

How can I thank you? Highlighting the benefactor's responsiveness or costs when expressing gratitude

Journal of Social and
Personal Relationships
2021, Vol. 38(2) 504–523

© The Author(s) 2020

Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0265407520966049
journals.sagepub.com/home/spr



Yoobin Park¹ , Mariko L. Visserman^{2,3}, Natalie M. Sisson²,
Bonnie M. Le⁴ , Jennifer E. Stellar², and Emily A. Impett² 

Abstract

Despite growing evidence that showing gratitude plays a powerful role in building social connections, little is known about how to best express gratitude to maximize its relational benefits. In this research, we examined how two key ways of expressing gratitude—conveying that the benefactor's kind action met one's needs (responsiveness-highlighting) and acknowledging how costly the action was (cost-highlighting)—impact benefactors' reactions to the gratitude and feelings about their relationship. Using observer ratings of gratitude expressions during couples' live interactions ($N = 111$ couples), and benefactors' self-reports across a 14-day experience sampling study ($N = 463$ daily reports), we found that responsiveness-highlighting was associated with benefactors' positive feelings about the gratitude expression and the relationship. In contrast, cost-highlighting had no such effect. These findings suggest that expressing gratitude in a way that highlights how responsive benefactors were may be critical to reaping the relational benefits of gratitude and have practical implications for improving couples' well-being.

Keywords

Communal motivation, communication, emotion expression, gratitude, romantic relationships

¹ University of Toronto, Canada

² University of Toronto Mississauga, Canada

³ York University, Canada

⁴ University of Rochester, USA

Corresponding author:

Yoobin Park, Department of Psychology, University of Toronto, 100 St. George Street, Toronto, ON, Canada M5S 3G3.

Email: yoobin.park@mail.utoronto.ca

Although meeting a romantic partner's needs or helping them reach their goals can be joyful in and of itself (Kogan et al., 2010; Orehek & Forest, 2016), receiving gratitude for the action can make the experience even more rewarding. Gratitude is a positive emotion that is evoked from "the perception that one has benefited from the costly, intentional, voluntary action of another person" (McCullough et al., 2008, p. 281).¹ It is considered as a motivator for prosocial behavior as its experience motivates people to reciprocate when a future opportunity to do so arises. The find-remind-bind theory of gratitude (Algoe, 2012) suggests that what serves a crucial role in this process, or the social functions of gratitude, are a beneficiary's expressions of their gratitude which signal that they value the relationship. However, gratitude expressions do not always elicit positive reactions from the benefactor. Instead, there are important boundary conditions for when gratitude expressions yield relational benefits. For example, studies have found that the positive effect of a gratitude expression on how a benefactor feels about the relationship depends on factors such as the perceived sincerity of the expression (Leong et al., 2019). This raises the important question of if there are ways of expressing gratitude that can elicit particularly positive reactions in a benefactor or that are more or less effective. In the present research, we examine how acknowledging the *responsiveness* (i.e., how much the benefactor's act has met the beneficiary's needs) and the *costs* (how costly the act was to the benefactor) when expressing gratitude shape how the benefactor perceives the gratitude and feels about their relationship.

To date, only one study has examined if a particular way of expressing gratitude elicits positive reactions from a benefactor in an established relationship (Algoe et al., 2016). In this study, researchers examined the extent to which romantic partners expressing gratitude engaged in "other-praising" behaviors, defined as verbal elaboration of the benefactor's praiseworthiness combined with non-verbal displays of affection. They found that the more the speaker engaged in other-praising behavior, the more positively the benefactor felt about their romantic partner and the relationship. Nevertheless, a crucial question remains as to the specific ways in which people praise the benefactor and importantly, the different benefits they may afford.

In the present research, we focus on two factors that may be embedded in the way people (directly or indirectly) convey that they praise the benefactor while expressing gratitude: acknowledging how much the benefactor's act met their needs (e.g., "I wouldn't have made it to the meeting on time if you didn't drop me off at the office today") and acknowledging the extent of the costs the benefactor incurred for them (e.g., "I know it was a hassle for you to drop me off at my office during rush hour"). Notably, both ways of expressing gratitude may elicit inferences of praise, but do so in a distinct manner. We propose that these two factors are particularly likely to be included in gratitude expressions as perceptions of a gesture intended to be *responsive* to one's needs that was *costly* to the benefactor are situational features relevant to the experience of gratitude (McCullough et al., 2008; Tesser et al., 1968), and people communicating their feelings often describe their antecedents or causes (observable even among 2-year-old children; Bretherton et al., 1986; Dunn et al., 1987).

It is conceivable that the responsiveness and costs highlighted in gratitude expressions each independently play an important role in how the benefactor perceives and reacts to gratitude expressions. A benefactor is likely to enjoy learning how responsive they have

been to their partner's needs since it is a primary goal when helping or sacrificing for a partner (Feeney & Collins, 2003; Impett & Gordon, 2010), and information signaling attainment of a goal tends to be accepted positively (Sheldon & Elliot, 1999). Particularly in romantic relationships, the goal attainment signaled by gratitude expressions (i.e., having been responsive) is highly valued (Clark et al., 2010). Accordingly, when expressers highlight the partner's responsiveness in expressing gratitude, benefactors are likely to accept the expressions favorably and feel satisfied with their relationship.

In addition, acknowledging the costs that a benefactor has incurred for the partner can also elicit positive reactions from the benefactor because people like to be recognized for their prosocial acts (McNeely & Meglino, 1994; Winterich et al., 2013). Indeed, people feel proud and valued when their efforts are noticed and recognized, and feel dissatisfied when they do not receive acknowledgment for having incurred costs to support their partner (Visserman et al., 2019). Further, by recognizing the negative experience the benefactor might have had to go through, cost-highlighting expressions can also make the benefactor feel understood, which can be satisfying (Gordon & Chen, 2016; Reis et al., 2017). In fact, even when people request that their partner makes a costly sacrifice, acknowledging the size of the sacrifice that a partner has to make has been associated with a partner engaging in more accommodating behavior such as suggesting ways they can help the requester (Farrell et al., 2016).

Therefore, we investigate if and to what degree conveying that the benefactor has met one's needs and recognizing the costs the benefactor incurred in the process are independently important when expressing gratitude. Given previous research demonstrating that gratitude expressions can elicit negative responses (e.g., by signaling interpersonal distance; Zhang et al., 2018), we also left open the possibility that either of these ways of expressing gratitude may backfire. For example, although romantic partners typically idealize non-contingent giving and receiving with no expectation for immediate reciprocation (Clark et al., 2010), empirical findings have shown that a sense of equity in relationships is also important, and that inequity in the direction of underbenefiting (i.e., feeling as though one receives fewer benefits from the relationship than their partner) can be particularly detrimental for the person's relationship quality (Lan et al., 2017; Sprecher, 2018). As such, if responsiveness- or cost-highlighting gratitude expressions instill a sense that the benefactor is being underbenefitted, it is possible that either could cause discomfort and conflicting feelings about the relationship for the benefactor.

Accordingly, the present research examined how positively or negatively a benefactor reacts to a partner's gratitude expression as a function of the extent to which the beneficiary embedded responsiveness- and cost-highlighting in their gratitude expressions using two different methodologies. First, we examined couples' face-to-face interactions and had independent observers code the gratitude expressions. We tested how the observer-rated speaker's (beneficiary's) responsiveness- and cost-highlighting gratitude expressions were associated with the listener's (benefactor's) reports of their feelings toward the gratitude expression and the interaction in general. However, although observing couples discussing a particular given topic is a widely used method and its value has been supported to some extent (see Heyman, 2001), it nevertheless comes with a limitation that we cannot be confident about how representative this researcher-initiated conversation is of people's typical interactions (i.e., questionable external

validity). Further, in our research wherein how the benefactor interpreted the beneficiary's gratitude expressions is of particular importance, relying solely on how the third-party (coders) evaluates the degree of responsiveness- and cost-highlighting embedded in the gratitude might not be sufficient.

In an attempt to address these concerns, our second approach to capturing the effects of couples' gratitude expressions involved utilizing the couples' daily diaries in which the benefactors reported their own perceptions of the gratitude they received. Specifically, we followed couples in a 14-day daily experience study and examined days when couples experienced conflicts of interests and resolved them by sacrificing their own self-interest for their partner. As these instances are when couples are highly likely to express gratitude (although not the *only* instances), we were able to examine how couples exchange gratitude without explicitly instructing them to think about grateful instances as in the lab conversation. We tested whether a benefactor's perceptions of responsiveness- and cost-highlighting within gratitude expressions had similar effects as in the face-to-face interactions on their feelings toward the expression and satisfaction with the relationship (i.e., conceptually replicating findings from the laboratory setting in couples' natural environment).

The present research

We used lab conversation and daily diary portions of a multi-part study to examine how benefactors experience the responsiveness- and cost-highlighting embedded in gratitude expressions. In both sets of analyses (lab conversation and diary), we also conducted additional analyses to rule out alternative explanations for any effects we find. Specifically, in the lab conversation data, we ran a model controlling for coders' ratings of affection a speaker displayed to ensure that their judgment of gratitude expressions (responsiveness- and/or cost-highlighting) was not confounded with general affectionate behaviors of the speaker. In the diary portion of the analyses, we additionally controlled for daily positive affect to rule out the possibility that feeling generally positive affected both the way participants perceive their partner's gratitude expressions and how they feel about the expressions or about the relationship that day (see Shiota et al., 2017 for the importance of differentiating positive emotions). We also controlled for participants' ratings of the costliness of their actions as they may perceive and react to gratitude in systematically different ways based on the cost of the act that may have driven our effects of interest.

Finally, we also examined a potential moderating role of relationship length in the links between gratitude expressions and outcomes. Previous research has shown that as the relationship matures, communal actions become a "decisional default" (Kammrath et al., 2015), and when partners are highly committed to their relationships (i.e., which is typically the case in longer relationships), enacting nice acts for the partner (e.g., sacrifices) is perceived as less costly or harmful to self (Cao et al., 2017; Whitton et al., 2007). Given such changes in the way the benefactors come to view their own nice acts, it is possible that their expectations for or responses to a partner's (certain types of) gratitude expressions for the acts also change. For example, it might be those in shorter

(vs. longer) relationships for whom the costs of their kind acts might be more salient, and thus the extent to which a partner acknowledges costs might be of greater importance.

Method

Participants and procedure

We recruited a community sample of 111 couples through online advertisements (Reddit, Kijiji) and advertisements posted in public locations (e.g., libraries) in a major Canadian city. Although the initial eligibility criteria for recruitment were that the couples had been in a relationship for at least 3 years, we loosened this restriction due to the difficulty in recruitment and time constraint (as noted below, the shortest relationship length in the final sample was 1 year). The sample size was determined a priori based on the available budget. For the laboratory portion of the analyses, we used data from 194 individuals (94 men, 96 women, 4 unidentified) who had all the primary variables of interest available. Power estimation based on Monte Carlo simulation (1,000 repetitions) using the R package SIMR (Arend & Schäfer, 2019; Green & MacLeod, 2016) showed that this sample size provided 88% power to detect a standardized level-1 effect of medium size (.30) in two-level models. The study was approved by research ethics board at the University of Toronto.

Participants were 26.94 years old on average ($SD = 7.34$; $range = 18-57$) and had been in a relationship for an average of 4 years and 6 months ($SD = 3$ years and 7 months; $range = 1-23$ years). Fifty-four percent of the final sample met the initial criteria of having been together for more than 3 years. Most couples were heterosexual (three same-sex couples) and 146 individuals were not married. Ninety-five individuals reported that they were currently living with their partner. The sample was culturally diverse, with 65 participants identifying as Western European, 29 as South Asian, 28 as East Asian, 27 as Eastern European, 19 as Caribbean, 14 as South American, 12 as South East Asian, 6 as Middle Eastern, 6 as Native American, 5 as African, and there were 16 participants who identified as other (multiple responses allowed). As their highest achieved education level, three participants indicated not having finished high school, 77 completed high school/some university, 12 completed an Associates/vocational/2-year degree, 76 completed Bachelors, 20 Masters, and three PhD/MD. Participants indicated their personal gross income for the previous year in the following categories: less than \$10,000 ($n = 63$), \$10,000 – \$14,999 ($n = 21$), \$15,000 – \$19,999 ($n = 12$), \$20,000 – \$24,999 ($n = 9$), \$25,000 – \$29,999 ($n = 10$), \$30,000 – \$39,999 ($n = 18$), \$40,000 – \$49,000 ($n = 17$), \$50,000 – \$59,999 ($n = 12$), \$60,000 – \$74,999 ($n = 15$), \$75,000 – \$99,999 ($n = 10$), \$100,000 – \$149,999 ($n = 4$), and \$200,000 – \$249,999 ($n = 1$). Participants were compensated separately for the background (\$15) and in-lab (\$30) portions of the study. The payment for the diary study was prorated based on the number of daily surveys completed: 1–3 days (\$5), 4–6 days (\$15); 7–8 days (\$20); 9–11 days (\$30); 12–14 days (\$40).

Participating couples first completed an online questionnaire and were invited to the lab to participate in a conversation study. All couples engaged in conversations about three different topics. The final conversation was a gratitude conversation in which couples were instructed to talk about something nice or kind that the partner has done

that made them feel particularly thankful or appreciative. They were told that the partner's gesture could be something that happened before but continues to make them grateful, or something currently going on in their relationship. Each partner had one minute to talk about what they were grateful for and they took turns being the speaker. Thus, speakers can be considered as beneficiaries and listeners as benefactors. Couples' interactions were videotaped using two cameras, each facing one partner, so that we have separate videos for each partner. The entire conversation procedure for this study was adapted from a conversational structure used in past research (Fritz et al., 2003). Participants indicated that the conversational structure felt natural to them in the pilot testing. Participants received instructions about the 14-day diary study before leaving and began the diary portion of the study on the following day.

For the diary portion of the analyses, we analyzed data from 185 individuals who had reports on our primary variables of interest on at least one day. Participants completed a survey every evening that included a question asking if their needs, interests, or desires conflicted with their partner's that day. If they indicated there was a conflict, they were asked to describe what it was about and how they handled the situation (adapted from Righetti et al., 2016). They were given five options: "I sacrificed what I wanted," "My partner sacrificed what they wanted," "We compromised," "At least one of us had the opportunity to sacrifice, but neither of us did," and "There was no opportunity to sacrifice, and we each did our own thing." For the present analyses, we only used days when participants indicated that they sacrificed or that they compromised with the partner given that items about the partner's gratitude expression were relevant and presented only on those days. We combined the days in order to increase our statistical power.² Participants had three days of sacrifice or compromise on average, and a total of 463 daily reports were used for the present analyses.

Lab measures

Following the conversation, listeners of the partner's gratitude expression completed a short questionnaire about the conversation. Specifically, they responded to two items assessing how they felt about the partner's gratitude expression: "Their gratitude made me feel good" (*gratitude-specific positivity*; $M = 6.36$, $SD = 1.00$) and "Their gratitude made me feel bad/uncomfortable/annoyed" (*gratitude-specific negativity*, adapted from Zhang et al., 2018; $M = 1.71$, $SD = 1.49$). They also responded to two items assessing *positive relationship quality* ("I felt satisfied with my relationship in this discussion" and "I felt close to my partner in this discussion"; $\alpha = .97$; $M = 6.38$, $SD = 1.05$) and *negative relationship quality* ("I felt there was tension between my partner and me in this discussion" and "My partner and I experienced conflict in this discussion"; Impett et al., 2013; $\alpha = .83$; $M = 1.50$; $SD = 1.25$). All items were assessed on scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Coded procedure and measures

A team of five research assistants who were blind to the purpose of coding watched videos of the couples' conversations and rated the speaker's gratitude expression on the

degree of responsiveness- and cost-highlighting. Prior to coding, they were trained by the first author in two separate sessions using a coding scheme the authors had developed together. Coders were instructed to make a holistic judgment using both verbal and non-verbal cues, and in the training session (which involved watching a small random set of videos), a high degree of consensus was established. All coders then worked independently to apply the codes to the videos. Each coder watched the videos once to code for responsiveness-highlighting, then again to code for cost-highlighting. Each video only showed the speaker's side; thus, coders could not match the partners and each partner was judged independent of the other partner's score. All coders completed coding prior to any data analyses.

Responsiveness-highlighting gratitude expression. Coders rated the degree to which the speaker expressed that their partner was responsive to their needs with their kind deed(s) on a 7-point scale, ranging from 1 (*not at all*) to 7 (*very much*).³ Some examples of expressions that received a high score on responsiveness-highlighting included: "... that was probably the most stressful week of my entire degree [...] I'm so happy that you were there when I needed you at 4:30 in the morning [...] I don't know what I would do if I didn't have you there that day"; "I am very grateful that you always support me in my horseback riding stuff [...] You know, horseback riding is something that I really enjoy, so I appreciate the fact that you are supportive and you don't complain about the amount of time and money that I spend on horseback riding so that makes me feel happy. [...] it's something I really enjoy and it's really important to me." Coders' ratings were highly consistent and were averaged ($ICC[2,5] = .77$; $M = 4.13$, $SD = 1.09$).

Cost-highlighting gratitude expression. Coders rated the degree to which the speaker expressed the costs their partner incurred for their kind deed(s) on the same 7-point scale ($ICC[2,5] = .82$; $M = 2.79$, $SD = 1.19$). Some examples of expressions that received a high score on cost-highlighting included: "... even though you are tired, you would rather stay in bed and watch TV, you are like out in the jeep, cleaning it out, carrying everything, packing it, making up lunches, you put all of your effort into when we are travelling"; "I'm very much grateful for the sacrifice that it's taken to bring [our baby] into our life [including] taking a year off from school, work like everything, having [given up on] a path that you really enjoy doing and it has asked a lot more from you than it has of me. [...] You've sacrificed a lot about your body and I know that's something that was very difficult."

Affectionate display. Coders also rated the degree to which the speaker looked affectionate toward the partner during the conversation (e.g., displays of warm smiles, baby voices, glistening eyes, head cocked to the side). The item was coded on the same 7-point scale ($ICC[2,5] = .87$; $M = 4.25$, $SD = 1.12$).

Diary measures

Every evening, participants completed a short survey that included the following items about the sacrifice or compromise they made that day. Most diary measures were

assessed with a single item to minimize participant fatigue and reduce attrition (Bolger et al., 2003). These items nevertheless echo exactly what was assessed and coded in the lab conversation data.

Perceived gratitude expression. Participants were asked about how their partner expressed gratitude for making the sacrifice or compromise.⁴ Specifically, following the stem “When my partner expressed gratitude for what I did for them,” they responded to the item, “they told me that I was responsive to their needs” (*responsiveness-highlighting gratitude expression*; $M = 4.28$, $SD = 1.21$) and “they acknowledged how costly it was for me” (*cost-highlighting gratitude expression*; $M = 3.77$, $SD = 1.30$) using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Reactions to gratitude. The same items as in the lab conversation were asked to assess daily *gratitude-specific positivity* ($M = 4.74$, $SD = 1.12$) and daily *gratitude-specific negativity* ($M = 2.66$, $SD = 1.33$). The items were assessed using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Relationship quality. Two items were used to assess daily *positive relationship quality* (e.g., “How satisfied did you feel with your relationship?”; $R_C = .88$; $M = 4.99$, $SD = 1.16$) and daily *negative relationship quality* (e.g., “How much tension did you feel in your relationship?”; $R_C = .91$; $M = 2.80$, $SD = 1.28$). Participants responded to the items using a 7-point scale ranging from 1 (*not at all*) to 7 (*a lot*).

Positive affect. Participants indicated how much they felt happy/pleased/joyful each day on a 7-point scale ranging from 1 (*not at all*) to 7 (*a lot*); $M = 4.83$, $SD = 1.08$.

Perceived cost of the act. Participants also answered a question, “How costly was this compromise/sacrifice for you?” on a 7-point scale ranging from 1 (*not at all*) to 7 (*a lot*); $M = 3.06$, $SD = 1.24$.

Results

Table 1 shows correlations among all key measures. Notably, responsiveness- and cost-highlighting gratitude expressions were positively correlated, both when coded by independent observers and perceived by the receiver of the expression. Thus, in all our analyses, we included both factors in the model simultaneously in order to examine the independent effects of each.⁵ We also note that correlations between gratitude-specific positivity and negativity as well as positive and negative relationship quality were only small to moderate, highlighting the need to examine the positive and negative outcomes separately.

Lab gratitude conversation

Analytic plan. We used multilevel models in which individuals were nested within couples in order to take into account the statistical dependence in the dyadic data (Kenny et al.,

Table 1. Correlations among all measures in the lab conversation.

	1	2	3	4	5	6
1. Partner's responsiveness-highlighting ^a	—					
2. Partner's cost-highlighting ^a	.56**	—				
3. Partner's affection display ^a	.36**	.10	—			
4. Gratitude-specific positivity	.38**	.09	.25**	—		
5. Gratitude-specific negativity	-.14	-.08	-.19**	-.30**	—	
6. Positive relationship quality	.40**	.16*	.28**	.75**	-.31**	—
7. Negative relationship quality	-.26**	-.09	-.30**	-.47**	.29**	-.40**

Note. ^aRated by coders.

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

2006). Following the Actor-Partner Interdependence Model, we ran four different models, regressing each of the listeners' outcomes following the conversation on the speakers' as well as listeners' responsiveness- and cost-highlighting gratitude expressions. Of primary interest in this research were the associations between speakers' responsiveness- and cost-highlighting gratitude expressions and the listeners' outcomes (i.e., partner effects). We then ran the same models controlling for the speakers' and listeners' affectionate displays in order to rule out the possibility that responsiveness-highlighting gratitude expressions were simply judged as more affectionate and the degree of affection was what drove our effects. Lastly, we ran an exploratory model in which we tested a moderating role of relationship length.⁶ Specifically, we included speaker responsiveness- and cost-highlighting by relationship length interaction terms in the model. All predictors were grand mean-centered prior to the analyses. All analyses were conducted using the lme4 package (Bates et al., 2014) in R.

Actor and partner effects. As shown in Table 2, the more the speaker highlighted the benefactor's responsiveness in their gratitude, the more positively the listener felt about the gratitude expression and globally about their relationship. The speaker's responsiveness-highlighting gratitude expressions were also associated with lower negative relationship quality as reported by the listener following the conversation. In contrast, the degree to which the speaker highlighted the costs that the partner had to incur was not associated with any of the listener's outcomes. Although of less interest in this research, when looking at the effects of listener's responsiveness- and cost-highlighting on their own outcomes, the results suggested that those who themselves tended to highlight responsiveness to a greater extent felt more positive and less negative about the gratitude their partner expressed, and evaluated their relationship more positively and less negatively following the partner's gratitude expression. Those who themselves tended to highlight costs to a greater extent felt more negative toward the partner's gratitude and evaluated their relationship more negatively following the partner's gratitude expression.

Additional analyses. We re-ran all the analyses with displays of affection included in the model. The effects of responsiveness-highlighting gratitude expressions remained the

Table 2. The effects of responsiveness- and cost-highlighting gratitude expressions on listeners' reactions in the lab conversation.

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>r</i>
DV: (L) Gratitude-specific positivity					
(S) Responsiveness-highlighting	0.36	0.07	4.96	<.001	0.35
(S) Cost-highlighting	-0.10	0.07	-1.38	.17	0.10
(L) Responsiveness-highlighting	0.29	0.07	4.10	<.001	0.29
(L) Cost-highlighting	-0.13	0.07	-1.84	.07	0.14
DV: (L) Gratitude-specific negativity					
(S) Responsiveness-highlighting	-0.02	0.12	-0.17	.87	0.01
(S) Cost-highlighting	-0.22	0.13	-1.71	.09	0.14
(L) Responsiveness-highlighting	-0.48	0.12	-3.90	<.001	0.29
(L) Cost-highlighting	0.43	0.13	3.36	<.001	0.27
DV: (L) Positive relationship quality					
(S) Responsiveness-highlighting	0.39	0.08	5.08	<.001	0.35
(S) Cost-highlighting	-0.12	0.08	-1.58	.12	0.12
(L) Responsiveness-highlighting	0.19	0.08	2.40	.02	0.18
(L) Cost-highlighting	0.04	0.08	0.55	.58	0.04
DV: (L) Negative relationship quality					
(S) Responsiveness-highlighting	-0.21	0.10	-2.16	.03	0.16
(S) Cost-highlighting	-0.09	0.09	-0.10	.34	0.08
(L) Responsiveness-highlighting	-0.44	0.10	-4.58	<.001	0.32
(L) Cost-highlighting	0.35	0.10	3.66	<.001	0.28

Note. (S) = Speaker, (L) = Listener; Effect sizes (*r*) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{t^2 / (t^2 + df)}$. *N* = 194 individuals.

same even when affectionate displays were included in models with gratitude-specific positivity and positive relationship quality as outcomes. However, in the negative relationship quality model, the effects of responsiveness-highlighting gratitude expressions dropped to non-significance, $b = -0.11$, $t = -1.14$, $p = .25$, after accounting for the effects of affectionate display ($b = -0.23$, $t = -2.87$, $p = .005$, for listeners' and $b = -0.17$, $t = -2.15$, $p = .03$, for speakers').

Lastly, when we examined the moderating role of relationship length, significant interaction effects between relationship length and both responsiveness- and cost-highlighting gratitude expressions were found in the model predicting negative relationship quality ($b = -0.01$, $t = -2.89$, $p = .004$, for responsiveness-highlighting and $b = -0.005$, $t = 2.14$, $p = .03$, for cost-highlighting). Specifically, for those who had been together for longer, receiving greater responsiveness-highlighting gratitude expressions was related to evaluating the relationship as less negative, $b = -0.43$, $t = -3.51$, $p < .001$, while cost-highlighting had no significant effect, $b = 0.07$, $t = 0.54$, $p = .59$. In contrast, for those in a shorter relationship, responsiveness-highlighting gratitude expressions were not significantly related to negative relationship quality, $b = 0.06$, $t = 0.49$, $p = .62$, but more cost-highlighting gratitude expressions were linked with less negative relationship quality, $b = -0.33$, $t = -2.31$, $p = .02$. Combined, these interactions suggest that how much the partner acknowledges one's costs might be more

Table 3. Correlations among all measures in the daily diary.

	1	2	3	4	5	6	7
1. Perceived responsiveness-highlighting	—						
2. Perceived cost-highlighting	.45**	—					
3. Gratitude-specific positivity	.66**	.30**	—				
4. Gratitude-specific negativity	-.21**	-.08	-.29**	—			
5. Positive relationship quality	.38**	.15*	.44**	-.32**	—		
6. Negative relationship quality	-.22**	-.02	-.22**	.27**	-.25**	—	
7. Positive affect	.12*	.03	.11	-.12	.23**	-.15**	—
8. Perceived cost	-.20**	.07	-.22**	.21**	-.21**	.40**	-.22**

Note. Correlations represent daily within-person correlations.

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

important for those in shorter relationships, whereas how much the partner benefitted from one's act is more important for those in longer relationships.

Daily gratitude expressions

Analytic plan. We next examined how daily gratitude expressions highlighting responsiveness and costs were associated with how the benefactor perceived the expression and felt about the sacrifice or compromise they made each day. We used multilevel models in which individuals were nested within dyads, and couples and days were crossed to account for the couples' reporting on the same days (Kenny et al., 2006).⁷ To separate the within- and between-person effects, we included both daily responsiveness- and cost-highlighting gratitude expressions (person-centered) and their aggregates (grand mean-centered average across the diary period) as predictors in all models. This allows us to examine effects of perceiving certain aspects of a gratitude expression on a given day separate from the general tendency to perceive certain aspects of the expression (i.e., the extent to which the expression was perceived higher on a given aspect than the typical level). Partner effects were not included in these models as given our study design, it was unlikely that both partners had items about the other's gratitude expressions filled out on the same day. Indeed, including the partner effects in the models resulted in a great drop in observation numbers ($n = 80$).

We first ran separate models for each of the outcomes with both person-centered and grand mean-centered responsiveness- and cost-highlighting gratitude expressions included as predictors. In the next set of models, we controlled for variables that might be confounded in our effects: daily positive affect and perceived cost of the acts (both within- and between-person effects), both of which, as shown in Table 3, were associated with responsiveness-highlighting gratitude expressions and some of our outcomes of interest. We examined whether any effect we found in the previous set of analyses remained similar. Finally, we ran an exploratory interaction model in which we tested the moderating role of relationship length. Specifically, we included interaction terms involving all four gratitude variables (i.e., within- and between-effects of

Table 4. The effects of responsiveness- and cost-highlighting gratitude expressions on listeners' reactions in the daily diary.

	<i>b</i>	<i>t</i>	<i>p</i>	<i>r</i>
DV: Gratitude-specific positivity				
Responsiveness-highlighting	0.61	12.77	<.001	0.62
Cost-highlighting	0.02	-0.01	.99	0.001
Responsiveness-highlighting (aggregate)	0.64	11.05	<.001	0.64
Cost-highlighting (aggregate)	-0.03	-0.47	.64	0.03
DV: Gratitude-specific negativity				
Responsiveness-highlighting	-0.24	-3.31	.001	0.35
Cost-highlighting	0.02	0.28	.78	0.02
Responsiveness-highlighting (aggregate)	-0.07	-0.84	.40	0.06
Cost-highlighting (aggregate)	0.13	1.53	.13	0.10
DV: Positive relationship quality				
Responsiveness-highlighting	0.34	6.18	<.001	0.35
Cost-highlighting	-0.02	-0.31	.75	0.02
Responsiveness-highlighting (aggregate)	0.21	2.68	.008	0.19
Cost-highlighting (aggregate)	0.04	0.58	.57	0.04
DV: Negative relationship quality				
Responsiveness-highlighting	-0.26	-3.80	<.001	0.21
Cost-highlighting	0.06	0.92	.36	0.05
Responsiveness-highlighting (aggregate)	-0.008	-0.09	.93	0.006
Cost-highlighting (aggregate)	0.02	0.24	.81	0.01

Note. Effect sizes (*r*) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{t^2/(t^2 + df)}$. *N* = 463 daily reports.

responsiveness- and cost-highlighting gratitude expressions) and the (grand mean-centered) moderator.

Within-person associations. As shown in Table 4, on days people perceived more responsiveness-highlighting gratitude expressions than they typically did across the 14-day study, they showed higher levels of positivity and lower levels of negativity toward the partner's gratitude. They also reported higher levels of positive relationship quality and lower levels of negative quality on such days. On the other hand, cost-highlighting gratitude expressions were not associated with gratitude-specific feelings or relationship quality.

Additional analyses. We ran the same models controlling for variables that might be confounded in our effects: daily positive affect and perceived cost of the acts. Results showed that all the effects in the models reported in Table 4 remained the same with one exception: the between-person effect of responsiveness-highlighting gratitude expressions dropped to non-significance, $b = 0.09$, $p = .18$. Nevertheless, as all effects in other models as well as within-person effects of responsiveness-highlighting gratitude expressions in this model remained the same, there is no strong evidence that the effects of responsiveness-highlighting gratitude expressions we found could be explained by the

levels of positive affect participants felt that day or the costly nature of the act that elicited the gratitude.

Next, we examined if any of the effects were moderated by relationship length. There were two significant interactions: in a model with gratitude-specific positivity as an outcome, a significant interaction between daily responsiveness-highlighting gratitude expressions and relationship length, $b = -0.003$, $t = -2.36$, $p = .02$, suggested that the within-person association between responsiveness-highlighting gratitude expression and felt positivity was stronger for those in shorter relationships, $b = 0.72$, $t = 10.29$, $p < .001$, than for those in longer relationships, $b = 0.50$, $t = 7.92$, $p < .001$. Further, in a model with gratitude-specific negativity as an outcome, the interaction between daily cost-highlighting gratitude expressions and relationship length was significant, $b = 0.004$, $t = 2.48$, $p = .01$, such that the within-person association between cost-highlighting gratitude expressions and felt negativity was positive for those in longer relationships, $b = 0.12$, $t = 1.51$, $p = .13$, but was negative for those in shorter relationships, $b = -0.18$, $t = -1.80$, $p = .07$. Combined, these data provide some evidence that both responsiveness-highlighting and cost-highlighting were received more favorably among those who were in less established relationships.

Discussion

Although expressions of gratitude are theoretically considered an effective “social glue” that help connect people to their partners (Algoe, 2012), they are not always successful in serving this role (Leong et al., 2019). In order to understand when gratitude will be maximally beneficial, we examined *how* expressing gratitude to a romantic partner influences relationship outcomes. Specifically, we focused on expresser’s highlighting of the partner’s (i.e., benefactor’s) responsiveness and/or their costs. We found that acknowledging the degree to which the benefactor’s act was responsive to the beneficiary’s needs, rather than the degree to which it was costly, was the primary contributor to the positive effects gratitude expressions had on the benefactor. In both lab conversation and in daily life, the more responsiveness-highlighting was embedded in the gratitude expression, the more positively the benefactor perceived the gratitude and felt toward their relationship. Importantly, these effects were not attributable to the speaker’s display of affection when expressing gratitude (in the lab conversation; except in a model predicting negative relationship quality) and the extent to which the receiver of the expression felt positive on the day they perceived the gratitude or the costliness of the act that elicited the gratitude (in the diary data). These findings are consistent with the notion that romantic relationships are communal in nature and that giving and receiving of benefits between partners are based on responsiveness to each other’s needs (Clark & Mills, 1993). That is, benefactors are satisfied to learn that what they did met their partner’s needs precisely because their behavior was motivated by a concern for their partner’s welfare (Impett & Gordon, 2010).

In contrast, although the degree to which the beneficiary acknowledged the cost was also linked with some of the positive outcomes, it did not have any benefits above and beyond responsiveness-highlighting gratitude expressions. Of course, our results do not suggest that acknowledgment of the costs has no value to the benefactor in a communal

relationship; it may still be a better alternative to not expressing gratitude at all (see Footnote 4). Yet, once feelings of gratitude have been conveyed, it may be the message of how much they have made an impact in the partner's well-being that is more satisfying to the benefactor. Alternatively, it is possible that benefits of receiving cost-highlighting gratitude expressions are conditional on other factors. For example, the pattern of significant interactions in our data indicated that cost-highlighting gratitude expressions might be associated with the benefactors' feeling less negative about the gratitude (in the lab) and perceiving the relationship as less negative (in the diary) particularly among those in a shorter (vs. longer) relationship. Perhaps when relationship norms and expectations have not been established yet and concerns about being taken advantage of are more salient, there may be some benefits of receiving explicit acknowledgment of one's efforts. It is noteworthy, however, that while these data provided some suggestive evidence for the benefits of cost-highlighting in particular relationship contexts, these observed benefits were nevertheless limited to attenuating the negativity and did not include imbuing positivity into the relationship. Further, these interaction findings need to be replicated in larger samples before definitive conclusions can be drawn.

The present findings extend previous work on other-praising expressions of gratitude (Algoe et al., 2016) by identifying the specific ways of conveying the praiseworthiness that can maximize the relational benefits of gratitude expressions. Expressions of praise for another can be conveyed in different ways—sometimes intertwined with responsiveness-highlighting, other times with cost-highlighting or with both. By examining these expressions in a more nuanced manner, our work makes an important contribution to translating these findings into practically meaningful information. Indeed, there is a growing interest in incorporating gratitude into interventions to improve couples' well-being (Jacobs Bao & Lyubomirsky, 2013; Parnell et al., 2019) in which such an in-depth investigation into gratitude expressions will be particularly useful. Further, our research is unique from the existing work in speaking to the benefits of perceiving oneself as a responsive partner as opposed to perceiving a *partner* as responsive (Algoe et al., 2016). That is, while previous work has focused on the importance of conveying an expresser's responsiveness to the benefactor (Algoe & Zhaoyang, 2016), our findings suggest that it may be as important for the expresser to clearly communicate how responsive the benefactor has been.

Indeed, people may welcome the knowledge of having met the partner's needs because they are aware that their responsiveness, when perceived by the partner, has important implications for how much the partner values them. For example, people may believe that they have enacted more responsive behaviors in their romantic life than they actually did in part due to the motivation to feel more valued by their partner (Lemay, 2014). Similarly, a people-as-means perspective would suggest that to establish a satisfying relationship, people not only need to perceive their partner as being instrumental to their own goals, but they also need to feel important to their partner's goals (i.e., mutual perceived instrumentality; Orehek & Forest, 2016). Expressions of gratitude, and particularly responsiveness-highlighting expressions, can precisely and effectively deliver this information. Over time, responsiveness-highlighting gratitude expressions can even contribute to a benefactor's belief that they are a competent partner and are capable of helping, which is critical for maintaining long-term relationship well-being (Feeney & Collins, 2003).

Nevertheless, due to the difficulty of collecting dyadic data in romantic couples, one limitation of our work is that our claims are based on one sample. Although we found evidence for the positive outcomes associated with responsiveness-highlighting gratitude expressions using two different methodologies (i.e., observing couples' in-lab conversations and experience sampling) in which the expressions were obtained from two different sources (i.e., independent observers and benefactors), this within-study replication only provides support for our claims within this particular relationship context and cannot speak to their generalizability. In particular, our sample consisted of couples who have been together for more than a year, which is a specific relationship context (e.g., indicative of high commitment) that might shape our effects of interest in different ways. In fact, even within this sample of couples who have all advanced beyond the early stage of a relationship, there was some evidence that relationship length played a role in shaping how certain gratitude expressions are received. As such, it will be important to explore in what relationship contexts (e.g., relationship type, cohabitation status; also see Footnote 6) responsiveness- and cost-highlighting gratitude expressions might be related to more or less positive outcomes.

Given the current lack of knowledge regarding specific ways of expressing gratitude and their associated consequences, our study opens avenues for many novel questions. One such question is whether there are systematic differences in how people express gratitude and their implications for the partner's motivation (or lack thereof) to help them in the future. For example, individuals who prioritize self-reliance and find intimacy uncomfortable (i.e., individuals high in attachment avoidance; Mikulincer & Shaver, 2016) may be more reluctant to express that they have received a benefit from their intimate other. This in turn may detract from a benefactor's satisfaction in helping them and even de-motivate them from engaging in nice acts in the future. Further, the possibility of responsiveness- and cost-highlighting gratitude expressions eliciting ambivalence deserves an in-depth investigation. One promising direction to examine this possibility is to assess both cognitive and affective consequences of receiving gratitude and examine them simultaneously; perhaps, the extent to which cost-highlighting gratitude expressions elicit positive affective reactions can be made clearer when cognitive reactions (e.g., heightened perceptions of being under-benefited in the relationship) are taken into account.

Lastly but importantly, there are ways future research can extend our research from a methodological point of view. For example, our conversation task was limited to 1 minute which might have been too short to capture the participants' full gratitude expressions; with longer conversations, the videos might provide a fuller context and additional detail that can help us better understand when and how certain gratitude expressions are expressed and how they are received. Further, given the absence of an established scale to assess responsiveness- and cost-highlighting gratitude expressions, we relied on single-item measures in the diary; development of a more valid and reliable measurement tool to assess different types of gratitude expressions will be valuable.

Conclusion


Gratitude is a relational emotion people commonly feel and express in romantic relationships (Clark et al., 2017), which over time can help establish a history of reciprocal


exchanges (as gratitude motivates reciprocity; McCullough et al., 2008). The current research investigated the specific ways of expressing gratitude that make a benefactor feel positively about the gratitude and satisfied with their relationship. This study suggests that benefactors feel the best when they know that their kind actions have met their partner's needs, highlighting people's communal motivation to be a responsive partner. Expanding the present results to delve further into how different ways of expressing gratitude can affect benefactors will be important for advancing theory on gratitude and have practical implications for couples' daily lives.


Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iDs

Yoobin Park  <https://orcid.org/0000-0002-2796-3523>

Bonnie M. Le  <https://orcid.org/0000-0002-1857-6716>

Emily A. Impett  <https://orcid.org/0000-0003-3348-7524>

Open research statement

As part of IARR's encouragement of open research practices, the author(s) have provided the following information: This research was not pre-registered. The data and materials used in the research are available. The data and materials can be obtained by emailing: yoobin.park@mail.utoronto.ca.

Notes

1. Our research focuses on gratitude as an interpersonal *emotion* as opposed to as a virtue or a disposition (see Emmons, 2004 for an in-depth discussion on this issue).
2. When we examined if there is a significant interaction indicating a difference in daily gratitude effects between sacrifice and compromise days, two out of eight significant interactions emerged, both with regard to the between-person effects of cost-highlighting gratitude expressions. Specifically, higher average levels of cost-highlighting were linked with more negativity toward gratitude on sacrifice days, $b = 0.23$, $t = 2.50$, $p = .01$, but not on compromise days, $b = -0.14$, $t = -0.96$, $p = .34$. Similarly, the link between average levels of cost-highlighting and negative relationship quality was positive (albeit not significantly) on sacrifice days, $b = 0.16$, $t = 1.67$, $p = .10$, but was in the opposite direction on compromise days, $b = -0.30$, $t = -2.14$, $p = .03$.
3. Coders also rated the degree to which the speaker focused on how the partner's actions enhanced or benefited the self, following the coding scheme from previous research (Algoe et al., 2016). Given the possible overlap between the two variables, we also ran the same models as in Table 2 with this variable from previous work (i.e., self-benefit) included. Results showed that while the effects of responsiveness-highlighting remained the same (except for in a model predicting negative relationship quality, in which the effect dropped to non-significance, $b = -0.14$, $t = -0.91$, $p = .36$), self-benefit did not have any significant effects.
4. Participants also had an option to report that their partner did not express any gratitude. There were 49 such daily reports and on average, positive relationship quality was significantly lower,

- $t(54) = 5.45, p < .001$, and negative relationship quality was higher, $t(54) = -3.02, p = .004$, on such days (compared to days where participants perceived gratitude for their compromise or sacrifice), consistent with previous findings on benefits of receiving gratitude (Chang et al., 2013).
5. In all the models, we also tested for an interaction between responsiveness-highlighting and cost-highlighting gratitude expressions, but did not find any significant effects.
 6. For both lab and diary portions of the analyses, we also explored moderating effects of cohabitation status (living together vs. not living together) and relationship status (married vs. unmarried). No significant interactions were found with cohabitation status; only one effect emerged related to the relationship status. In the felt-negativity model of the diary analyses, an interaction between daily cost-highlighting gratitude expressions and relationship status was significant, $b = 0.34, t = 2.36, p = .02$. Specifically, the within-person association between cost-highlighting gratitude expression and felt negativity was positive for those who were married, $b = 0.23, t = 1.92, p = .06$, but was in the opposite direction for those who were unmarried, $b = -0.11, t = -1.38, p = .17$, although neither of these simple slopes reached significance.
 7. For one of the models that resulted in singular fit (i.e., variance estimated as close to zero), we dropped the effect of days, which did not significantly decrease the goodness of fit according to a likelihood ratio test.

References

- Algoe, S. B. (2012). Find, remind, and bind: The functions of gratitude in everyday relationships. *Social and Personality Psychology Compass, 6*, 455–469. <https://doi.org/10.1111/j.1751-9004.2012.00439.x>
- Algoe, S. B., Kurtz, L. E., & Hilaire, N. M. (2016). Putting the “you” in “thank you”: Examining other-praising behavior as the active relational ingredient in expressed gratitude. *Social Psychological and Personality Science, 7*, 658–666. <https://doi.org/10.1177/1948550616651681>
- Algoe, S. B., & Zhaoyang, R. (2016). Positive psychology in context: Effects of expressing gratitude in ongoing relationships depend on perceptions of enactor responsiveness. *The Journal of Positive Psychology, 11*, 399–415. <https://doi.org/10.1080/17439760.2015.1117131>
- Arend, M. G., & Schäfer, T. (2019). Statistical power in two-level models: A tutorial based on Monte Carlo simulation. *Psychological Methods, 24*, 1–19. <https://doi.org/10.1037/met0000195>
- Bates, D., Maechler, M., Bolker, B., & Walker, S. (2014). *lme4: Linear mixed-effects models using Eigen and S4 classes* (R package version 0.999375–39). <http://CRAN.R-project.org/package=lme4>
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*, 579–616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>
- Bretherton, I., Fritz, J., Zahn-Waxler, C., & Ridgeway, D. (1986). Learning to talk about emotions: A functionalist perspective. *Child Development, 57*, 529–548. <https://doi.org/10.2307/1130334>
- Cao, H., Fang, X., Fine, M. A., Ju, X., Lan, J., & Zhou, N. (2017). Sacrifice, commitment, and marital quality in the early years of Chinese marriage: An actor-partner interdependence moderation model. *Journal of Social and Personal Relationships, 34*, 1122–1144. <https://doi.org/10.1177/0265407516670041>
- Chang, Y. P., Li, T. S., Teng, H. Y., Berki, A., & Chen, L. H. (2013). Living with gratitude: Spouse’s gratitude on one’s depression. *Journal of Happiness Studies, 14*, 1431–1442. <https://doi.org/10.1007/s10902-012-9389-4>

- Clark, M. S., Armentano, L. A., Boothby, E. J., & Hirsch, J. L. (2017). Communal relational context (or lack thereof) shapes emotional lives. *Current Opinion in Psychology*, *17*, 176–183. <https://doi.org/10.1016/j.copsyc.2017.07.023>
- Clark, M. S., Lemay, E. P., Jr, Graham, S. M., Pataki, S. P., & Finkel, E. J. (2010). Ways of giving benefits in marriage: Norm use, relationship satisfaction, and attachment-related variability. *Psychological Science*, *21*, 944–951. <https://doi.org/10.1177/0956797610373882>
- Clark, M. S., & Mills, J. (1993). The difference between communal and exchange relationships: What it is and is not. *Personality and Social Psychology Bulletin*, *19*, 684–691. <https://doi.org/10.1177/0146167293196003>
- Dunn, J., Bretherton, I., & Munn, P. (1987). Conversations about feeling states between mothers and their young children. *Developmental Psychology*, *23*, 132–139. <https://doi.org/10.1037/0012-1649.23.1.132>
- Emmons, R. A. (2004). The psychology of gratitude: An introduction. In R. A. Emmons & M. E. McCullough (Eds.), *The psychology of gratitude* (pp. 3–16). Oxford University Press.
- Farrell, A. K., Simpson, J. A., Overall, N. C., & Shallcross, S. L. (2016). Buffering the responses of avoidantly attached romantic partners in strain test situations. *Journal of Family Psychology*, *30*, 580–591. <https://doi.org/10.1037/fam0000186>
- Feeney, B. C., & Collins, N. L. (2003). Motivations for caregiving in adult intimate relationships: Influences on caregiving behavior and relationship functioning. *Personality and Social Psychology Bulletin*, *29*, 950–968. <https://doi.org/10.1177/0146167203252807>
- Fritz, H. L., Nagurney, A. J., & Helgeson, V. S. (2003). Social interactions and cardiovascular reactivity during problem disclosure among friends. *Personality and Social Psychology Bulletin*, *29*, 713–725. <https://doi.org/10.1177/0146167203029006004>
- Gordon, A. M., & Chen, S. (2016). Do you get where I'm coming from? Perceived understanding buffers against the negative impact of conflict on relationship satisfaction. *Journal of Personality and Social Psychology*, *110*, 239–260. <https://doi.org/10.1037/pspi0000039>
- Green, P., & MacLeod, C. J. (2016). SIMR: An R package for power analysis of generalized linear mixed models by simulation. *Methods in Ecology and Evolution*, *7*, 493–498. <https://doi.org/10.1111/2041-210X.12504>
- Heyman, R. E. (2001). Observation of couple conflicts: Clinical assessment applications, stubborn truths, and shaky foundations. *Psychological Assessment*, *13*, 5–35.
- Impett, E. A., & Gordon, A. M. (2010). Why do people sacrifice to approach rewards versus to avoid costs? Insights from attachment theory. *Personal Relationships*, *17*, 299–315. <https://doi.org/10.1111/j.1475-6811.2010.01277.x>
- Impett, E. A., Javam, L., Le, B. M., Asyabi-Eshghi, B., & Kogan, A. (2013). The joys of genuine giving: Approach and avoidance sacrifice motivation and authenticity. *Personal Relationships*, *20*, 740–754. <https://doi.org/10.1111/per.12012>
- Jacobs Bao, K., & Lyubomirsky, S. (2013). Making it last: Combating hedonic adaptation in romantic relationships. *The Journal of Positive Psychology*, *8*, 196–206. <https://doi.org/10.1080/17439760.2013.777765>
- Kammrath, L. K., Peetz, J., Hara, K., Demarco, A., Wood, K., Kirkconnell, J., Harley, M., & Allen, T. (2015). It's a matter of time: The effect of depletion on communal action in romantic relationships is moderated by relationship length. *Journal of Personality and Social Psychology*, *109*, 276–291.
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. Guilford Press.

- Kogan, A., Impett, E. A., Oveis, C., Hui, B., Gordon, A. M., & Keltner, D. (2010). When giving feels good: The intrinsic benefits of sacrifice in romantic relationships for the communally motivated. *Psychological Science, 21*, 1918–1924. <https://doi.org/10.1177/0956797610388815>
- Lan, J., Li, X., Cao, H., Zhou, N., Lin, X., Deng, L., & Fang, X. (2017). Inequity of sacrifice and marital satisfaction in Chinese young couples. *Journal of Family Therapy, 39*, 169–192. <https://doi.org/10.1111/1467-6427.12153>
- Lemay, E. P., Jr (2014). Accuracy and bias in self-perceptions of responsive behavior: Implications for security in romantic relationships. *Journal of Personality and Social Psychology, 107*, 638–656. <https://doi.org/10.1037/a0037298>
- Leong, J. L., Chen, S. X., Fung, H. H., Bond, M. H., Siu, N. Y., & Zhu, J. Y. (2019). Is gratitude always beneficial to interpersonal relationships? The interplay of grateful disposition, grateful mood, and grateful expression among married couples. *Personality and Social Psychology Bulletin, 46*, 64–78. <https://doi.org/10.1177/0146167219842868>
- McCullough, M. E., Kimeldorf, M. B., & Cohen, A. D. (2008). An adaptation for altruism: The social causes, social effects, and social evolution of gratitude. *Current Directions in Psychological Science, 17*, 281–285. <https://doi.org/10.1111/j.1467-8721.2008.00590.x>
- McNeely, B. L., & Meglino, B. M. (1994). The role of dispositional and situational antecedents in prosocial organizational behavior: An examination of the intended beneficiaries of prosocial behavior. *Journal of Applied Psychology, 79*, 836–844. <https://doi.org/10.1037/0021-9010.79.6.836>
- Mikulincer, M., & Shaver, P. R. (2016). *Attachment in adulthood: Structure, dynamics, and change* (2nd ed.). Guilford Press.
- Orehek, E., & Forest, A. L. (2016). When people serve as means to goals: Implications of a motivational account of close relationships. *Current Directions in Psychological Science, 25*, 79–84. <https://doi.org/10.1177/0963721415623536>
- Parnell, K. J., Wood, N. D., & Scheel, M. J. (2019). A gratitude exercise for couples. *Journal of Couple & Relationship Therapy, 19*, 212–229. <https://doi.org/10.1080/15332691.2019.1687385>
- Reis, H. T., Lemay, E. P., Jr, & Finkenauer, C. (2017). Toward understanding understanding: The importance of feeling understood in relationships. *Social and Personality Psychology Compass, 11*, e12308.
- Righetti, F., Gere, J., Hofmann, W., Visserman, M. L., & Van Lange, P. A. (2016). The burden of empathy: Partners' responses to divergence of interests in daily life. *Emotion, 16*, 684–690. <https://doi.org/10.1037/emo0000163>
- Rosenthal, R., & Rosnow, R. L. (2007). *Essentials of behavioral research: Methods and data analysis* (3rd ed.). McGraw-Hill.
- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: the self-concordance model. *Journal of Personality and Social Psychology, 76*, 482–497. <https://doi.org/10.1037/0022-3514.76.3.482>
- Shiota, M. N., Campos, B., Oveis, C., Hertenstein, M. J., Simon-Thomas, E., & Keltner, D. (2017). Beyond happiness: Building a science of discrete positive emotions. *American Psychologist, 72*, 617–643.
- Sprecher, S. (2018). Inequity leads to distress and a reduction in satisfaction: Evidence from a priming experiment. *Journal of Family Issues, 39*, 230–244. <https://doi.org/10.1177/0192513X16637098>

- Tesser, A., Gatewood, R., & Driver, M. (1968). Some determinants of gratitude. *Journal of Personality and Social Psychology, 9*, 233–236. <https://doi.org/10.1037/h0025905>
- Visserman, M. L., Impett, E. A., Righetti, F., Muise, A., Keltner, D., & Van Lange, P. A. (2019). To “see” is to feel grateful? A quasi-signal detection analysis of romantic partners’ sacrifices. *Social Psychological and Personality Science, 10*, 317–325. <https://doi.org/10.1177/1948550618757599>
- Whitton, S. W., Stanley, S. M., & Markman, H. J. (2007). If I help my partner, will it hurt me? Perceptions of sacrifice in romantic relationships. *Journal of Social and Clinical Psychology, 26*, 64–91. <https://doi.org/10.1521/jscp.2007.26.1.64>
- Winterich, K. P., Mittal, V., & Aquino, K. (2013). When does recognition increase charitable behavior? Toward a moral identity-based model. *Journal of Marketing, 77*, 121–134. <https://doi.org/10.1509/jm.11.0477>
- Zhang, N., Ji, L. J., Bai, B., & Li, Y. (2018). Culturally divergent consequences of receiving thanks in close relationships. *Emotion, 18*, 46–57. doi.org/10.1037/emo0000385