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Abstract

Although a great deal of attention has been paid to the role of people's own investment in promoting relationship commitment, less research has considered the possible role of the partner's investments. An experiment (Study 1) and two combined daily experience and longitudinal studies (Studies 2 and 3) documented that perceived investments from one partner motivate the other partner to further commit to the relationship. All three studies provided support for gratitude as a mechanism of this effect. These effects held even for individuals who were relatively less satisfied with their relationships. Together, these results suggest that people feel particularly grateful for partners who they perceive to have invested into the relationship, which, in turn, motivates them to further commit to the relationship. Implications for research and theory on gratitude and relationship commitment are discussed.

Keywords

investment, gratitude, commitment, couples, romantic relationships

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In romantic relationships, both members of the couple typically invest time, energy, and other resources into their relationship, all of which would be lost if just one member of the couple decided to terminate her or his involvement. The literature on close relationships has clearly established that people's perceptions of the investments they have already made into their romantic relationships can shape their decision to commit to the relationship (Goodfriend & Agnew, 2008; Rusbult, 1980, 1983). Much less research, however, has examined if and how people's perceptions of their *partners'* investments might influence their commitment. In the present paper, we tested the idea that perceived investments made by the romantic partner influence feelings of gratitude, and in turn, commitment to the relationship.

We propose that gratitude is a key mechanism through which perceiving a romantic partner to be invested in a relationship promotes further commitment. Gratitude is an interpersonal emotion that represents the extent to which people feel thankful and appreciative for what their partner does for them, as well as for who their partner is as a person (e.g., A. M. Gordon, Impett, Kogan, Oveis, & Keltner, 2012; Kubacka, Finkenauer, Rusbult, & Keijsers, 2011). Recent research has shown that when people feel appreciative of their partner's kind deeds and for who their partner is as a person, they have a greater desire to maintain their relationship (A. M. Gordon

et al., 2012), and we expect that people are likely to feel grateful for a partner who has invested resources into maintaining the relationship. Thus, we propose that perceiving a partner as invested in the relationship will trigger feelings of gratitude, and in turn, motivate people to further commit to the relationship.

Investment in Relationships

Investments can be defined as resources that are placed into a relationship that people would lose if their relationship were to end (Rusbult, 1980). Investments can be tangible, such as sharing material goods with a romantic partner, and intangible, such as spending time or effort on one's relationship (Goodfriend & Agnew, 2008). Rusbult (1980, 1983) was the first to note that the investments a person has made

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into a romantic relationship should act as an important motivator of commitment: "Investments increase commitment and help to 'lock the individual into his or her relationship' by increasing the costs of ending it—to a greater or lesser degree, to abandon a relationship is to sacrifice invested resources" (Rusbult, 1983, p. 103). Rusbult's (1980, 1983) Investment Model of relationship commitment was originally developed to explain why some people remain committed to dissatisfying relationships. Research has provided extensive support for the Investment Model, with investment consistently predicting relationship commitment and stability in samples of dating and married couples (see Le & Agnew, 2003 for review).

The effects of an individual's own investment on his or her commitment to the relationship have been strongly established; in contrast, considerably less attention has been paid to the role of the partner's investments. For example, studies of couples that have included Rusbult's investment measure have tended to focus on each member of the dyad separately, rather than examining the effects of one partner's investment behavior on the other partner's commitment (e.g., Bui, Peplau, & Hill, 1996; Van Lange et al., 1997). However, research on the related topic of pro-relationship behavior suggests that one partner's pro-relationship acts (such as sacrifice or accommodating a partner's negative behavior) can indeed motivate continued commitment from the other partner (e.g., Murray & Holmes, 2009; Wieselquist, Rusbult, Foster, & Agnew, 1999). For example, Wieselquist et al. (1999) followed romantic couples across multiple time points, finding that when one partner was more willing to engage in pro-relationship behavior, such as making a sacrifice for the good of the relationship or inhibiting their own negative reactions to a partner's provocation, the other partner responded with increased commitment to the relationship. Furthermore, Murray and colleagues have repeatedly shown that people feel more committed to their relationships when they perceive their partners to be responsive and supportive as opposed to unresponsive or rejecting (e.g., Murray et al., 2011). Together, this research provides evidence that one partner's feelings of commitment to the relationship are likely influenced by how much the other partner chooses to put into the relationship.

Why would the perception that one's romantic partner is highly invested motivate an individual to commit to his or her relationship? Murray and Holmes (2009) as well as Wieselquist and colleagues (1999) posit that this process may occur because people feel that it is safe to commit to a romantic partner who is highly invested in the relationship. That is, a partner's investments signal that the partner can be trusted. Trust in one's partner, defined as being confident that one's partner is available to meet one's needs, should in turn increase people's willingness to depend on their partners, meaning that they are more willing to rely on their partners as a key source of support and validation (e.g., Murray et al., 2011). Indeed, trust was an important mechanism of the

effects documented by Wieselquist and colleagues (1999) in that people with partners who were more willing to commit pro-relationship acts felt that they could trust their partners, and these feelings of trust, in turn, increased people's own commitment to their relationships.

Overall, the existing literature on close relationships suggests that the link between perceptions of one partner's investments and the other person's commitment may operate through a security-based mechanism, whereby responsiveness from one partner alleviates the other partner's concerns about vulnerability, making that person feel that they can trust their partner and that it is "safe" to increase their own commitment to the relationship. Therefore, in the current research, we expect that we will replicate this finding whereby trust will be an important mechanism through which perceptions of a romantic partner's investments will promote people's commitment to their relationships. In addition to trust, we propose that *gratitude* will be another key mechanism that will motivate people to commit to their relationships in response to their romantic partner's investments. Feeling that one's romantic partner is highly invested into the relationship may not only reassure a person that the relationship is secure (and thus that there are fewer risks associated with committing in return), but it should also remind the individual that they have a rewarding, high-quality partner (and thus that the relationship is generally worth committing to). Specifically, we propose that when people perceive that their partner has made a relationship investment, they will feel a sense of gratitude for their partner, which will in turn motivate them to further commit to the relationship.

Gratitude as a Mechanism

People experience gratitude in romantic relationships when their partners perform kind acts or favors for them, such as being responsive to their needs (Algoe, Gable, & Maisel, 2010; Kubacka et al., 2011). We propose that perceptions of a partner's investments will likewise elicit feelings of gratitude. The gratitude that people experience should, in turn, motivate them to commit to the relationship themselves. Indeed, a growing body of research points to the important role that gratitude plays in facilitating the development and maintenance of close relationships (e.g., Algoe, Haidt, & Gable, 2008; A. M. Gordon et al., 2012). Research with dating couples (Algoe et al., 2010) and married couples (C. L. Gordon, Arnette, & Smith, 2011) has shown that feelings of gratitude can increase relationship satisfaction for the recipient and the benefactor. Gratitude appears to serve a prosocial function in close relationships as it does in other contexts. For example, expressing gratitude to a close other increases feelings of responsibility for that person's well-being (i.e., communal strength; Lambert, Clark, Durtschi, Fincham, & Graham, 2010) and comfort and willingness to voice relationship concerns (Lambert & Fincham, 2011), which are both important types of behaviors that people enact to

maintain their relationships. People who are more grateful for their romantic partners engage in more relationship maintenance behaviors (Kubacka et al., 2011), are more committed in their relationships, and more likely to stay with their partners over time (A. M. Gordon et al., 2012).

We hypothesized that perceiving a romantic partner to be invested in the relationship would prompt people to further commit to their relationship because the partner's investments elicit feelings of gratitude. Because relationship investments involve dedicating resources to the relationship (e.g., time, energy, money), we hypothesized that perceiving that a romantic partner has invested into a romantic relationship will elicit feelings of gratitude. Furthermore, because gratitude is an emotion that motivates relationship maintenance behavior, we expected that gratitude would motivate people to commit to their relationships in return. Thus, we anticipated that feelings of gratitude would be an important mechanism of the hypothesized association between one person's investments and his or her romantic partner's commitment to the relationship.

These hypotheses build on and extend existing research on the emotion of gratitude and research on close relationships in several key ways. First, although previous research has examined the reciprocity of pro-relationship acts, no research has directly investigated whether perceptions of a partner's investments promote an individual's own commitment to the relationship. Second, previous research has identified trust as a mechanism through which one partner's investments may promote the other partner's commitment (e.g., Murray & Holmes, 2009; Wieselquist et al., 1999). We extend this research by proposing a second pathway for this effect. That is, we suggest that gratitude—which has been shown to play an important role in relationship maintenance (e.g., A. M. Gordon et al., 2012; Kubacka et al., 2011)—can be elicited by the perception that one's partner is highly invested in the relationship. Recent research on gratitude in close relationships has largely focused on the downstream consequences of gratitude, with little work considering which factors promote experiences of gratitude toward a romantic partner.

Overview of the Current Studies

In three studies combining experimental, daily experience, and longitudinal methods, we tested two central hypotheses. Our first prediction was that when people perceive their romantic partner to have invested into the relationship, they will be more likely to commit to the relationship themselves. Our second prediction was that this effect will be mediated by gratitude. That is, we hypothesized that people who perceive their partners as more invested will feel a sense of gratitude for their partners, which in turn will promote their own commitment to the relationship. Furthermore, we expected that these effects would hold controlling for relationship satisfaction, and that they would extend even to

individuals who were less satisfied with their romantic relationships. This would suggest that perceiving the romantic partner as being highly invested may motivate people to stay in their relationships even if those relationships are not particularly fulfilling.

In Study 1, we experimentally tested whether making the partner's investments salient would lead to higher feelings of commitment. Specifically, we recruited dating and married participants and randomly assigned some of them to think and write about their romantic partner's investments. We predicted that relative to those in control conditions, participants who thought about their romantic partner's investments would experience stronger feelings of gratitude for their partner, which would in turn predict higher commitment. We expected that this effect would emerge above and beyond any effects of trust, an established mediator of the link between perceiving a partner as invested and feeling committed. In Studies 2 and 3, we used daily experience and longitudinal methods to measure investments and feelings of gratitude in a more naturalistic setting. We predicted that people who perceived that their partners made more daily investments into the relationship would feel more grateful for their partners, which would in turn increase people's own commitment to their relationships over time. We expected these effects to emerge irrespective of relationship satisfaction.

Study 1

The primary goal of our first study was to provide experimental evidence of the link between perceived partner investments and commitment. We recruited participants who were currently involved in romantic relationships and randomly assigned them to one of three conditions: (a) a partner investment condition in which they were instructed to recall investments that their partner had made into the relationship, (b) an own investment condition in which they recalled investments that they had made into the relationship, or (c) a control condition in which they skipped this portion of the experiment entirely. We predicted that relative to the participants in the control condition, participants in the partner investment condition would report greater commitment to their relationship. We did not have specific predictions about how the partner investment condition would compare with the own investment condition.

A second goal of this study was to test potential mechanisms of the association between perceptions of a partner's investments and commitment. Replicating and extending past research on trust (Wieselquist et al., 1999), we predicted that trust would be one mechanism through which perceived partner investments would motivate commitment. However, and more novel to the literature, we anticipated that gratitude would also emerge as a unique mediator of this effect even after accounting for people's feelings of trust. In addition to testing the roles of gratitude and trust in accounting for the

hypothesized effect, we also examined indebtedness as a possible alternative mechanism. Indebtedness is similar to gratitude in that it is elicited by prosocial behavior from others; however, is more likely to occur in the context of casual, exchange-based relationships, rather than in close, communal relationships (Shen, Wan, & Wyer, 2011). Thus, we did not expect that indebtedness would account for the effect of recalling a romantic partner's investments on commitment, over and above the explanatory effects of gratitude and trust.

Method

Participants. Participants in romantic relationships were recruited through Amazon.com's Mechanical Turk. A total of 221 individuals completed the questionnaire. Three participants were excluded because they were not currently involved in romantic relationships, and another two participants were excluded because they did not follow the instructions for the study. The final sample consisted of 216 participants (87 men, 125 women, 4 unknown), with an average age of 30 (range = 18–66). Participants had been in their relationships for an average of 5 years (range = 3 months to 43 years; median = 36 months). All participants were residents of the United States.

Procedure. Participants were first asked to complete the five-item satisfaction subscale from Rusbult's Investment Model scale (Rusbult, Martz, & Agnew, 1998). An example item is, "My relationship is close to ideal" ($\alpha = .95$). These items were measured on a seven-point scale (1 = *disagree completely* to 7 = *agree completely*).

Participants were next randomly assigned to one of three conditions: partner investment, own investment, or a control condition. Participants in the partner investment condition were asked to think about and list the various ways in which their current romantic partner had invested in the relationship. Then, participants were asked to think of a specific investment their partner had made that was particularly important or meaningful to the partner, and to describe why it was a significant investment for them to make. Participants in the own investment condition were given the same instructions, except that they were asked to think about their own investments rather than their romantic partner's investments. Participants in the control condition skipped this portion of the experiment. Next, all participants answered a series of questions about their relationship, each of which was measured on a seven-point scale (1 = *disagree completely* to 7 = *agree completely*).

Gratitude. Three items captured participants' current feelings of gratitude for their romantic partner (A. M. Gordon & Chen, 2010; A. M. Gordon et al., 2012), including "I feel very lucky to have my partner in my life," "I feel appreciative of my partner," and "I am struck with a sense of awe and wonder that my partner is in my life" ($\alpha = .91$).

Trust. Three items were selected from the Rempel, Holmes, and Zanna (1985) measure to capture participants' feelings of trust in their romantic partner, including "I can count on my partner to be concerned about my welfare," "I can rely on my partner to keep the promises he/she makes to me," and "I usually know how my partner is going to act. He/she can be counted on" ($\alpha = .87$).

Indebtedness. Three items were adapted from Shen, Wan, and Wyer (2011) to capture participants' feelings of indebtedness toward their romantic partner: "I feel indebted to my partner for everything he/she does for me," "I feel obligated toward my partner to persevere with this relationship," and "I feel that I owe it to my partner to give this relationship my best shot" ($\alpha = .81$).

Commitment. We used a "state" version of the three-item commitment subscale of the Perceived Relationship Quality Components questionnaire (Fletcher, Simpson, & Thomas, 2000) to capture participants' motivation to maintain their relationships. The three items used were, "At this moment, how committed are you to your relationship?" "At this moment, how dedicated are you to this relationship?" and "At this moment, how devoted are you to your relationship?" ($\alpha = .97$).

Upon completion, participants were probed for suspicion, and were then debriefed.

Results

Our first hypothesis was that participants in the partner investment condition would feel more committed to their relationships, relative to those in the own investment or no-recall control conditions. Results of a one-way ANOVA revealed that the recall manipulation had a significant overall effect on commitment to the relationship, $F(2, 213) = 3.93, p = .02$. To examine differences across experimental conditions, we conducted least significant difference post hoc tests. The results of these tests are shown in Table 1. As hypothesized, participants who recalled their partner's investments were significantly more committed to their relationships compared with those who recalled their own investments, as well compared with those in the no-recall control condition. Notably, people who recalled their own investments were not significantly more committed to their relationships than those in the control condition, a point to which we will return in the section "General Discussion."

Our second hypothesis was that the association between perceptions of a partner's investments and own commitment to the relationship would be mediated by gratitude and trust. We tested this hypothesis using a bootstrapping procedure (Preacher & Hayes, 2008), and we generated a 95% confidence interval for the indirect effect with 5,000 resamples. Significant mediation is indicated when the upper and lower

Table 1. Study I Post Hoc Tests for One-Way Analysis of Variance Between Own Investment Recall Condition, Partner Investment Recall Condition, and Control Condition on Relationship Variables of Interest.

	Control condition M	Own investment condition M	Partner investment condition M	Control vs. own investment p values	Control vs. partner investment p values	Own vs. partner investment p values
Commitment	6.14	6.36	6.65	.23	.006	.16
Gratitude	5.92	5.94	6.33	.93	.05	.09
Trust	5.90	5.81	6.31	.65	.03	.02
Indebtedness	5.09	5.40	5.57	.18	.03	.48

Table 2. Study I Simultaneous Mediation Effects of Gratitude and Trust on the Association Between Condition (Partner Investment Recall Versus Other Conditions) and Romantic Commitment.

	Point estimate of indirect effect	SE	BCa 95% CI	
			Lower	Upper
Gratitude	.2197	.0929	.0703	.4333
Trust	.0980	.0502	.0250	.2242
Total	.3176	.1179	.1106	.5793

Note. BCa, bias corrected and accelerated, 5000 bootstrap samples. Confidence intervals containing zero are interpreted as not significant.

limits of the confidence interval do not include zero. We compared the participants in the partner investment recall condition with those in the own investment condition and the control condition combined. Experimental condition (partner investment vs. the two other conditions) was entered as the independent variable. Gratitude and trust were entered as simultaneous mediators. Commitment was entered as the dependent variable.

The results of these mediation analyses are shown in Table 2 and in Figure 1. Consistent with previous research, stronger feelings of trust in the romantic partner mediated the effect of partner investments on relationship commitment ($b = .10, SE = .05, CI = [.02, .23]$). However, even when accounting for trust as a mediator, gratitude also significantly mediated the effect of the romantic partner's investments on people's own commitment ($b = .22, SE = .09, CI = [.07, .44]$). That is, thinking about a partner's investments elicited feelings of trust as well as feelings of gratitude, both of which, in turn, increased people's own commitment to their relationship.

Additional analyses. We next conducted these analyses again comparing the partner investment condition with the control condition without the own investment condition. Gratitude ($b = .27, SE = .13, CI = [.04, .55]$) and trust ($b = .08, SE = .06, CI = [.01, .25]$) emerged as significant, simultaneous mediators of the effects of experimental condition on relationship commitment. We further tested the effects comparing the own and partner investment conditions with one another without the control condition. Once again, we replicated our

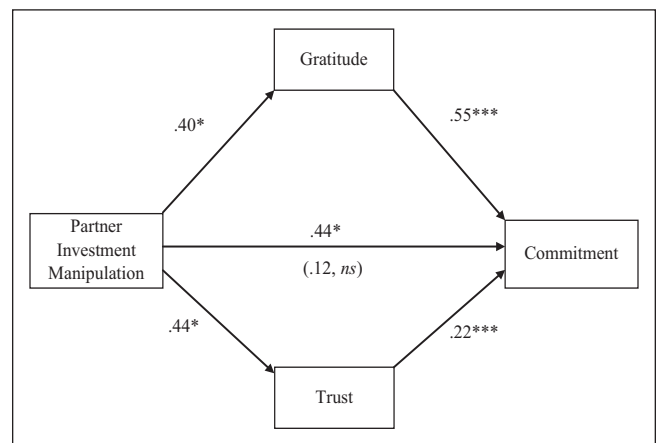


Figure 1. Gratitude and trust mediate the association between perceptions of partner investments and own motivation to invest (study 1).

Note. All numbers are unstandardized regression coefficients. * $p < .05$. ** $p < .01$. *** $p < .001$.

effects for gratitude ($b = .10, SE = .07, CI = [.01, .32]$) and trust ($b = .15, SE = .09, CI = [.02, .38]$).

We further conducted a bootstrapping analysis with indebtedness included in the model. Indebtedness did not mediate the association between condition and commitment ($b = .02, SE = .02, CI = [-.01, .10]$). Most critically, the mediational effects of trust ($b = .09, SE = .05, CI [.02, .22]$) and gratitude ($b = .21, SE = .09, CI = [.06, .41]$) remained significant above and beyond indebtedness. Thus, these effects could not be attributed to the alternative explanation that thinking about a romantic partner's investments makes people feel indebted to their partners, thus motivating them to commit to their relationships.

We next tested for moderations by gender. We found that gender did not moderate the effects of the manipulation on either commitment, $F(2, 206) = 1.21, p = .30$, or gratitude, $F(2, 206) = .46, p = .63$, suggesting that these effects extended to men and women in our sample.

The role of satisfaction. We next wanted to explore the possibility that gratitude and trust were simply proxies for relationship satisfaction. To test this, we conducted a bootstrapping analysis with satisfaction included as a control

variable. The partner investment manipulation still had a significant total effect on participants' feelings of commitment toward their partners ($b = .44$, $SE = .17$, $p = .01$) that was significantly mediated by trust ($b = .08$, $SE = .05$, $CI = [.009, .21]$) and gratitude ($b = .19$, $SE = .08$, $CI = [.05, .40]$).

In addition, we wanted to examine whether our effect extends even to individuals who are less satisfied with their relationships. That is, can perceived partner investments motivate commitment even among individuals whose relationships are relatively unfulfilling? To test this, we included satisfaction as a potential moderator of the effect using multiple regression. We found a significant moderation of satisfaction and condition (partner investment vs. controls) on commitment ($\beta = -.18$, $SE = .14$, $p = .001$). Simple effects analyses conducted at one standard deviation above and below the mean in satisfaction (Aiken & West, 1991) showed that the effect of the partner investment recall manipulation on commitment only extended to participants who were relatively *less* satisfied with their relationships ($\beta = .33$, $SE = .19$, $p < .001$) and not to participants who were relatively more satisfied with their relationships ($\beta = -.03$, $SE = .18$, $p = .72$). Satisfaction also significantly moderated the effect of the manipulation on gratitude ($\beta = -.24$, $SE = .12$, $p < .001$), such that the effect of the manipulation on gratitude extended to participants who were less satisfied ($\beta = .28$, $SE = .17$, $p < .001$), but not to those who were more satisfied ($\beta = -.05$, $SE = .16$, $p = .40$). A bootstrapping analysis revealed a significant mediated moderation, such that the moderation between satisfaction and the partner investment manipulation on commitment was significantly mediated by gratitude ($b = -.20$, $SE = .08$, $CI = [-.39, -.07]$), although not by trust ($b = -.02$, $SE = .03$, $CI = [-.11, .03]$). In other words, the effects of the present study *only* extended to participants who were relatively less satisfied with their relationships; they did not extend to those who were relatively more satisfied.

Discussion

Altogether, the results of Study 1 demonstrate a causal link between perceived partner investments and own commitment such that people who thought about their romantic partner's past investments felt more committed to their relationship, relative to those who thought about their own investments or to those in the no-recall control condition. Furthermore, we identified two mechanisms of this association. Consistent with previous research on pro-relationship behavior (Wieselquist et al., 1999), when participants thought about their romantic partner's investments into the relationship, they experienced greater feelings of trust, which in turn predicted stronger feelings of commitment. More novel to the literature, thinking about the romantic partner's investments also elicited feelings of gratitude, which in turn increased people's own commitment to the relationship. These findings suggest that in addition to a trust-based pathway between partner investments and own commitment,

there is also a gratitude-based pathway in which thinking about a partner's investments heightens people's awareness of their partner's value and makes people feel more grateful to have their partner in their life. We also ruled out indebtedness as an alternative explanation for this effect.

Although we did not predict these effects, we also found that our key effects were moderated by satisfaction. The effects of the partner investment recall manipulation on gratitude, and subsequently, commitment, only extended to relatively *less* satisfied individuals. Thus, these results suggest that perceiving a partner as invested in a relationship may be a particularly strong motivator of gratitude and commitment for people who feel relatively less satisfied with their romantic relationships. Since these findings were unexpected, we wanted to see if they would replicate in our next two studies before drawing conclusions about whether our effects depend on people's levels of relationship satisfaction.

Study 2

Study 1 provided initial evidence that perceptions of a partner's investments motivate further commitment to the relationship. Furthermore, we demonstrated that this association is partially mediated by gratitude. In Study 2, we sought to replicate these effects in day-to-day life using a daily experience design with a 9-month longitudinal follow-up. Specifically, we asked participants about their perceptions of their partners' investments each day for 7 days. The perceived investments made over this 1-week period were used to create an index of perceptions of a romantic partner's investments. Capturing perceptions of investment behaviors on a daily basis, rather than with a cross-sectional measure of general perceptions, has the advantage of minimizing retrospective bias (Bolger, Davis, & Rafaeli, 2003).

In Study 1, we measured feelings of commitment at a single time point following an experimental manipulation. In Study 2, we wanted to test whether perceiving one's partner to be more invested leads to increases in commitment over time. To test this, we measured commitment twice: at baseline, and 9 months following the daily experience component of the study. We predicted that people who perceive their partners as more invested in daily life will feel more grateful for their partners, and these daily feelings of gratitude will, in turn, promote increases in commitment to the relationship over a longer period of time.

Method

Participants and procedure. Participants were recruited through psychology courses at the University of California, Berkeley. A total of 99 undergraduates (83 women, 16 men) who were currently in romantic relationships completed the baseline questionnaire and daily experience portions of the study, and 51 (52%) of these participants completed the 9-month follow-up. Out of those participants, 15 were no

Table 3. Results of Study 2 Regression Analyses.

Predictor	Commitment at follow-up			Daily gratitude		
	β	SE	<i>p</i>	β	SE	<i>p</i>
Model 1						
Baseline commitment	.30	.25	.28	.20	.04	.01
Perceived partner investments	.36	.27	.03	.63	.07	<.001
Model 2						
Baseline commitment	.11	.26	.54			
Perceived partner investments	.11	.31	.48			
Daily gratitude	.47	.41	.03			

longer in their relationships, leaving a total of 36 participants (31 women, 5 men) with a mean age of 20 at baseline (range = 18-30, $SD = 2.0$). The mean relationship length at baseline was one and a half years (range = 1 month to more than 5 years, $SD = 15.4$ months).

As part of a larger study, participants completed online questionnaires that included demographic questions and a baseline measure of commitment. They next complete an online daily diary survey each night for seven consecutive nights. As part of the daily diary, participants answered questions about their perceptions of their partner's investment in the relationship that day, as well as their own feelings of gratitude and satisfaction. Participants were sent email reminders each night between 8pm and 10pm. Diaries completed before 5 p.m. or after 6 a.m. were not included in the final analyses because participants' reports may not have accurately reflected their experiences that day. The 36 participants who were still in their relationships at the follow-up completed 148 diaries on time. Participants completed between two and seven diaries on time, with 86% completing five or more diaries on time.

Nine months after completing the background survey, we recontacted the participants and provided them with a link to an online follow-up survey in which they reported on their current feelings of commitment to their relationship.

Baseline and follow-up measures of relationship quality. Relationship commitment was measured with a standard seven-item scale (Rusbult et al., 1998). Participants completed items such as "I want our relationship to last for a very long time" on nine-point scales (1 = *do not agree at all* to 9 = *agree completely*). Commitment was assessed at baseline ($\alpha = .90$) and again at the 9-month follow-up ($\alpha = .91$).

Daily measures. Each day, participants reported their perceived partner investments by responding to the question "Today, did your partner have a lot invested in your relationship?" Participants also reported their gratitude each day by rating their agreement with the item "Overall, I felt appreciative of who my partner was as a person." Both items were measured on five-point scales (1 = *not at all* to 5 = *completely*).

very true). We also assessed daily relationship satisfaction with the item "Today, I think my relationship is . . ." (1 = *Terrible* to 5 = *Terrific*). Because we were interested in the effects of perceived partner investments on commitment over the course of 9 months, we created aggregated scores of perceived partner investments and gratitude across the 7 days to yield a single score on perceived partner investments and gratitude for each participant.

Results and Discussion

Our first hypothesis was that the more people thought that their romantic partner had invested into the relationship over the course of a 1-week period, the greater increases in relationship commitment they would experience from the baseline of the study to 9 months later. To test this hypothesis, we entered the aggregate score of perceived partner investments as a predictor of commitment using multiple regression. In all analyses, we controlled for participants' baseline levels of commitment so that the resulting analyses would reflect changes in commitment over a 9-month period of time. Replicating and extending the results of our first study, perceived partner investments over a 7-day period was associated with greater relationship commitment 9 months later controlling for participants' own levels of commitment at baseline (see Model 1 in Table 3). That is, the more people thought that their partner was invested in the relationship over the course of the daily diary study, the greater increases in commitment they reported over a 9-month period.

Our second hypothesis was that gratitude would mediate the association between perceived partner investments and increases in commitment over time. As shown in Model 2 in Table 3, perceived partner investments were significantly associated with daily gratitude toward one's romantic partner. Furthermore and shown in Model 3 in Table 3, when perceived partner frequency of investment and gratitude were entered simultaneously, gratitude predicted increases in commitment from baseline to the 9-month follow-up. Results of bootstrapping analyses revealed that gratitude significantly mediated the link between perceived partner investments and increases in commitment over time, $CI = [.09, .95]$; direct

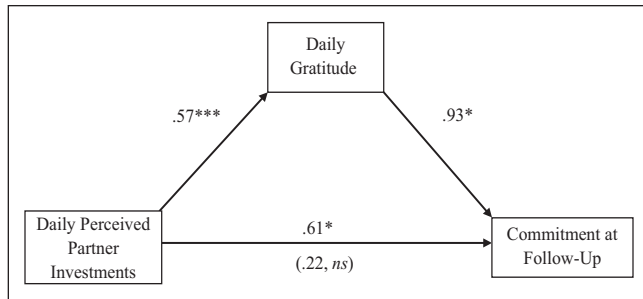


Figure 2. Gratitude mediates the association between daily perceptions of the partner investments and own commitment at 9-month follow-up (Study 2).

Note. All numbers are unstandardized regression coefficients. This analysis controls for commitment at baseline.

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

effect = .13, $p = .48$. This mediation model is depicted in Figure 2. In short, participants who thought that their partners were heavily invested into the relationships over the week-long diary felt more grateful toward their partners across the course of the week, in turn leading to increased commitment to the relationship 9 months later.

We next tested whether these effects could be attributed to differences in relationship satisfaction across the daily diary. We found that perceived partner investments significantly predicted gratitude ($\beta = .47$, $SE = .09$, $p = .001$) and change in commitment ($\beta = .47$, $SE = .25$, $p = .01$) when satisfaction was included in the model in addition to baseline commitment. Furthermore, satisfaction did not moderate the effects of perceived partner investments on either daily gratitude ($\beta = -.16$, $SE = .08$, $p = .26$) or commitment at follow-up ($\beta = .20$, $SE = .23$, $p = .36$). Unfortunately, this sample did not include enough men ($n = 5$) to meaningfully test for gender differences.

In sum, Study 2 replicated and extended the results from Study 1 by providing further evidence that perceiving a partner as being highly invested in a relationship promotes increased commitment. Participants who perceived that their partners were more invested across 7 days experienced increases in commitment to their relationship 9 months later. Moreover, these boosts in commitment were due to the fact that participants felt more grateful for partners whom they perceived as more invested. Notably, Study 2 did not replicate the moderation by satisfaction found in Study 1. In this sample, participants with higher and lower relative satisfaction levels were more grateful for, and committed to, their partners when they perceived those partners to be more invested in the relationship.

Study 3

Our first two studies provided evidence for the role of perceived partner investments in shaping people's feelings of commitment to their relationships. Furthermore, both

studies provided evidence for the role of gratitude as a mechanism of these effects. In Study 3, we wanted to replicate these effects with a larger sample, and with one key modification to the design. Studies 1 and 2 both examined global representations of perceived partner investments, rather than concrete, specific instances of investments into the relationship. Research by Neff and Karney (2005) has shown that global representations of romantic partners are not always based on the partners' specific qualities. Similarly, although people experience gratitude in response to the global perception that their partner is invested in the relationship (Studies 1 and 2), they may not experience gratitude in response to specific, concrete investments that their partners make. In Study 3, we wanted to examine whether people feel more grateful for their partners in response to their partners' specific romantic investments. To test this hypothesis, perceived partner investments were measured as the frequency with which, over a 14-day period, the participant perceived their partner to have made a sacrifice for them. We predicted that these specific instances of perceived partner investment—whereby the partner has given something up for the sake of the relationship—would predict stronger feelings of gratitude, which would in turn lead to increases in commitment over time.

Study 3 was a 14-day daily experience study with a 3-month longitudinal component. We recruited both partners and asked them each to complete an online questionnaire about their relationship. Next, we collected daily diaries of their investment behavior over a 2-week period. Finally, we recontacted participants 3 months later. Whereas in Study 2 we operationalized gratitude as daily feelings of gratitude toward the partner, in Study 3 we examined changes in gratitude over time. We predicted that perceived partner investments over a 2-week period would predict increased gratitude over time. In turn, we expected that increased gratitude at the 3-month follow-up would predict increases in commitment to the relationship over time. In addition, whereas Study 2 used only baseline commitment as a control variable, Study 3 also included daily perceptions of one's own investment behavior. We predicted that the effects of perceived partner investments would emerge above and beyond one's own investment behavior.

Method

Participants and procedure. Participants were recruited from a larger study of romantic couples (Impett et al., 2010) from the San Francisco Bay Area through the use of paper flyers and online advertisements posted on Craigslist.org. For the study, 80 couples were recruited, but 11 couples were removed from the analyses because one member of the couple did not complete the initial survey or we could not properly match a participant's initial survey to his or her daily experience records, leaving our final sample at 69 couples. The couples had been dating from 6 months to 30 years

(Median = 16 months; $SD = 46.6$ months); 48% of the couples were cohabitating.

Both participants individually completed an initial online survey with measures of relationship quality. Then, they came to the lab to receive training in how to complete the daily experience portion of the study. Both members were asked to complete a brief online survey for 14 consecutive nights beginning the day of the laboratory session. We emphasized that each diary should be completed in private, that the partners should not discuss their answers with one another, and that we would never reveal their responses to each other. Participants completed an average of 12.2 (out of 14) days per person as determined by an automatic timestamp generated by the website. Three months after completing their last diary, each member of the couple completed a 10-min online follow-up survey. Of the 138 participants who provided daily experience data, 104 (75%) participants completed the follow-up survey.

Background and follow-up measures of relationship quality. Commitment was assessed in the baseline survey ($\alpha = .93$) and again at the 3-month follow-up ($\alpha = .93$) with the same commitment measure used in Study 2. Relationship satisfaction was measured with five items from the Rusbult et al. (1998) scale at baseline ($\alpha = .90$) and at the 3-month follow-up ($\alpha = .92$). Gratitude was measured at baseline and at the 3-month follow-up with the 11-item “appreciative” subscale of the Appreciation in Relationships Scale (A. M. Gordon et al., 2012). Participants responded to such questions as “I often tell my partner how much I appreciate her/him” on seven-point scales ($\alpha = .82$).

Daily relationship investment behavior. Each day, participants answered questions designed to assess their daily romantic relationship investment behavior, operationalized in this study as daily sacrifice. Based on previous research on sacrifice (e.g., Impett, Gable, & Peplau, 2005), to gather a measure of *own daily investment* participants answered the question: “Today, did you do anything that you did not particularly want to do for your partner? Or, did you give up something that you did want to do for the sake of your partner?” Participants also responded to an adapted version of this question to provide a measure of *perceptions of a romantic partner’s daily investments* into the relationship. As in Study 2, we aggregated participants’ scores from the daily diary to create composite measures of frequency of own daily investment ($M = 3.0$ sacrifices; $SD = 2.7$; range = 0-11) and perceived frequency of partner’s daily investment ($M = 2.6$ sacrifices; $SD = 2.8$; range = 0-11).

Results and Discussion

Our first hypothesis was that frequency of perceived partner daily investments, as assessed across 14 days, would predict increases in relationship commitment from the baseline of

the study to the 3-month follow-up. We used multilevel modeling in PASW 20.0 to address the nested nature of our dyadic data (i.e., partners nested within couples). The analyses we report control for two factors. First, we controlled for participants’ baseline levels of commitment to their romantic relationships so that the resulting analyses would reflect changes in commitment over a 3-month period of time as a function of perceptions of a romantic partner’s daily investments. Second, because research shows that people project their own feelings and behaviors onto their perceptions of how their partners think and act (e.g., Lemay & Clark, 2008), we also controlled for people’s own daily investments, so that the results would reflect the unique contributions of perceived partner investments above and beyond the contribution of one’s own daily investments into the relationship.

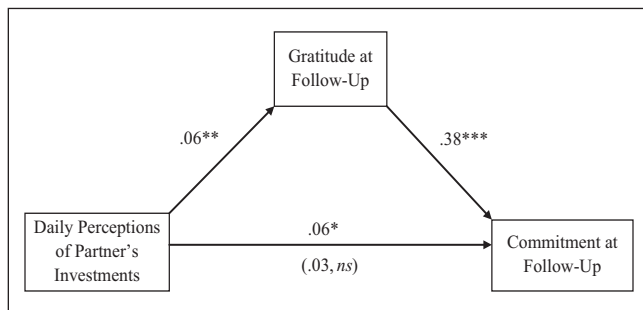
Replicating the results of our first two studies and as shown in Model 1 in Table 4, perceived frequency of partner investment over a 2-week period was associated with greater relationship commitment at the 3-month follow-up controlling for participants’ own self-reported frequency of daily investment as well as their levels of commitment at baseline. That is, the more frequently people thought that their partner invested into the relationship over the course of the 2-week study, the greater increases in commitment they reported over a 3-month period of time. Own investment frequency did not significantly predict commitment to the relationship 3 months later.

Our second hypothesis was that gratitude would mediate the effect of perceived partner investments on changes in commitment. In line with this hypothesis and as shown in Model 2 in Table 4, perceiving one’s partner as having made more investments into the relationship was associated with gratitude toward one’s partner 3 months later controlling for gratitude at the baseline of the study. Furthermore, when perceived partner investments and gratitude at follow-up were entered simultaneously, gratitude predicted higher commitment at follow-up, controlling for gratitude and commitment at baseline. To test for mediation, we used the Monte Carlo Method for Assessing Mediation (Selig & Preacher, 2008) to generate a 95% confidence interval for the indirect effect with 20,000 resamples. These analyses, shown in Model 3 in Table 4, revealed that when perceived partner frequency of investment and gratitude were entered simultaneously, feelings of gratitude predicted increases in commitment from baseline to the 3-month follow-up. As shown in Figure 3, subsequent analyses revealed that gratitude significantly mediated the link between perceived partner frequency of sacrifice and increases in commitment over time ($CI = [.005, .05]$; direct effect = $.03$, $SE = .03$, $p = .25$). In short, participants who thought that their partners invested a great deal into their relationships over the 2-week diary felt more grateful toward their partner 3 months later, which in turn led them to increase their commitment to the relationship.

Because gratitude and commitment were both measured at the same two time-points in Study 3, we next sought to

Table 4. Results of Study 3 multi-level modelling analyses.

Predictor	Commitment at Follow-Up			Gratitude at Follow-Up		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Model 1						
Baseline Commitment	.65	.08	< .001			
Own Investment	-.04	.03	.16			
Perceived Partner Investments	.06	.03	.04			
Model 2						
Baseline Commitment				.04	.05	.46
Baseline Gratitude				.62	.08	< .001
Own Investment				-.04	.02	.04
Perceived Partner Investments				.05	.02	.003
Model 3						
Baseline Commitment	.56	.08	< .001			
Own Investment	-.01	.03	.72			
Perceived Partner Investments	.03	.03	.25			
Gratitude at Follow-Up	.37	.13	< .001			

**Figure 3.** Gratitude mediates the association between daily perceptions of the partner investments and own commitment at 3-month follow-up (Study 3).

Note. This analysis controls for commitment and gratitude at baseline, as well as daily perceptions of own investment. All numbers are unstandardized regression coefficients;

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

rule out an alternative causal model in which the order of these two variables was reversed. Commitment at follow-up did not significantly predict gratitude at follow-up ($b = .09$, $SE = .02$, $p = .12$) and the association between perceived partner investments and changes in gratitude remained significant when commitment at follow-up was included in the model ($b = .04$, $SE = .02$, $p = .02$). These additional results help to clarify that it is gratitude that mediates the association between perceived partner investments and commitment, rather than commitment mediating the association between perceived partner investment and gratitude.

We next tested whether these effects could be attributed to baseline differences in relationship satisfaction. We found that controlling for baseline satisfaction, perceived partner investments significantly predicted changes in gratitude ($b = .05$, $SE = .02$, $p = .003$) and changes in commitment ($b = .06$, $SE = .03$, $p = .04$). Furthermore, satisfaction

did not moderate the effects of perceived partner investments on either follow-up gratitude ($b = -.06$, $SE = .04$, $p = .11$) or follow-up commitment ($b = -.01$, $SE = .06$, $p = .88$). Finally, we tested for gender effects. We found that the effect of perceived partner investments on gratitude at follow-up was not moderated by gender ($b = .02$, $SE = .02$, $p = .29$), nor was the effect of perceived investments on commitment at follow-up moderated by gender ($b = .04$, $SE = .05$, $p = .37$), suggesting that these did not differ for men and women.

Overall, Study 3 replicated and extended the results from our first two studies, providing further support for the association between perception of a partner's investments and relationship commitment. Participants who perceived that their partners made more investments over a 2-week period experienced increased commitment to their relationship 3 months later, and this was due in part to increased feelings of gratitude for one's partner.

General Discussion

The three current studies provide compelling support for the role of a partner's investments in shaping people's feelings of commitment to their relationships. Specifically, participants who were reminded of their partners' investments reported feeling more committed to their relationships relative to participants who were reminded of their own investments or to those in a control condition (Study 1). People who perceived their partners to be more invested also reported increases in commitment over time (Studies 2 and 3). In all three studies, these effects were mediated by gratitude: Participants who felt that their partners were highly invested in their relationships felt more grateful for their partners, which, in turn, motivated them to further commit to their relationships. Notably, we replicated these effects with

multiple research methods (experimental, daily diary, and longitudinal designs), and with different operationalizations of partner investment (daily investment perceptions, global and concrete investment perceptions, and an experimental manipulation).

Implications for Investment Research

Building on past work that has examined reciprocity in terms of pro-relationship behaviors, our evidence suggests that decisions to commit to romantic relationships can be motivated specifically by people's perceptions that their romantic partner has invested in the relationship. Thus, our research is the first to directly show that people's own feelings of commitment are linked to the amount of resources that people feel their partner has placed into the relationship. The present work also identifies a new mechanism for the link between perceived partner investments and relationship commitment. Past work has focused on the role of security-based mechanisms to explain why one partner's pro-relationship acts might motivate the other partner to commit to the relationship (e.g., Murray & Holmes, 2009; Wieselquist et al., 1999). Specifically, researchers have argued that one partner's expressions of commitment make the other partner feel that it is less risky to commit to the relationship themselves. Indeed, our findings replicate this work, with trust emerging as a mediator of the association between perceived partner investments and commitment (Study 1). However, we also find evidence for an additional mechanism of this effect. Specifically, perceived partner investments inspire people to feel grateful for their partners, which in turn motivates increased commitment (Studies 1-3). In short, perceiving a partner as invested in the relationship not only makes people feel that it is safe to commit to the relationship, but also that they want to commit to the relationship.

Across studies, we found that even individuals who were less satisfied with their romantic relationships tended to respond to their partners' investments with increased commitment. These findings suggest that partners' investments may help to explain how individuals stay motivated to work through difficulties in their relationships. On the darker side, perceptions of partner investment may explain why some individuals choose to persist with chronically unfulfilling relationships (e.g., Slotter & Finkel, 2009). Furthermore research is needed to examine whether the motivational effects of perceived partner investments extend even to couples currently experiencing high levels of relational distress. Notably, we did find a significant satisfaction moderation in Study 1, such that the effects *only* extended to less satisfied individuals. However, this moderation did not replicate in Studies 2 and 3. This leads us to think that the effect was unique to the experimental design of Study 1. In particular, it is possible that highly satisfied individuals may have experienced a ceiling effect in Study 1, whereby

their gratitude, trust, and commitment could not be experimentally increased.

Implications for Gratitude Research

This series of studies adds to and extends previous research on gratitude in several key ways. A growing body of literature is now demonstrating the crucial role of gratitude in the maintenance of important social bonds including romantic relationships (e.g., Algoe et al., 2008, 2010; A. M. Gordon et al., 2012; Kubacka et al., 2011). Our work suggests that gratitude—as well as the relationship maintenance behavior that gratitude motivates—can be elicited by the perception that one's partner is invested in the relationship. Previous research on gratitude in relationships has focused on the benefits of experiencing and expressing gratitude. Less work has sought to identify the factors that elicit feelings of gratitude, particularly in the context of romantic relationships. The current set of studies begins to fill this gap in the literature by showing that placing resources into a romantic relationship, such as one's time, energy, emotions, and material goods, may be an effective way to elicit feelings of gratitude from a romantic partner.

All three studies suggested that gratitude was an important mediator of the effects even after accounting for people's current relationship satisfaction. These results are in line with past work on the distinction between satisfaction and gratitude (A. M. Gordon et al., 2012). Whereas satisfaction represents how well the relationship is meeting one's needs (e.g., Rusbult, 1980), gratitude represents how much one values the partner as a person (A. M. Gordon et al., 2012). Our findings show that when people see that their partners are trying to make their relationships work, they experience a stronger sense of gratitude for their partners. The gratitude spawned by their partners' efforts motivates people to stay committed to their relationships themselves, even if those relationships are not doing a particularly good job of meeting their needs. By uncovering these relationship processes, the present results help to further differentiate between the constructs of gratitude and satisfaction.

Future Directions

There are some limitations to the present work that should be addressed by future research. One such limitation is that, in Studies 1 and 2, we focused primarily on investments at a general level (i.e., the investment component of Rusbult's investment model; Rusbult et al., 1998), such that the actual content of the investment behavior was not specified. Although in Study 3 we examined investment at the concrete level, we focused only on sacrifices, which are a specific type of investment that may operate differently than other types of investments. One future direction would be to measure a broader range of investments and examine whether responses to the partner's investment differ according to the

type of investment the romantic partner makes. Past research has shown that different types of investments play unique roles in predicting commitment and relationship stability. For example, Goodfriend and Agnew (2008) found that intangible investments, such as emotional involvement, were a stronger predictor of relationship persistence than tangible investments, such as financial investments. Building on this work, we might expect to find that people feel grateful for a partner's intangible investments, and future research is needed to examine this possibility.

Future research should also examine the possible role of the partner's motivations for investing into the relationship. In particular, this work could benefit from an application of approach-avoidance theories of social motivation (see review by Gable & Impett, 2012). Past research on sacrifice has shown that people react more positively to their partners' sacrifices when they feel that their partner has sacrificed for approach as opposed to avoidance motives (Impett et al., 2005). In line with this work, we would expect that a romantic partner's approach-based investment behavior (e.g., genuinely wanting the relationship to develop) would elicit more gratitude than avoidance-based behavior (e.g., wanting to avoid conflict with the partner), and future research is needed to test this possibility.

This line of research may also benefit from parsing apart what *kind* of commitment is garnered from a partner by investing in the relationship. Recent research has made an important distinction between commitment as a desire to persist in the relationship, and commitment as an intention to maintain the relationship (Schoebi, Karney, & Bradbury, 2012). Schoebi et al. (2012) found that the latter kind of commitment—intention to maintain—is the type of commitment that is most likely to keep relationships stable irrespective of relationship satisfaction. It would be interesting to see whether that particular type of commitment is likely to increase as a function of a romantic partner's investments, as that finding would lend support to the idea that one partner's investments may motivate the other partner to persist with dissatisfying relationships.

In terms of the link between *own* investments and relationship commitment, a large body of research demonstrates that global perceptions of past investments made by the self are associated with future relationship commitment (Le & Agnew, 2003). However, in the current studies, whereas perceived partner investments motivated commitment, own investments did not. One possible reason for this discrepancy is potential differences between abstract versus concrete investments. Past research has identified the links between perceptions of global investment and later commitment (e.g., Rusbult, 1980), but has not examined the effects of short-term investment behaviors such as recalling concrete, specific investments (Study 1), or making small, daily investments into the relationship (Study 3) on future relationship commitment. It is possible that although perceiving

oneself to be invested at an abstract level promotes continued relationship maintenance in the long-term, reciprocity norms may motivate people who have recently made concrete investments into the relationship to hold back on further commitment in the short-term, so as not to end up being under-benefited. Indeed, research shows that people dislike feeling that they are more committed to their romantic partners than their partners are to them (Drigotas, Rusbult, & Verette, 1999). Follow-up research should examine the conditions under which previous investments into a relationship do and do not motivate future commitment.

Conclusion

In conclusion, our research demonstrates that a person who is perceived as putting more into a relationship is likely to have a partner who feels more strongly tied to the relationship. Although this stronger tie arises in part because a partner's investment signals that they can be trusted, the more novel contribution of this work is a demonstration that such investment provides rewards for which one is grateful. As such, this work suggests that partner investments motivate people to commit to their relationships not only because those investments generate feelings of safety and trust in the partner's regard, but because gratitude makes people want to invest to reap the benefits and pleasures of a rewarding, intimate connection.

Authors' Note

Research materials from the current set of studies are available by request from the corresponding author at samantha.joel@utoronto.ca.

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