 70*, 153- 163. <https://doi.org/10.1016/j.jesp.2017.01.006>
- Peters, B. J., Reis, H. T., & Jamieson, J. P. (2018). Cardiovascular indexes of threat impair responsiveness in situations of conflicting interests. *International Journal of*

Psychophysiology, 123, 1-7. doi: 10.1016/j.ijpsycho.2017.12.005

- Pew Research Center (2020). *About a fifth of U.S. adults moved due to COVID-19 or know someone who did*. Retrieved on December 30, 2020 from:
<https://www.pewresearch.org/fact-tank/2020/07/06/about-a-fifth-of-u-s-adults-moved-due-to-covid-19-or-know-someone-who-did/>
- Powell, C., & Van Vugt, M. (2003). Genuine giving or selfish sacrifice? The role of commitment and cost level upon willingness to sacrifice. *European Journal of Social Psychology*, 33, 403–412. doi:10.1002/ejsp.154
- Raposo, S., & Muise, A. (2021). Perceived partner sexual responsiveness buffers anxiously attached individuals' relationship and sexual quality in daily life. *Journal of Family Psychology*, 35, 500-509. doi: 10.1037/fam0000823
- Reis, H. T. (2013). Relationship well-being: The central role of perceived partner responsiveness. In C. Hazan & M. I. Campa (Eds.), *Human bonding: The science of affectional ties* (pp. 283- 307). New York, NY: Guilford Press.
- Reis, H. T., & Clark, M. S. (2013). *Responsiveness*. In J. A. Simpson & L. Campbell (Eds.), *The Oxford handbook of close relationships* (p. 400–423). 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. Mashek & A. Aron (Eds.), *The handbook of closeness and intimacy* (pp. 201-225). Mahwah, NJ: Lawrence Erlbaum Associates.
- Reis, H. T., Crasta, D., Rogge, R. D., Maniaci, M. R., & Carmichael, C. L. (2017a). Perceived partner responsiveness scale. In D. L. Worthington & G. D. Bodie (Eds.), *The sourcebook of listening research: Methodology and measures* (pp. 516 –521). Hoboken, NJ: Wiley. doi: 10 .1002/9781119102991.ch57

- Reis, H. T., & Gable, S. L. (2015). Responsiveness. *Current Opinion in Psychology, 1*, 67–71. doi: 10.1016/j.copsyc.2015.01.001
- Reis, H. T., Lee, K. Y., O'Keefe, S. D., & Clark, M. S. (2018). Perceived partner responsiveness promotes intellectual humility. *Journal of Experimental Social Psychology, 79*, 21-33. doi: 10.1016/j.jesp.2018.05.006
- Reis, H. T., Lemay, E. P., & Finkenauer, C. (2017b). Toward understanding understanding: The importance of feeling understood in relationships. *Social and Personality Psychology Compass, 11*, e12308. doi: 10.1111/spc3.12308
- Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. Duck (Ed.). *Handbook of Personal Relationships* (Vol. 24, pp. 367–389). John Wiley & Sons Ltd.
- Reis, H. T., Smith, S. M., Carmichael, C. L., Caprariello, P. A., Tsai, F.-F., Rodrigues, A., & Maniaci, M. R. (2010). Are you happy for me? How sharing positive events with others provides personal and interpersonal benefits. *Journal of Personality and Social Psychology, 99*, 311–329. doi: 10.1037/a0018344
- Riemer, J. W. (2000). Job relocation, sources of stress, and sense of home. *Community, Work & Family, 3*, 205-217. doi: 10.1080/713658901
- Righetti, F., Balliet, D., Visserman, M. L., & Hofmann, W. (2015). Trust and the suppression of emotions during sacrifice in close relationships. *Social Cognition, 33*, 505-519. doi: 10.1521/soco.2015.33.5.505
- Righetti, F., Gere, J., Hofmann, W., Visserman, M. L., & Van Lange, P. A. M. (2016). The burden of empathy: Partners' responses to divergence of interests in daily life. *Emotion, 16*, 684-690. doi: 10.1037/emo0000163
- Righetti, F., & Impett, E. A. (2017). Sacrifice in close relationships: Motives, emotions, and relationship outcomes. *Social and Personality Psychology Compass, 11*, 1-11. doi: 10.1111/spc3.12342

- Righetti, F., Sakaluk, J. K., Faure, R., & Impett, E. A. (2020a). The link between sacrifice and relational and personal well-being: A meta-analysis. *Psychological Bulletin*, *146*, 900–921. doi: 10.1037/bul0000297
- Righetti, F., Schneider, I., Ferrier, D., Spiridonova, T., Xiang, R., & Impett, E. A. (2020b). The bittersweet taste of sacrifice: Consequences for ambivalence and mixed reactions. *Journal of Experimental Psychology: General*, *149*, 1950–1968. doi: 10.1037/xge0000750
- Righetti, F., & Visserman, M. L. (2018). I gave too much: Low self-esteem and the regret of sacrifices. *Social Psychological and Personality Science*, *9*, 453–460. doi: 10.1177/1948550617707019
- Righetti, F., Visserman, M. L., & Impett, E. A. (2022). Sacrifices: Costly prosocial behaviors in romantic relationships. *Current opinion in psychology*, *44*, 74–79. doi: 10.1016/j.copsyc.2021.08.031
- Robles, T. F., Slatcher, R. B., Trombello, J. M., & McGinn, M. M. (2014). Marital quality and health: A meta-analytic review. *Psychological Bulletin*, *140*, 140–187. doi: 10.1037/a0031859
- 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*, 329–342. doi: 10.1037/emo0000650
- Ruppel, E. K., & Curran, M. A. (2012). Relational sacrifices in romantic relationships: Satisfaction and the moderating role of attachment. *Journal of Social and Personal Relationships*, *29*, 508–529. doi: 10.1177/0265407511431190
- Segal, N., & Fraley, R. C. (2016). Broadening the investment model: An intensive longitudinal study on attachment and perceived partner responsiveness in commitment dynamics. *Journal of Social and Personal Relationships*, *33*, 581–599. doi:

10.1177/0265407515584493

- Selig, J. P., & Preacher, K. J. (2008). Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects [Computer software]. Available from <http://www.quantpsy.org/medmc/medmc.htm>
- Sheldon, K. M., Elliot, A. J., Kim, Y., & Kasser, T. (2001). What is satisfying about satisfying events? Testing 10 candidate psychological needs. *Journal of Personality and Social Psychology*, *89*, 325-339. doi: 10.1037/0022-3514.80.2.325
- Sisson, N. M., Park, Y., MacDonald, G., & Impett, E. A. (2019). *Cross-sectional gratitude and motivation study*. Unpublished raw data.
- Slatcher, R. B., & Schoebi, D. (2017). Protective processes underlying the links between marital quality and physical health. *Current Opinion in Psychology*, *13*, 148–152. doi: 10.1177/0963721416667444
- Stanley, S. M., Whitton, S. W., Sadberry, S. L., Clements, M. L., & Markman, H. J. (2006). Sacrifice as a predictor of marital outcomes. *Family Process*, *45*, 289-303.
- Stanton, S. C., Selcuk, E., Farrell, A. K., Slatcher, R. B., & Ong, A. D. (2019). Perceived partner responsiveness, daily negative affect reactivity, and all-cause mortality: A 20-year longitudinal study. *Psychosomatic Medicine*, *81*, 7-15. doi: 10.1097/PSY.0000000000000618
- Sweatman, S. (1999). Marital satisfaction, cross-cultural adjustment stress, and the psychological sequelae, *Journal of Psychology and Theology*, *27*, 154-162. doi: 10.1177/009164719902700208
- Tasfiliz, D., Selcuk, E., Gunaydin, G., Slatcher, R. B., Corriero, E. F., & Ong, A. D. (2018). Patterns of perceived partner responsiveness and well-being in Japan and the United States. *Journal of Family Psychology*, *32*, 355-365. doi: 10.1037/fam0000378
- Taylor, A. B., MacKinnon, D. P., & Tein, J.-Y. (2008). Tests of the three-path mediated effects.

- Organizational Research Methods*, 11(2), 241–269. doi:10.1177/1094428107300344
- Van Lange, P. A., Rusbult, C. E., Drigotas, S. M., Arriaga, X. B., Witcher, B. S., & Cox, C. L. (1997). Willingness to sacrifice in close relationships. *Journal of Personality and Social Psychology*, 72, 1373. doi: 10.1037/0022-3514.72.6.1373
- Visserman, M. L., Impett, E. A., Righetti, F., Muise, A., Keltner, D., & Van Lange, P. A. M. (2019). To “see” is to feel grateful? A quasi-signal detection analysis of romantic partners’ sacrifices. *Social Psychological and Personality Science*, 10, 317-325. doi: 10.1177/1948550618757599
- Visserman, M. L., Righetti, F., Impett, E. A., Keltner, D., & Van Lange, P. A. M. (2018). It's the motive that counts: Perceived sacrifice motives and gratitude in romantic relationships. *Emotion*, 18, 625-637. doi: 10.1037/emo0000344
- Visserman, M. L., Righetti, F., Kumashiro, M., & Van Lange, P. A. M. (2017). Me or Us? Self-control promotes a healthy balance between personal and relationship concerns. *Social Psychological and Personality Science*, 8(1), 55-65. doi: 10.1177/1948550616662121
- Visserman, M. L., Righetti, F., Muise, A., Impett, E. A., Joel, S., & Van Lange, P. A. M. (2021). Taking stock of reality: Biased perceptions of the costs of romantic partners’ sacrifices *Social Psychological and Personality Science*, 12, 54-62. doi: 10.1177/1948550619896671
- Vowels, L. M., & Carnelley, K. (2021). Attachment styles, negotiation of goal conflict, and perceived partner support during COVID-19. *Personality and Individual Differences*, 171, 110505. doi: 10.1016/j.paid.2020.110505
- Whitton, S. W., Stanley, S. M., & Markman, H. J. (2007). If I help my partner, will it hurt me? Perceptions of sacrifice in romantic relationships. *Journal of Social and Clinical Psychology*, 26, 64-91.

- Wieselquist, J., Rusbult, C. E., Foster, C. A., & Agnew, C. R. (1999). Commitment, pro-relationship behavior, and trust in close relationships. *Journal of Personality and Social Psychology*, *77*, 942-966. doi: 10.1037/0022-3514.77.5.942
- Wiley, M., & Wiley, J. F. (2019) GLMMs: Introduction. In: *Advanced R Statistical Programming and Data Models*. Apress, Berkeley, CA. doi: 10.1007/978-1-4842-2872-2_10
- Zhu, W., Wang, C. D., Jin, L., & Lu, T. (2020). Adult attachment, sacrifice, and emotional wellbeing of couples: A cross-cultural comparison between the US and China. *Journal of Social and Personal Relationships*. Advance Online Publication. doi: 10.1177/0265407520963954
- Zoppolat, G., Visserman, M. L., & Righetti, F. (2020). What a nice surprise: Sacrifice expectations and partner appreciation in romantic relationships. *Journal of Social and Personal Relationships*, *37*(2), 450-466. doi: 10.1177/0265407519867145