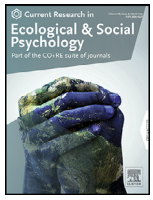
Current Research in Ecological and Social Psychology 3 (2022) 100042

Contents lists available at ScienceDirect

Current Research in Ecological and Social Psychology

journal homepage: www.elsevier.com/locate/cresp



Is my partner committed to me or tempted by others?: Perceptions of the partner's devaluation of alternatives

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ARTICLE INFO

Keywords:
Derogation of alternatives

ABSTRACT

Three experiments evaluated a novel motivated response to alternative threat for committed people, known as perceptions of the partner's devaluation of alternatives (PPD). By being led to perceive lower partner commitment (Study 1a and 1b) or that the partner was favorably evaluating a highly attractive alternative (Study 2), we found a consistent threat effect across the studies with perceivers reporting lower levels of PPD. However, perceivers reporting greater relational trust or greater perceived partner commitment reported greater PPD, with some evidence of buffering (Study 2). These studies provide preliminary insight into how committed people use perceptions of the partner's commitment to navigate situations involving their partners and threatening alternatives, beyond their own commitment and projective effects.

1. Introduction

Imagine a committed couple, Taylor and Avery, who are attending a party together when an attractive man (i.e., an alternative), Chris, arrives. Taylor may feel threatened by Chris and worry about Avery being tempted away from their relationship by Chris. The threat of Chris could lead Taylor to feel insecure about Avery's commitment to him and how attractive Avery finds Chris. Or, Taylor could use his perception of Avery's commitment to resolve any doubts about whether Avery might be swayed by Chris. Taylor might even bolster his confidence in Avery's commitment and perceive Avery to find Chris relatively less attractive. In the current research, we are interested in the process by which romantically involved people gauge their partners' commitment levels to make predictions about how their partners view threatening alternatives[1]. By studying how committed people perceive their partners responding to the threat of attractive alternatives, we may identify one previously unstudied barrier to maintaining relationship stability.

1.1. Perceiving a partner in the presence of alternatives

Research on Rusbult's (1980; 1983) Investment Model has provided empirical support for the specific ways in which romantic partners create and maintain commitment (Baker et al., 2020; Fincham and May, 2017). Throughout the course of a relationship, couples will experience obstacles for sustaining high levels of commitment, one of which is the temptation of attractive alternative partners (Rusbult et al., 1998). When an alternative approaches someone in a committed relationship, the committed person may be conflicted with thoughts of desire for the alternative alongside feelings of connection for the current partner (Johnson and Rusbult, 1989). Highly interdependent couples may persist through these temptations by deploying the motivated maintenance mechanism, derogation of alternatives (Murray and Holmes, 2017; Rusbult and Van Lange, 2003).

Derogation of alternatives helps committed people lessen the threat of attractive alternative partners by perceptually downgrading what makes the alternatives seem tempting (Gagne and Lydon, 2004; McNulty et al., 2018; Miller, 1997; Visserman and Karremans, 2014). Existing derogation research has largely focused on inducing threat through physically attractive alternatives (e.g., Lydon et al., 1999; Maner et al. 2009; Rodrigues et al., 2017). Often, studies have asked participants to report on alternatives' attractiveness (e.g., Simpson et al., 1990) and their interest in the alternatives as potential partners (e.g., Ritter et al., 2010). There is consistent empirical evidence that people in committed relationships rate attractive alternatives as less attractive and appealing than their single counterparts, presumably as a cognitive strategy to maintain their belief in the relative value of the current relationship compared to other possible relationships (Cole et al., 2016; Lydon and Karremans, 2015; Rusbult et al., 2001).

Existing research has studied derogation of alternatives largely from the perspective of *one's own alternatives* and how *the self* can attenuate the threat by derogating an alternative's attractiveness (Brady et al., 2020; Lydon et al., 2008). This literature has primarily assessed how committed people deal with threats to their own commitment. Being part of a committed dyad, however, means that a person's alternatives

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[1] We termed this process, "Perceptions of the Partner's Devaluation" and refer to it as, "PPD" throughout.

https://doi.org/10.1016/j.cresp.2022.100042
Received 21 December 2021; Received in revised form 17 March 2022; Accepted 18 March 2022

are often salient and may also impact their partner (Arriaga, 2013; McNulty, 2016; Park and Park, 2018). Brady and Baker (2021, p. 2) emphasized, "there is a critical need to expand how attractive alternatives are conceptualized and studied," and we suggest that the perspective of the perceiving partner is largely missing from existing research on alternatives. How does the partner (i.e., the perceiver) evaluate these encounters with alternatives?

1.2. An interpersonal account of contending with alternative threat

Perceiving one's partner in the presence of an attractive alternative may evoke questions about whether the alternative is a commitment threat. Interdependent couples may be attuned to such potential threats, but if they respond pro-relationally, such as by interpreting their partner's reaction in a trusting manner, their faith in the relationship can remain stable (Murray et al., 2015). Previous research has established that derogating one's own alternatives is a pro-relationship response (Brady and Baker, 2021; Brady et al., 2020), and we posit that perceiving *the partner* to devalue alternatives may be an additional relationship-promoting response. By deploying such motivated pro-relationship cognitions when alternative threat occurs, highly committed individuals can maintain a sense of confidence and security in their views of the partner and the future of the relationship (Baker et al., 2017). However, if the partner's commitment is perceived as tenuous, the threat of alternatives may be amplified and have downstream consequences for relationship stability (e.g., Le et al., 2010). Capturing how *perceivers* interpret situations involving their partners' devaluation of alternatives offers a novel perspective on how committed people respond to alternative threat.

Simpson et al. (1995) hypothesized that people should be especially motivated to protect their relationship by being empathically *inaccurate* during instances when their *partners* are evaluating threatening alternatives. This hypothesis concurs with the current work, which hypothesizes that perceiving partners to be highly committed may result in the motivated response that the partner is devaluing alternatives. A follow-up study (Simpson et al., 1999) had participants in newly-formed relationships (M_{length}=16.5 months) rate attractive alternatives aloud in the presence of their partners, while being videotaped. Participants then separately watched themselves in the recorded video and reported on any moment in which they had a thought or feeling while their *partners* were rating the alternatives. Independent raters coded the content of participants' emotional recall and found that participants generally seemed threatened by the partner evaluating alternatives. Having to engage with the partner's response to alternatives is a difficult situation for committed people to navigate. Perceiving a *partner's* response to alternatives poses its own challenges and we suggest that it may result in evaluative biases similar to the process of own derogation, but instead regarding the *partner's* attraction to alternatives. Determining how committed people arrive at conclusions about their partner's devaluation[2] of alternatives (i.e., which we propose is through perceptions of the partner's commitment) is important for better understanding of the impact of extradyadic threat on relationships.

Existing literature has already documented how individuals interacting with alternatives combat the threat for themselves, but there is a need to assess how perceivers interpret their partner's responses to alternatives (Lydon, 2010). We propose that in order to determine the level of threat an alternative poses, perceivers must first evaluate the partner's commitment to the relationship. If perceivers believe that their partner's commitment is wavering, the threat posed by the alternative should be amplified because of the potential loss of the relationship (Simpson et al., 1995). Perceiving a partner to be interested in alternatives could result in perceivers worrying about possible infidelity or even dissolution (Brady et al., 2020; Le et al., 2010). If the perceiver trusts that the partner is dedicated to the relationship, however, the perceiver's sense of threat should be attenuated and lead to interpreting the partner as devaluing the alternative (Tan et al., 2020). We refer to this process as *perceptions of the partner's devaluation of alternatives (PPD)*. When people perceive their partners devaluing alternatives, their faith in the stability of the relationship is enhanced. Alternatively, when they perceive their partners responding favorably to the alternative, their confidence in the relationship may be undermined. We posit that this process of evaluating the partner's commitment and how they evaluate alternatives is a key yet largely unstudied step in the process of understanding how committed partners respond to extradyadic threat.

1.3. Perceptions of the partner's commitment predicting PPD

Just as one's own commitment can be a catalyst for one's own derogation of alternatives, we are proposing that perceptions of the partner's commitment is a driving force behind PPD. Conditions of threat make evaluating a partner's commitment level more accessible, possibly due to potential relationship loss (Simpson et al., 1995). Relatedly, PPD is relevant only in the presence of alternative threat: When partners interact with an alternative, thoughts about the partner's commitment should be salient and would therefore influence the perceiver's feelings and beliefs about the relationship. Perceiving a partner as more committed should help perceivers reduce the threat of alternatives, while perceiving a partner's commitment as tenuous should instead amplify the threat. We propose that this process occurs independently from one's own commitment.

Perceived partner commitment has been shown to be a distinct construct from one's own commitment in predicting relationship stability. In Joel et al. (2018) study, participants who perceived their partners as less committed were more likely to terminate their relationships, even when controlling for indicators of the participants' own commitment (i.e., their own alternatives). Similarly, in a sample of newly-formed relationships, perceiving fluctuations in a partners' commitment predicted greater likelihood of breakup, beyond one's own commitment (Arriaga et al., 2006). We therefore hypothesized a positive association between manipulated perceived partner commitment and PPD (H1), independent of one's own commitment level (H2).

1.4. How is the process of perceiving a partner to devalue different from projection?

Projection is a process of motivated social cognition that can help reinforce predictability in romantic partners (Lemay and Clark, 2008). Projection works through the ascription of one's *own* emotions, cognitions, and behaviors onto one's beliefs about the *partner's* emotions, cognitions, and behaviors. Neal and Lemay (2017) assessed perceptions of a partner's attraction to alternatives, focusing on *amplification* of the threat of attractive alternatives. By projecting one's own desire for alternatives onto the partner, participants assumed their partners desired alternatives to the same extent, reporting greater anger and more negative behaviors towards the partner. The present research is instead focused on how perceivers interpret their partners' interaction with the partners' alternatives, independent from the perceiver's own alternatives. Projection in these situations involves the perceiver's own devaluation of or feelings towards *the partner's alternatives* (i.e., not assuming that because one finds an alternative to be attractive, that the partner also feels the same). We theorize that PPD reflects a committed person's perception of the partner's intentions towards alternatives, over and above tendencies towards projection (H3).

[2] Devaluation is a similar process to derogation in the sense that both speak to *downgrading* alternatives, however, we have chosen the term "devaluation" to describe the perceiver's take on the partner with alternatives to differentiate it from the process of one's own derogation.

1.5. A relational moderator of PPD – trust

Relational trust has consistently been shown to be one of the most important ingredients of well-functioning relationships, with greater trust predicting higher relationship satisfaction (e.g., Fitzpatrick and Lafontaine, 2017). More trusting individuals enact behaviors that help maintain relationship stability (Rempel et al., 2001). For example, people higher in trust tend to ignore or discount negative behaviors by their partners and also tend to remember their partner's past negative behavior in a more positive light (Luchies et al., 2013; Murray et al., 2006). More trusting partners are also more accommodating in stressful relationship contexts, in some instances even increasing their own levels of trust in ways that promote, rather than harm, relationships (Shallcross and Simpson, 2012). Instead of perceiving diagnostic situations (i.e., situations that are revealing with regard to relationship stability) as threatening to the relationship, people higher in trust tend to interpret these situations as signaling dependability (Simpson, 2007). Therefore, greater levels of relational trust will be associated with perceiving the partner as devaluing alternatives to a greater extent (H4).

1.6. The current research

In Studies 1a and 1b, we manipulated perceptions of the partner's commitment level to establish a causal pathway to PPD (H1) that is independent from one's own commitment (H2). Study 2 experimentally manipulated alternative threat to capture the process of perceiving a partner's devaluation of alternatives as it unfolds with both partners present. Studies 1a and 2 included measures of the participants' own devaluation of the alternative to control for projection (H3). In Study 2, participants' baseline levels of relational trust (H4) were collected prior to bringing couples into the lab. Our university's Institutional Review Board approved all study protocols.

2. Studies 1a and 1b

Studies 1a and 1b were designed to establish a causal pathway from perceived partner commitment to PPD (H1) that was independent from one's own level of commitment (H2). Partner commitment was manipulated in both studies, but the content of the commitment manipulation differed. Both studies involved a commitment threat, a commitment bolster, and a control condition. The commitment threat conditions were designed to induce uncertainty about the partner's current commitment, whereas the commitment bolster conditions were designed to create greater feelings of partner commitment. Control conditions were included as neutral comparisons that still involved interacting with current partners. Both studies required that participants be in a committed, monogamous relationship. Study 1a used participants from relatively established relationships, because newly-formed relationships may involve less certainty about a partner's commitment and therefore may be more reactive to alternative threat. The specific methods (i.e., the three conditions), hypothesized omnibus condition effect on PPD, and proposed regression analyses were preregistered (https://aspredicted.org/blind.php?x=9m2vs8[3]).

2.1. Method

2.1.1. Participants

Participants in Study 1a and 1b accessed the studies online before providing consent. An *a priori* power analysis (G*Power 3.1; Faul et al., 2007) was conducted for Study 1a with three conditions and determined that to detect an effect size (f)=0.50, with power=.90 and alpha=.05, 86 participants were needed per condition. Study 1a's final sample (86.9% self-identified as Women, 11.8% as Men, 1.3% Non-Binary, Genderqueer, or Gender Non-Conforming; with partners who identified as 83.1% Men, 16.1% Women, 0.8% Non-Binary or Transgender; 80.2% Heterosexual, 10.7% Bisexual or Pansexual, 4.6% Gay or Lesbian; 88.6% White, 3.7% Black, 3.3% Asian; 92.7% non-Hispanic/Latinx; M_{age}=32.68, SD_{age}=8.91) from ResearchMatch was N = 788 (n_{threat}=235; $n_{control}$=305; $n_{bolster}$=248). For Study 1b, participants from ResearchMatch and Prolific (66.5% self-identified as Women; 85.3% Heterosexual, 12.7% Bisexual or Pansexual; 82.7% White, 7.2% Asian, 4.2% Black; 89.8% non-Hispanic/Latinx; M_{age}=27.65, SD_{age}=10.07) were recruited for a total sample of N=573 (n_{threat}=188; $n_{control}$=192; $n_{bolster}$ =193). We sent the surveys to anyone expressing interest, which resulted in the studies being overpowered[4].

Study 1a required relationship duration of at least 2 months (M_{length}=7.06 years, SD_{length}=7.14; 54.4% engaged/married, 45.6% dating; $M_{OwnComm}$=6.38, $SD_{OwnComm}$=0.98). The exclusion criteria in Study 1b specified that participants needed to have established monogamy with their partners within the past year ($M_{monogamy}$=2.12 months, $SD_{monogamy}$=2.56 months) and had to have been dating for no more than 1.5 years (M_{length}= 9.91 months, SD_{length}=4.54 months; 90.2% in a committed relationship; $M_{OwnComm}$=5.69, $SD_{OwnComm}$=1.16). Participants who failed the attention check in Study 1a (n=39) or both attention checks in Study 1b (n=1), who did not provide their partners' names to be piped into the vignette in Study 1b (n=5), or who did not complete the prompt as directed (n_{1a}=232; n_{1b}=87) were excluded from analysis.[5]

2.1.2. Procedure

In both studies, participants were randomly assigned to either a commitment threat, commitment bolster, or control condition. See supplemental online material for the exact wording of the condition prompts. Participants then completed a measure of PPD as the key outcome.

In Study 1a, participants read a bulleted list of descriptions to prompt recall of a specific time in their relationships when their partners seemed less committed in the commitment threat condition (e.g., "You were less confident about your partner's desire to maintain your relationship," and "You thought your partner wasn't as dedicated to your relationship as you were,"), or more committed in the commitment bolster condition (e.g., "You were confident about your partner's desire to maintain your relationship," and "You thought your partner was very dedicated to your relationship"). These items used language validated to reflect commitment and adapted to allow participants to reflect on their partners' commitment levels (Rhoades et al., 2010; Stanley and Markman, 1992). Participants were then asked to write about these instances and reflect on their feelings for 3–5 min. In the control condition, participants were asked to reflect on the last time they went grocery shopping together.

[3] We decided that a regression with dummy coded condition variables was more appropriate for reporting the condition main effect results, although an ANOVA was initially run according to the preregistration and produced similar results, F (2, 568) = 3.25, p = .040. Tukey post-hoc comparisons revealed that the commitment threat and control conditions significantly differed in reported levels of PPD, M_{diff} = -0.29, p = .038, with no other significant comparisons, ps > .160. Relatedly, the preregistration mentioned covariates that were included as additional variables in the dataset, but these variables were not included in the final manuscript.

[4] In hindsight, stricter rules for stopping data collection should have been implemented. The power analysis preregistered for Study 1b was incorrect and should have stated 300 participants total (accounting for potential attrition), not per condition. Post-hoc power was therefore calculated for Study 1b: power = 0.9981. A sensitivity power analysis was also ran in G*Power 3.1 (Faul et al., 2007) with alpha = .05, power = .9981, N = 573, and 4 predictors and found an effect size f^2 = 0.06 for Study 1b.

[5] Specific reasons for prompt deletion are reported in the online supplemental material Tables S1 and S2. Importantly, we excluded participants who wrote about instances of alternative threat (i.e., infidelity), as this would conflate our perceived partner commitment manipulation with direct evidence of PPD.

Following the commitment manipulation, participants were randomly assigned to view a pre-selected photograph of an attractive person of the same gender as themselves, as even brief exposure to pictures of attractive alternatives can temporarily threaten perceptions of relationship stability (Kenrick et al., 1989). Participants were asked to evaluate the attractiveness and desirability of the person in the photo from their own and their partners' perspectives.

Participants in Study 1b read a hypothetical vignette involving alternative threat, which has been shown to elicit derogation (Bazzini and Shafer, 1999). Study 1b manipulated perceived partner commitment prior to introducing information about alternative threat. The passage asked participants to imagine attending a party with their current partners. Participants in the commitment threat condition were told that before the party, their partners mentioned that they may not want to be in the relationship anymore. In the commitment bolster condition, participants instead read that their partners mentioned they could not imagine being in a relationship with anyone else. We used a manipulation check to verify how participants felt about their partner's commitment. There was no language about partner commitment in the control condition. After the perceived partner commitment manipulation, participants in all three conditions read about a potential alternative threat. The prompt asked participants to imagine that after arriving at the party, they lost track of their partners and when they finally located them, their partners were seen interacting with an attractive alternative of the same gender as oneself. Study 2b therefore manipulated the degree of perceived partner commitment in the threat and bolster conditions, before having participants experience alternative threat. Although it was made clear that the alternative seemed interested in the partner (which has been shown to induce threat and lead to the process of devaluation; Lydon, 2010), no explicit information was provided about the partner's response to the alternative. We used relatively ambiguous language in Study 1b to allow participants to imagine the degree to which their partner might be tempted by the alternative.

2.1.3. Materials

Pictures. The photographs used in Study 1a were found online (e.g., Google search for "Instagram model") and showed White faces, to reflect the majority of participants (75.5% White) in the ResearchMatch sample (ResearchMatch, 2020). The pictures were pilot-tested with 40 undergraduates (self-identified as 60% Women, 40% Men; 55% White, 22.5% Asian, 5% Black; 90% non-Hispanic/Latinx) and rated on a 1 (*not at all attractive*) to 7 (*extremely attractive*) scale to determine levels of attractiveness. We selected pictures that were above average in attractiveness (i.e., rated above 4), but that would seem like credible alternatives for the current sample. Three pictures were selected for each gender ($M_{rating\text{-}men}$=4.98; $M_{rating\text{-}women}$=5.48), to control for the possibility that a single picture might produce idiosyncratic reactions. Participants were randomly assigned to pictures.

Own Commitment. Participants in Study 1a completed the 7 commitment items from the Investment Model Scale (Rusbult et al., 1998; e.g., "I want our relationship to last for a very long time,") on a 1 (*do not agree at all*) to 7 (*agree completely*) scale (α = .86). Participants in Study 1b completed a 4-item version of the Owen et al.'s (2011) Revised Commitment Inventory Dedication Subscale (e.g., "My relationship with my partner is clearly part of my future life plans,") on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*; α = .82), omitting items that seemed too strongly worded for new relationships (e.g., "My career [or job, studies, homemaking, childrearing, etc.] is more important to me than my relationship with my partner").

Own Devaluation. Participants in Study 1a answered the following item: "Please rate how attractive you think this person is" on a 1 (*not at all attractive*) to 7 (*very attractive)* scale.

PPD. In both studies, the PPD outcome items were first reverse-scored and then combined into a single composite, with higher scores indicating that participants thought their partners were devaluing the alternative to a greater extent. Participants in Study 1a received the prompt, "Please rate the extent to which you think…" and rated the following items: (1) "…your partner would be interested in dating this person" (2) "… your partner would find this person attractive" and to "Please rate" (3) "…how sexually desirable you think your partner would find this person" on a 1 to 7 (reverse-scored; α = .82) scale.

Participants in Study 1b read the prompt, "Please answer the following questions regarding the *person your partner is talking to in the given scenario*," and were asked five questions with their current partners' names piped in: (1) "What is the likelihood [partner name] is enjoying the conversation with this person?" and (2) "If this person were to ask [partner] to grab a cup of coffee, how likely do you think [partner] would be in agreeing to hang out one-on-one with this person?" on a 1 (*not at all likely)* to 7 (*extremely likely*) scale; (3) "How attractive do you think [partner] finds this person?" on a scale of 1 (*not at all attractive*) to 7 (*extremely attractive*); (4) "How interested do you think [partner] is in getting to know this person?" on a 1 (*not at all interested*) to 7 (*extremely interested*) scale; and (5) "To which extent do you think [partner] finds this person sexually desirable?" on a 1 (*not at all sexually desirable*) to 7 (*extremely sexually desirable*) scale (α = .84).

Manipulation Check. In Study 1b, participants were asked, "If you actually had the discussion about your relationship (provided in the scenario) with your partner, to which extent would you feel that your partner has doubts about your relationship?" on a 1 (*not at all*) to 7 (*very much*) scale[6].

Table 1
Studies 1a and 1b: Mean levels of perceived partner devaluation across conditions.

	Study 1a		Study 1b	
Condition	Mean	SD	Mean	SD
Threat	3.59	1.42	4.08	1.24
Control	3.86	1.40	4.37	1.15
Bolster	3.76	1.32	4.29	1.05

2.3. Results of study 1a and 1b

2.3.1. Testing the condition effect

To test the effects of the three conditions on PPD, we created two dummy-coded variables. One dummy code represented the commitment threat condition (i.e., commitment threat = 1) and the other represented the commitment bolster condition (i.e., commitment bolster = 1), with the control condition serving as the reference group for both dummy variables (i.e., control = 0). Condition means are presented in Table 1 (full analyses are presented in Table S3). Additionally, own commitment was included in the analyses to establish perceived partner commitment's unique predictive ability of PPD. Own commitment was a significant and positive predictor of PPD in both Study 1a, $ß$=.18, F(1, 744)=23.85, p < .001, 95% CI[.15,.34], and Study 1b, $ß$=.22, F(1, 566)=28.35, p < .001, 95% CI[.14,.30]. In the test of Hypothesis 1, the comparison between the commitment threat and control conditions was also significant, even while controlling for own commitment, in both Study 1a, $ß$=-.09, F(1, 744)=5.61, p = .018, 95% CI[-.53,-.05] and Study 1b, $ß$=-.11, F(1, 566)=5.42, p = .020, 95% CI[-.50,-.04]. These results indicate that participants in the commitment threat conditions on average reported lower levels of PPD than participants in the control conditions, beyond the effects of one's own commitment. However, the commitment bolster condition comparisons did not reach significance in either Study 1a, $ß$=-.04, F(1, 744)=0.93, p = .334, 95% CI[-.35,.12], or Study 1b, $ß$=-.01, F(1, 566)=0.08, p = .777, 95% CI[-.26,.19].

We included a measure of own devaluation in Study 1a to control for projection and added it to the analysis predicting PPD with own devalu-

[6] A manipulation check was not included in Study 1a and is a limitation of the study.

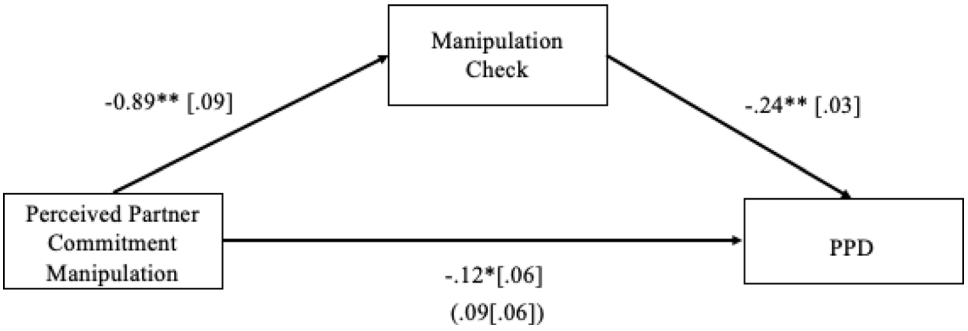

Fig. 1. Mediation of the effect of perceived doubt (manipulation check) on perceived partner devaluation in study 1b.
Note. Unstandardized effect coefficients are presented first, with standard errors in brackets. The total effect is presented in parentheses. $^{*}p < .05$, $^{**}p < .001$.

ation included in the model. The commitment threat dummy code significant effect remained significant, ß=-.07, $F(1, 743)=4.23$, $p = .040$, 95% CI[-.39,-.01]. To check that we had successfully manipulated perceived partner commitment in Study 1b, we performed a one-way ANOVA of the condition effect on the manipulation check and found a significant effect, $F(2, 559)=71.58$, $p < .001$. Tukey-corrected post-hoc comparisons revealed that participants in the commitment threat condition ($M = 4.10$, $SD = 2.00$) reported significantly greater levels of perceived partner relationship doubt than participants in the control ($M = 2.38$, $SD = 1.46$), $p < .001$, and bolster conditions ($M = 2.32$, $SD = 1.37$), $p < .001$. The latter two conditions did not differ significantly, $p = .932$.

To support our claim that the significant difference between the commitment threat and control conditions predicting PPD in Study 1b was due to successful manipulation of perceived partner commitment, we conducted a mediation analysis using Process 3.5.3 (Hayes, 2018) with 10,000 bootstrap samples to produce a 95% confidence interval for the indirect effect[7]. This analysis assessed if participants' level of doubt about the partner's commitment mediated the association between the commitment threat condition variable and PPD (see Fig. 1). The indirect effect of condition through perceived doubts about partner commitment predicting PPD was significant, B = .21, *S.E.*=.03, 95% CI[.15,.29]. These results support our interpretation that the difference in PPD levels across the commitment threat and control conditions reflected perceived doubt in partner commitment.

2.4. Discussion of Studies 1a and 1b

Together, Studies 1a and 1b provided support for a causal pathway from perceived partner commitment to PPD (H1) that is independent from one's own commitment (H2). When led to perceive lower commitment by their partners, participants reported lower levels of PPD across Studies 1a and 1b. This finding suggests that encountering extradyadic threat may be especially difficult when the partner's commitment is in question, despite being highly committed oneself. This association remained significant in Study 1b when controlling for participants' own devaluation of the alternative and therefore reflected participants' inferences about how the partner felt independent from one's own feelings (H3). We did not, however, find evidence in either study that bolstering perceived partner commitment significantly influenced PPD. This null result might indicate that the bolstering manipulation we used was too weak to be effective, or influence levels of PPD. This finding could also reflect the fact that both samples consisted of highly committed people, so that levels of PPD were already at ceiling levels in the control condition, or that "bad is stronger than good" and more influential on relationships (Baumeister et al., 2001). In Study 2, we specifically sought to assess the potential of PPD to serve as a relationship maintenance mechanism, helping to protect people's positive beliefs about their partners and prioritizing their relationships over the threat of alternatives.

[7] We used the seed function to produce a consistent bootstrap percentile confidence interval with each iteration.

3. Study 2

3.1. Pilot Study

After establishing in Study 1a and 2b that perceived partner commitment is a predictor of PPD (H1) unique from one's own commitment (H2) and projective processes (H3), we then ran a correlational pilot study to determine if relational trust is associated with PPD (H4). We recruited 296 individuals (self-identified as 62.2% Women; 85.8% Heterosexual; 90% White, 4.7% Black or African American, 1.3% Asian; 87.5% Non-Hispanic/Latinx; M_{age}=42.66, SD_{age}=15.91) online through ResearchMatch. Participants needed to indicate that they were currently involved in a committed, monogamous relationship (63.2% married; $M_{OwnComm}$=5.75, $SD_{OwnComm}$=1.07) for at least four months to participate ($M_{rel\text{-}length}$=16.04 years, $SD_{rel\text{-}length}$=33.11 years). Herein, participants self-reported the proposed moderator of relational trust, perceptions of their partners' tendency to devalue, and their own tendency to devalue alternatives as a control for projection. We found that relational trust significantly and positively predicted PPD, ß=.30, $F(1, 290)=31.24$, $p < .001$, 95% CI[.23,.47], while controlling for one's own devaluation, ß=.40, $F(1, 290)=60.54$, $p < .001$, 95% CI[.30,.51], and own commitment, ß=-.03, $F(1, 290)=0.21$, $p = .644$, 95% CI[-.18,.11]. This provided preliminary evidence that trust may be another important relationship variable for studying the process of PPD and as a result was included in Study 2 as a potential moderator. Full results are included in the supplemental online material.

3.2. Main Study

Studies 1a and 1b assessed the process of PPD from the recall of past behavior and hypothetical vignettes. Study 2's aim was to induce alternative threat in a laboratory setting with both partners present to capture how baseline levels of perceived partner commitment and relational trust impact the process of perceiving a partner's devaluation of a threatening alternative. We also included a control condition in which the behavior of the partner evaluating the alternative would not be seen as threatening. We adapted a paradigm developed by Murray et al. (2002). To induce worries about the partner's acceptance, Murray led participants to believe that their partners were taking a long time listing things that they did not like about the participants. In reality, their partners were instructed to list items in their dorm rooms. In our adaptation, participants in the threat condition were led to believe that their partners were typing extensively about traits they found attractive in a new, potentially available alternative partner, whereas in actuality their partners were describing items in their dorm rooms. In the control condition, participants were led to believe that their partners did not have much to say about a less desirable and unavailable alternative. We included language about the alternative's attractiveness (Johnson and Rusbult, 1989) and proximity (Bazzini and Shaffer, 1999), which have previously been shown to induce threat and trigger the process of devaluation, to provide a strong alternative threat manipulation. We were especially interested in assessing whether greater baseline lev-

els of perceived partner commitment or relational trust buffered participants against alternative threat and resulted in higher PPD. We also controlled for projection (i.e., the participant's *own* devaluation of the alternative).

3.3. Method

3.3.1. Participants

An *a priori* power analysis (G*Power 3) determined that to detect an effect size (d)=0.50, with power=.80, and alpha=.05, 64 couples were needed per condition, for a total of 128 couples (Faul et al., 2007). We recruited 132 romantically involved mixed-sex couples (n_{threat}=70, $n_{control}$=62; M_{age}=20.26 years old). Participants self-identified as 93.4% Heterosexual, 4.3% Bisexual or Pansexual; 51.4% White, 35.8% Asian, 5.8% Black; 88.2% non-Hispanic/Latinx. Couples had to be exclusively involved with each other (86.4% in a committed relationship; $M_{OwnComm}$=5.38, $SD_{OwnComm}$=1.20) for at least one month to participate ($M_{rel\text{-}length}$=1.18 years). Five couples were excluded due to experimenter error.

3.3.2. Procedure

Each member of the couple was asked to separately complete an online baseline questionnaire assessing perceived partner commitment and trust. Approximately one week later, couples came to the lab together and were randomly assigned to either the threat or control condition. Then, one member of each dyad was randomly assigned to receive the manipulation, while the other person was asked to describe items in their dorm room.

The experimenter led each couple into the lab and directed each partner to an assigned seat in front of a computer. There was a physical divider between the adjacent tables so partners could not see each other's screens, but we used older, mechanical keyboards so that participants were easily able to hear their partners typing. Partners were instructed to not talk to each other once the experiment started. Participants who received the manipulation were asked to evaluate a picture of an alternative person of the same gender and race as themselves and asked to list attractive qualities about this potential alternative for their partner. Following Murray et al. (2002) paradigm, we led participants receiving the manipulation to believe that their partners had received the same task. In other words, we led participants to believe that their partners were also listing qualities that they found attractive about the same alternative photo. However, in actuality the other partner did not see the alternative photo and instead was asked to list objects in their dorm room.

In the threat condition, participants evaluating the alternative viewed a picture of a highly attractive alternative and read a prompt explaining that the person depicted was thinking of transferring to our university. These details were designed to amplify alternative threat. Participants viewing the picture were then asked to describe qualities that they found attractive about the alternative. Although the participant viewing the alternative was led to believe that their partner, the other participant, had received the same instructions and photograph, in reality the other participant was asked to list and describe in some detail 12 items in the partner's dorm room. Listing 12 items would lead to typing considerably longer than the first participant, suggesting that the partner had found many things attractive about the alternative. Our goal was to create an environment in which the participant evaluating the alternative would believe that the partner was taking a long time listing attractive qualities about a highly attractive alternative, suggesting possible threat to their committed relationship.

In the control condition, partners randomly assigned to evaluate the alternative instead viewed a photo of a relatively unattractive alternative, and read a prompt indicating that the alternative lived in a state across the country from our university. These details were designed to lessen the threat of the alternative, inasmuch as this alternative was neither available nor desirable. Their partners, who also received the dorm room task, were instructed to list only one item, to ensure that they were not typing longer than participants evaluating the alternative. Our goal was to imply that the partner with the dorm room task would not find much attractive about the alternative, minimizing threat potential.

In the threat condition, the participant evaluating the alternative on average waited 2.92 min for their partner completing the dorm room task to finish typing.[8] In the control condition, the partner completing the dorm room task waited 3.00 min on average for the participant viewing the alternative to finish (i.e., none finished first). This provides evidence that the manipulation had the intended effect for participants viewing the alternative to be waiting on their partners to finish typing in the threat condition, but were not waiting on their partners in the control condition. After both partners completed their respective tasks, they separately filled out the outcome questionnaire (containing post-manipulation measures of perceived partner commitment and relational trust). Participants were thoroughly debriefed before leaving the lab.

3.3.3. Materials

Pictures. Pictures for the threat condition were found online. We selected pictures of both genders and of the two most common racial groups in our student body (i.e., White and Asian). We asked participants in a separate, pilot sample on Amazon's Mechanical Turk to assess how attractive they thought their partners would rate the pictures, to maximize perceived threat of the alternative. Pictures were rated on a 1 (*not at all attractive*) to 7 (*extremely attractive*) scale by participants of the same race (n_{Asian}=48; n_{White}=84). The eight pictures (two of each gender × race combination) that received the highest attractiveness ratings were then selected as the final pictures to be randomly assigned to participants. Average picture attractiveness ratings for the threat and control conditions can be found in Table S4.

Pictures in the control condition were taken from the Chicago Face Database, which provides standardized photos that have been rated by independent judges (Ma et al., 2015). We selected eight pictures (two from each gender × race combination) rated slightly below the midpoint of a 1 (*not at all attractive*) to 7 (*extremely attractive*) scale. All pictures in both conditions were similar headshots and only depicted the alternative's face. By including two photos of each gender × race combination and randomly assigning participants to view one of them, we aimed to control for idiosyncratic preferences depicted in a particular photo.

Own commitment. Participants completed an abbreviated 6-item commitment measure (Owen et al., 2011) to assess their own commitment level (e.g., "My relationship with my partner is clearly part of my future life plans,"; α = .89).

Perceptions of the partner's commitment. Participants completed the same abbreviated 6-item commitment measure (Owen et al., 2011), adapted to represent the perceiver's assessment of the partner's commitment level (e.g., "My *partner's* relationship with *me* is clearly part of *my partner's* future life plans,"; α = .88).

Relational trust. Participants completed a six-item trust measure from Murray and Holmes (1997; e.g., "Though times may change and the future is uncertain, I know my partner will always be ready and willing to offer me strength and support,") on a scale of 1 (*not at all true*) to 7 (*completely true*; α = .77).

Own devaluation of the alternative. Participants answered one item assessing their own devaluation of the alternative, "How attractive do you think this person is?" using a scale of 1 (*not at all attractive*) to 7 (*extremely attractive*) [reverse-scored].

PPD. Participants were asked to answer three items assessing PPD: (1) "How sexually desirable do you think your partner finds this person?" (2) "How attractive do you think your partner finds this person?" (3) How interested do you think your partner is in potentially dating this person?" on a scale of 1 (*not at all desirable; attractive; interested)*

[8] Only two participants viewing the attractive alternative finished typing after the dorm room partner, 10 and 6 seconds later.

to 7 (*extremely desirable; attractive; interested*). The items were reverse-scored and summed to form a composite measure ($\alpha = .84$). As in Studies 1a and 1b, higher values indicated greater levels of PPD and own devaluation.

Manipulation check. As the first question in the debriefing process, participants were asked the following *yes-no* question, "Did you notice that your partner was typing more or less than yourself?"

3.4. Results

As a check to see if participants picked up on their partner's typing, after the session a research assistant asked the partner who evaluated the alternative if he or she noticed the other partner typing and recorded these responses. A chi-square test revealed a significant association between condition and noticing their partners typing, $X^2(1)=35.81$, $p < .001$, with the odds of noticing one's partner typing being 2.33 times higher if the participants were in the threat than in the control condition. This intended difference indicates that participants were more aware of their partners typing in the threat condition. In order to determine if participants noticing the partner typing more actually reflected perceiving the partner to find the alternative attractive, we needed to test the condition effect on the outcome of PPD.

The condition effect was contrast coded (threat=-1; control=1) and entered into a regression model predicting PPD with participants' own devaluation as a control variable. This served as our base analytic model. We then separately added each of the centered covariates (i.e., perceived partner commitment and relational trust) and their interactions with the condition effect onto the base model predicting PPD.

3.5. Did the manipulation influence PPD?

Participants in the threat condition reported significantly lower levels of PPD ($M_{threat}=4.29$, $SD_{threat}=1.42$) in comparison to participants in the control condition ($M_{control}=6.06$, $SD_{control}=0.73$), $ß=.61$, $F(1, 130)=77.77$, $p < .001$, 95% CI[.69,1.09]. This result confirmed our hypothesis that participants who were led to believe that their partner found many attractive qualities in the alternative reported the partner devaluing to a lesser extent than participants who were led to believe that the partner found few attractive qualities in the less desirable alternative.

3.6. Controlling for projection

The condition effect remained significant, $ß=.25$, $F(1, 129)=7.94$, $p = .006$, 95% CI[.11,.60] when own devaluation ($M_{threat}=2.59$, $SD_{threat}=1.31$; $M_{control}=5.03$, $SD_{control}=1.14$) was included in the model, $ß=.52$, $F(1, 129)=35.88$, $p < .001$, 95% CI[.29,.58].This result indicates that PPD cannot be ascribed to participants themselves perceiving the alternative as less attractive. Instead, our results show that PPD represents unique perceptions of how the partner sees the alternative beyond one's own rating of the alternative's attractiveness.

3.7. Relational Trust

To determine whether baseline relational trust ($M_{Trust}=5.76$, $SD_{Trust}=0.97$) buffered the effect of the threat manipulation on PPD, we added to the base analytic model centered relational trust and its interaction with the condition effect. We found a significant main effect of trust, $ß=.17$, $F(1, 124)=7.59$, $p = .007$, 95% CI[.07,.45], with higher levels of baseline trust associated with higher levels of PPD. Trust also significantly moderated the condition effect, $ß=-.14$, $F(1, 124)=4.98$, $p = .027$, 95% CI[-.40,-.02] (see Table 2). Simple effects analyses revealed that trust did not predict PPD in the control condition, $ß=.03$, $F(1, 124)=0.13$, $p = .722$, 95% CI[-.22,.31] but that greater trust did significantly predict *greater* levels of PPD in the threat condition, $ß=.30$, $F(1, 124)=12.61$, $p < .001$, 95% CI[.21,.73]. This finding supports our hypothesis that higher levels of relational trust can serve as a buffer in the presence of a threatening alternative to maintain positive thoughts about the partner.

Table 2
Study 2: Regression model with condition and baseline relational trust predicting perceived partner devaluation.

Variable	β	F	p	95% CI LL	95% CI UL
Condition	.28	10.52	.002	.32	1.30
Own Devaluation	.47	30.15	<.001	.25	.54
Trust	.30	12.61	<.001	.21	.73
Condition × Trust	-.19	4.98	.027	-.80	-.05

Note. This analysis had (4, 124) degrees of freedom.

Table 3
Study 2: Regression model with condition and baseline perceived partner commitment (PPC) predicting perceived partner devaluation.

Variable	β	F	p	95% CI LL	95% CI UL
Condition	.24	8.39	.004	.11	.59
Own Devaluation	.50	35.13	<.001	.28	.55
Own Commitment	.03	0.08	.780	-.18	.24
PPC	.20	5.20	.024	.03	.47
Condition × PPC	-.16	7.42	.007	-.35	-.06

Note. This analysis had (4, 122) degrees of freedom.

3.8. Perceived partner commitment

To determine whether baseline perceived partner commitment ($M_{PPC}=5.22$, $SD_{PPC}=1.23$) buffered the effect of the threat manipulation on PPD, we added to the base analytic model centered perceived partner commitment and its interaction with the condition effect. Own commitment was included as an additional control variable to determine the unique effect of perceived partner commitment on PPD. The main effect of perceived partner commitment was significant, $ß=.20$, $F(1, 122)=5.20$, $p = .024$, 95% CI[.03,.47], such that higher levels of perceived commitment predicted greater perceived devaluation. This effect was qualified by a significant interaction between perceived partner commitment and the condition contrast code, $ß=-.16$, $F(1, 122)=7.42$, $p = .005$, 95% CI[-.35,-.06] (see Table 3). Simple effects analyses revealed that there was no effect of perceived partner commitment on PPD in the control condition, $ß=.04$, $F(1, 122)=0,14$, $p = .713$, 95% CI[-.22,.32] but that in the threat condition, greater baseline perceived commitment led to *greater* PPD, $ß=.37$, $F(1, 122)=12.10$, $p < .001$, 95% CI[.20,.71]. Interestingly, one's own commitment was not a significant predictor in the model, $ß=.03$, $F(1, 122)=0.08$, $p = .780$, 95% CI[-.18,.24]. This finding supports our hypothesis that believing a partner is highly committed to the relationship can help buffer against alternative threat and that this association is independent from one's own commitment level.

3.9. Discussion

In Study 2, participants led to believe that their partners were listing many attractive traits of highly desirable and potentially available alternatives reported lower PPD than participants who were led to believe their partner listed only a few attractive traits of less desirable and unavailable alternatives. This condition effect remained significant when controlling for participants' own devaluation of the same alternative, providing evidence that the process of PPD extends beyond one's own devaluation (i.e., projection) and, in this study, represented perceptions based on actual partner behavior (i.e., their typing).

Together, these findings provide empirical support for the idea that amplifying feelings of threat by an attractive alternative leads to lower levels of PPD. However, participants with greater levels of perceived partner commitment and relational trust were able to buffer against the

highly threatening alternative and still perceived greater devaluation by the partner. Perceptions of the partner being dedicated and accountable, respectively, to the relationship gave participants a boost to maintain positive beliefs about the partner, even when led to believe that the partner was listing many attractive traits about a threatening alternative. Deploying PPD as a maintenance mechanism in threatening situations with alternatives appears to characterize committed people with greater levels of perceived partner commitment and relational trust.

4. General discussion

Previous research on derogation of alternatives has documented several ways in which individuals respond to potential alternatives to maintain commitment to their current partners (Lydon, 2010). The present work examined this situation from the perspective of the other partner involved: How do motivated persons perceive their partners when they see the partner in the presence of a potential alternative? Across three experiments, we provide evidence for the process of perceived partner devaluation of alternatives (PPD). PPD provides a novel perspective on the derogation literature by asking how the individual (i.e., the perceiver) is motivated to interpret the partner's encounters with alternatives.

In three experiments, participants in the threat condition on average reported lower levels of PPD than participants in the control condition, providing empirical support for how people are influenced by perceived partner commitment (Study 1a and 1b) and the alternatives' attractiveness and availability (Study 2) to infer their partners' devaluation of alternatives. Across all three studies, we found support for the importance of perceived partner commitment in assessing the partner's response to alternative threat. In studies 1a and 1b, perceived partner commitment was experimentally manipulated before measuring PPD and in Study 2, perceived partner commitment was assessed at baseline before experimentally inducing PPD. All studies also controlled for the perceivers' own commitment to identify perceived partner commitment's unique association with PPD. Together, these studies provide evidence of a causal relationship with perceived partner commitment predicting PPD that is unique from one's own commitment level.

It may be that committed people are especially motivated to infer their partners' experience of threatening alternatives (Simpson et al., 1995; 1999). Studies 1a and 1b demonstrated that when a person is led to believe that the partner's commitment is wavering, it is difficult to deploy relationship-promoting cognitions during alternative threat. In Study 2, however, we found that perceivers reporting greater perceived partner commitment prior to the lab session were better able to maintain confidence in their partners, even when led to believe the partner was positively evaluating an available, highly attractive alternative. Perceived partner commitment is positively associated with greater expectations for relationship stability, so PPD may provide a specific route for perceivers to protect relationship-promoting beliefs while navigating situations with threatening alternatives (Tan et al., 2020). Together, these studies provide evidence that people in relationships use information about the partner's current commitment level to infer how the partner evaluates alternatives.

4.1. Theoretical implications and future directions

Committed people can respond to their partners interacting with alternatives in a manner that either protects their positive views of the relationship or that protects the self from potential rejection (Murray et al., 2006). Similar to our finding that higher levels of perceived partner commitment led perceivers to report greater PPD in Study 2, perceivers with higher levels of relational trust buffered against their partners evaluating a highly attractive alternative in the threat condition by reporting greater PPD. This finding illustrates that more trusting perceivers were able to respond to the alternative threat with greater PPD. Individuals higher in trust generally tend to make more positive attributions for a partner's behavior, which positively influences global relationship stability (Rempel et al., 2001). Relational trust may be another resource that committed people use to positively respond to uncertainty regarding alternatives and should be included in future studies of PPD.

4.2. Limitations

We did not include a manipulation check in Study 1a, which was an error on our part in the study's design. In Study 1b, we provided hypothetical information regarding the alternative interacting with the partner to allow for the participants to make inferences about how the partner viewed the alternative. We did not, however, think it was plausible to ask participants to rate the attractiveness of the hypothetical alternative from their own perspectives and therefore did not include a measure of own derogation. We designed the alternative threat in Study 2 to be a strong threat stimulus, and included both the attractiveness and proximity of the alternative to heighten the threat of the alternative. After the introduction of the threat stimulus, the partner's typing was the true manipulation in the study, following Murray et al. (2002) paradigm with eliciting greater worries about the partner's acceptance via greater partner typing. However, we cannot be certain if the effects of the threat condition were due to attractiveness of the alternative, proximity of the alternative, or the partner's typing. We suspect that all three factors contributed, but future empirical work will need to examine this possibility. Additionally, the manipulation check in Study 2 assessing if participants noticed the partner typing was an indirect measure of participants perceiving the partner to find the alternative attractive.

Our samples limit our ability to generalize these findings to all romantic relationships. Studies 1a and 1b consisted of samples with the majority of participants self-identifying as heterosexual and Study 2 was limited to mixed-sex relationships. We anticipate that this process would operate similarly in same-sex couples; future studies should include participants with diverse gender identities and sexual orientations. These studies were also limited to individuals involved in committed, monogamous relationships and therefore cannot be generalized to relationships with other commitment structures. In particular, consensually nonmonogamous (CNM) relationships involve commitment structures in which both people consent to having more than one romantic or sexual relationship (Conley et al., 2013; 2017). Like our work, previous research on alternatives has focused on monogamous relationships because alternatives are inherently threatening to agreed-upon or assumed commitments in these relationships. However, the current literature does not speak to whether partners in CNM relationships attend to their partners' alternatives or if there are circumstances in which devaluing serves a protective function. These questions should be examined in future research.

Another limitation is that our theoretical framework focused on *perceived* partner devaluation and consequently we did not measure *actual* partner devaluation. Just how accurate these perceptions are remains an open question. We theorize that perceived partner devaluation would better predict relationship outcomes than actual partner devaluation, mirroring the meta-analytic finding that perceived similarity influences existing relationships more than actual similarity does (Montoya et al., 2008). Future research is needed to determine the extent to which PPD is based on motivated cognitions, above and beyond actual partner devaluations. Future research should also examine the directionality of the association between perceived partner commitment and perceived partner devaluation to determine whether the reverse direction (i.e., PPD predicting perceived partner commitment) is also plausible.

5. Conclusion

Seeing a partner engaging with an alternative in a social situation is a threatening circumstance that couples often face. Previous research has consistently focused on one's own alternatives and identified one's own commitment as the driving force for the process of derogation. Our

research has expanded upon previous work by including the perspective of the perceiving partner during these situations with alternatives and has identified perceptions of the partner's commitment as a driving force for the process of perceived partner devaluation. Our work has illuminated one barrier to buffering against alternative threat that low perceived partner commitment creates. We believe that this is an important relationship characteristic to examine in future studies. However, despite lower perceived partner commitment generally leading to lower perceived partner devaluation, our work provided some evidence of buffering when participants' partners were interacting with attractive and available alternatives. We found that committed individuals who reported greater levels of perceived partner commitment or relational trust were better equipped to deploy PPD in threatening circumstances. Future research should extend this work to include other motivated biases that committed people exhibit to protect their relationships from alternative threats.

Funding

The University of Rochester.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CRediT authorship contribution statement

Alexandra E. Black: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft. **Harry T. Reis:** Methodology, Writing – original draft, Supervision, Funding acquisition.

Acknowledgments

We would like to thank Jonathan Gordils for taking the time to provide detailed and insightful feedback on this manuscript and for all of the research assistants who helped to make the dyadic study possible, in particular Sophia Stafford for her extensive help cleaning the dataset.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.cresp.2022.100042.

Appendix A. Appendix title

Appendix para.

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