

Supplemental Material for:

Differing Levels of Gratitude Between Romantic Partners: Concurrent and Longitudinal Links with Satisfaction and Commitment in Six Dyadic Datasets

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A. Correlations in individual datasets

Tables S1 to S11 show correlations among study variables.

Notes for all tables: T2 = reports at follow-up; (P) = Partner's report. $p^* < .05$. $p^{**} < .01$.

Table S1

Intraclass Correlations and Cross-Intraclass Correlations Among Study Variables (Sample 1)

	Grat. (P)	App. (P)	Sat. (P)	Com. (P)	Grat. T2 (P)	App. T2 (P)	Sat. T2 (P)	Com. T2(P)
1. Gratitude	(.49)	.56**	.43**	.28*	.51**	.51**	.47**	.34**
2. Appreciated		(.45)	.40**	.33**	.49**	.36*	.39**	.36**
3. Satisfaction			(.48)	.39**	.38**	.29**	.44**	.37**
4. Commitment				(.49)	.33**	.28**	.36*	.48**
5. Gratitude.T2					(.48)	.48**	.46**	.42**
6. Appreciated. T2						(.32)	.37**	.36**
7. Satisfaction. T2							(.51)	.45**
8. Commitment. T2								(.51)

Note. Values in bracket represent intraclass correlations. T2 = reports at follow-up; (P) = Partner's report.

$N = 188$ at baseline; $N = 132$ for all correlations with the follow-up variables.

$p^* < .05$. $p^{**} < .01$.

Table S2

Intraclass Correlations and Cross-Intraclass Correlations Among Study Variables (Sample 2)

	Grat. (P)	App. (P)	Sat. (P)	Com. (P)	Grat. T2 (P)	App. T2 (P)	Sat. T2 (P)	Com. T2 (P)
1. Gratitude	(.48)	.53**	.46**	.27**	.43**	.50**	.28**	.21*
2. Appreciated		(.52)	.49**	.30**	.56**	.52**	.41**	.33**
3. Satisfaction			(.53)	.36**	.45**	.44**	.47**	.37**
4. Commitment				(.36)	.24**	.31**	.34**	.30**
5. Gratitude.T2					(.44)	.57**	.41**	.28**
6. Appreciated. T2						(.56)	.46**	.37**
7. Satisfaction. T2							(.47)	.40**
8. Commitment. T2								(.38)

Note. Values in bracket represent intraclass correlations. $N = 196$ at baseline; $N = 170$ with the follow-up variables.

Table S3

Correlations Among Study Variables (Sample 2)

	1	2	3	4	5	6	7
1. Gratitude	—						
2. Feeling appreciated	.61**	—					
3. Satisfaction	.60**	.66**	—				
4. Commitment	.50**	.40**	.63**	—			
5. Gratitude.T2	.71**	.60**	.56**	.48**	—		
6. Feeling appreciated. T2	.54**	.75**	.57**	.39**	.65**	—	
7. Satisfaction. T2	.43**	.60**	.66**	.63**	.62**	.65**	—
8. Commitment. T2	.47**	.40**	.58**	.71**	.56**	.50**	.72**

Note. Significance tests are based on the effective sample size as in Griffin and Gonzalez (1995).

Table S4

Intraclass Correlations and Cross-Intraclass Correlations Among Study Variables (Sample 3)

	Grat. (P)	App. (P)	Sat. (P)	Com. (P)	T2 Grat. (P)	T2 App. (P)	T2 Sat. (P)	T2 Com.(P)
1. Gratitude	(.49)	.58**	.46**	.27*	.49**	.56**	.51**	.34**
2. Appreciated		(.44)	.47**	.33**	.54**	.36**	.44**	.32**
3. Satisfaction			(.56)	.39**	.46**	.37**	.53**	.37**
4. Commitment				(.48)	.32**	.28**	.30**	.46**
5. T2 Gratitude					(.39)	.52**	.43**	.22*
6. T2 Appreciated						(.29)	.39**	.26**
7. T2 Satisfaction							(.51)	.32**
8. T2 Commitment								(.45)

Note. Values in parentheses represent intraclass correlations. $N = 188$ at baseline; $N = 132$ for all correlations with the follow-up variables

Table S5

Correlations Among Study Variables (Sample 3)

	1	2	3	4	5	6	7
1. Gratitude	—						
2. Feeling appreciated	.62**	—					
3. Satisfaction	.62**	.69**	—				
4. Commitment	.51**	.43*	.63**	—			
5. T2 Gratitude	.78**	.53**	.54**	.44**	—		
6. T2 Feeling appreciated	.50**	.72**	.54**	.36**	.61**	—	
7. T2 Satisfaction	.53**	.57**	.72**	.44**	.63**	.71**	—
8. T2 Commitment	.40**	.40**	.49**	.66**	.43**	.46**	.62**

Note. Significance tests are based on the effective sample size as in Griffin and Gonzalez (1995).

Table S6

Intraclass Correlations and Cross-Intraclass Correlations Among Study Variables (Sample 4)

	Grat. (P)	App. (P)	Sat. (P)	Grat. T2 (P)	App. T2 (P)	Sat. T2 (P)
1. Gratitude	(.46)	.50**	.53**	.41**	.47**	.35**
2. Appreciated		(.32)	.47**	.47**	.37**	.40**
3. Satisfaction			(.62)	.49**	.47**	.50**
5. Gratitude.T2				(.34)	.44**	.38**
6. Appreciated. T2					(.41)	.44**
7. Satisfaction. T2						(.50)

Note. Values in bracket represent intraclass correlations. $N = 208$ at baseline; $N = 200$ with the follow-up variables.

Table S7

Correlations Among Study Variables (Sample 4)

	1	2	3	4	5	6
1. Gratitude	—					
2. Feeling appreciated	.62**	—				
3. Satisfaction	.64**	.64**	—			
4. Gratitude.T2	.77**	.55**	.62**	—		
5. Feeling appreciated. T2	.58**	.76**	.60**	.72**	—	
6. Satisfaction. T2	.49**	.55**	.74**	.63**	.68**	—

Note. Significance tests are based on the effective sample size as in Griffin and Gonzalez (1995).

$p^* < .05$. $p^{**} < .01$.

Table S8

Intraclass Correlations and Cross-Intraclass Correlations Among Study Variables (Sample 5)

	Grat. (P)	App. (P)	Sat. (P)	Com. (P)	Grat. T2 (P)	App. T2 (P)	Sat. T2 (P)	Com. T2(P)
1. Gratitude	(.16)	.52**	.18	.04	.42*	.54**	.26	.15
2. Appreciated		(.48)	.38**	.26**	.52**	.40*	.23	.39*
3. Satisfaction			(.30)	.19	.39*	.47**	.10	.16
4. Commitment				(.49)	.30	.44**	.08	.46*
5. Gratitude.T2					(.49)	.57**	.37*	.29
6. Appreciated. T2						(.35)	.39*	.44*
7. Satisfaction. T2							(.16)	.16
8. Commitment. T2								(.50)

Note. Values in bracket represent intraclass correlations. $N = 144$ for all correlations at baseline; $N = 46$ with the follow-up variables.

$p^* < .05$. $p^{**} < .01$.

Table S9

Correlations Among Study Variables (Sample 5)

	1	2	3	4	5	6	7
1. Gratitude	—						
2. Feeling appreciated	.50**	—					
3. Satisfaction	.51**	.50**	—				
4. Commitment	.39**	.20*	.47**	—			
5. Gratitude.T2	.71**	.53**	.51**	.52**	—		
6. Feeling appreciated. T2	.37**	.77**	.36*	.36*	.65**	—	
7. Satisfaction. T2	.40**	.57**	.52**	.37*	.61**	.68**	—
8. Commitment. T2	.55**	.50**	.60**	.83**	.58**	.44**	.55**

Note. Significance tests are based on the effective sample size as in Griffin and Gonzalez (1995).

Table S10

Intraclass Correlations and Cross-Intraclass Correlations Among Study Variables (Sample 6)

	Grat. (P)	App. (P)	Sat. (P)	Com. (P)	Grat. T2 (P)	App. T2 (P)	Sat. T2 (P)	Com. T2(P)
1. Gratitude	(.35)	.54**	.36**	.10	.26	.41**	.27*	.05
2. Appreciated		(.59)	.51**	.22*	.37*	.50**	.39**	.18
3. Satisfaction			(.60)	.32**	.21	.35*	.50**	.36*
4. Commitment				(.43)	.01	.08	.17	.16
5. Gratitude.T2					(.44)	.54**	.35*	.24
6. Appreciated. T2						(.74)	.54**	.43**
7. Satisfaction. T2							(.64)	.48**
8. Commitment. T2								(.39)

Note. Values in bracket represent intraclass correlations. $N = 158$ at baseline; $N = 74$ with the follow-up variables.

Table S11

Correlations Among Study Variables (Sample 6)

	1	2	3	4	5	6	7
1. Gratitude	—						
2. Feeling appreciated	.72**	—					
3. Satisfaction	.56**	.64**	—				
4. Commitment	.39**	.42**	.57**	—			
5. Gratitude.T2	.66**	.57**	.40**	.26*	—		
6. Feeling appreciated. T2	.63**	.65**	.49**	.20	.80**	—	
7. Satisfaction. T2	.30*	.45**	.76**	.28*	.47**	.66**	—
8. Commitment. T2	.30*	.40**	.54**	.47**	.54**	.52**	.67**

Note. Significance tests are based on the effective sample size as in Griffin and Gonzalez (1995).

B. Indirect effect via feelings of being appreciated (Part 1)

Our findings provided support for the idea that gratitude promotes an upward spiral of relationship well-being (Algoe, 2010) as people who were highly grateful *or* who had a partner high in gratitude at baseline showed higher levels of gratitude by the follow-up. As indicated in our preregistration, we also conducted a set of exploratory analyses to examine the process by which gratitude may be transferred from one to another partner (A. M. Gordon et al., 2012). Specifically, we examined whether one's (feelings of) gratitude were associated with the partner's feelings of being appreciated, which in turn translated into the partner's own feelings of gratitude. To test this indirect effect, we ran two models: 1) actor gratitude at baseline predicting the partner's feeling appreciated at the follow-up, controlling for the partner's feeling appreciated at baseline, and 2) partner's feeling appreciated at the follow-up predicting the partner's own gratitude at the follow-up, controlling for the actor and partner's gratitude at baseline. We then used Monte Carlo methods based on 20,000 simulated resamples (Selig & Preacher, 2008) to generate confidence intervals for the indirect effect of actor gratitude on the partner's gratitude at the follow-up via the partner's feelings of being appreciated.

The results from the first model showed that when people reported higher gratitude at baseline, their partner reported greater feelings of being appreciated at the follow-up, $b = 0.14$, $t = 4.49$, $p < .001$. Further, the second model showed that the partner's feeling appreciated at the follow-up was associated with their higher levels of gratitude, $b = 0.50$, $t = 21.00$, $p < .001$. Importantly, the confidence interval for the indirect effect of actor gratitude on partner gratitude via partner feeling appreciated did not include zero, $ab = 0.06$, 95% CI = [0.04, 0.08]. That is, one's high gratitude was linked with the partner's greater feelings of being appreciated, which in turn translated into the partner's own feelings of gratitude.

C. The moderating effect of relationship length (Part 1)

Although not initially pre-registered, we also tested relationship length as another potential moderator of the effects found in our study (which diverged from the previous findings based on a sample of newlyweds; McNulty & Dugas, 2019). We tested the moderating role of relationship length in all models and found four that emerged as significant. The results of the significant interactions are summarized in Table S12. Overall, as illustrated in Figure S1, among those who had been together for a shorter period, there were strong main actor effects that were not qualified by an interaction; that is, actors who reported high levels of gratitude were higher in satisfaction, both at baseline and at the follow-up, and remained more committed and grateful at the follow-up regardless of their partner's levels of gratitude.

On the other hand, for those who had been in relationships for longer, there were significant interactions between actor and partner gratitude (except for the model predicting follow-up commitment), which were probed and are summarized in Table S13. As illustrated in Figure S1, the pattern of interactions suggests that having a partner high (vs. low) in gratitude buffered against lower(ed) relationship quality associated with being less grateful.

Table S12

Summary of the Moderating Effect of Relationship Length on the Links Between Partners'

Gratitude and Relationship Outcomes

	Shorter relationship			Longer relationship		
	<i>b</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>p</i>
Satisfaction; interaction $b = -0.02, t = -2.40, p = .02$						
Gratitude	0.58	14.54	< .001	0.52	12.47	< .001
Gratitude (P)	0.19	4.69	< .001	0.27	7.04	< .001
Gratitude \times Gratitude (P)	-0.15	-3.63	< .001	-0.27	-7.04	< .001
Follow-up Satisfaction; interaction $b = -0.02, t = -2.80, p = .005$						
Gratitude	0.10	2.03	.04	0.02	0.51	.61
Gratitude (P)	0.11	2.47	.01	0.05	1.27	.20
Gratitude \times Gratitude (P)	0.07	1.56	.12	-0.08	-1.79	.07
Follow-up Commitment; interaction $b = -0.02, t = -2.71, p = .007$						
Gratitude	0.22	4.02	< .001	-0.01	-0.21	.83
Gratitude (P)	0.09	1.78	.08	-0.03	-0.56	.58
Gratitude \times Gratitude (P)	0.03	0.55	.59	-0.15	-2.85	.005
Follow-up Gratitude; interaction $b = -0.01, t = -2.34, p = .02$						
Gratitude	0.69	18.66	< .001	0.64	18.54	< .001
Gratitude (P)	0.17	4.55	< .001	0.08	2.31	.02
Gratitude \times Gratitude (P)	0.03	0.72	.47	-0.07	-2.17	.03

Note. (P) = Partner's report. The three-way interaction (between actor, partner gratitude, and relationship length) coefficients are provided next to the outcome of each model.

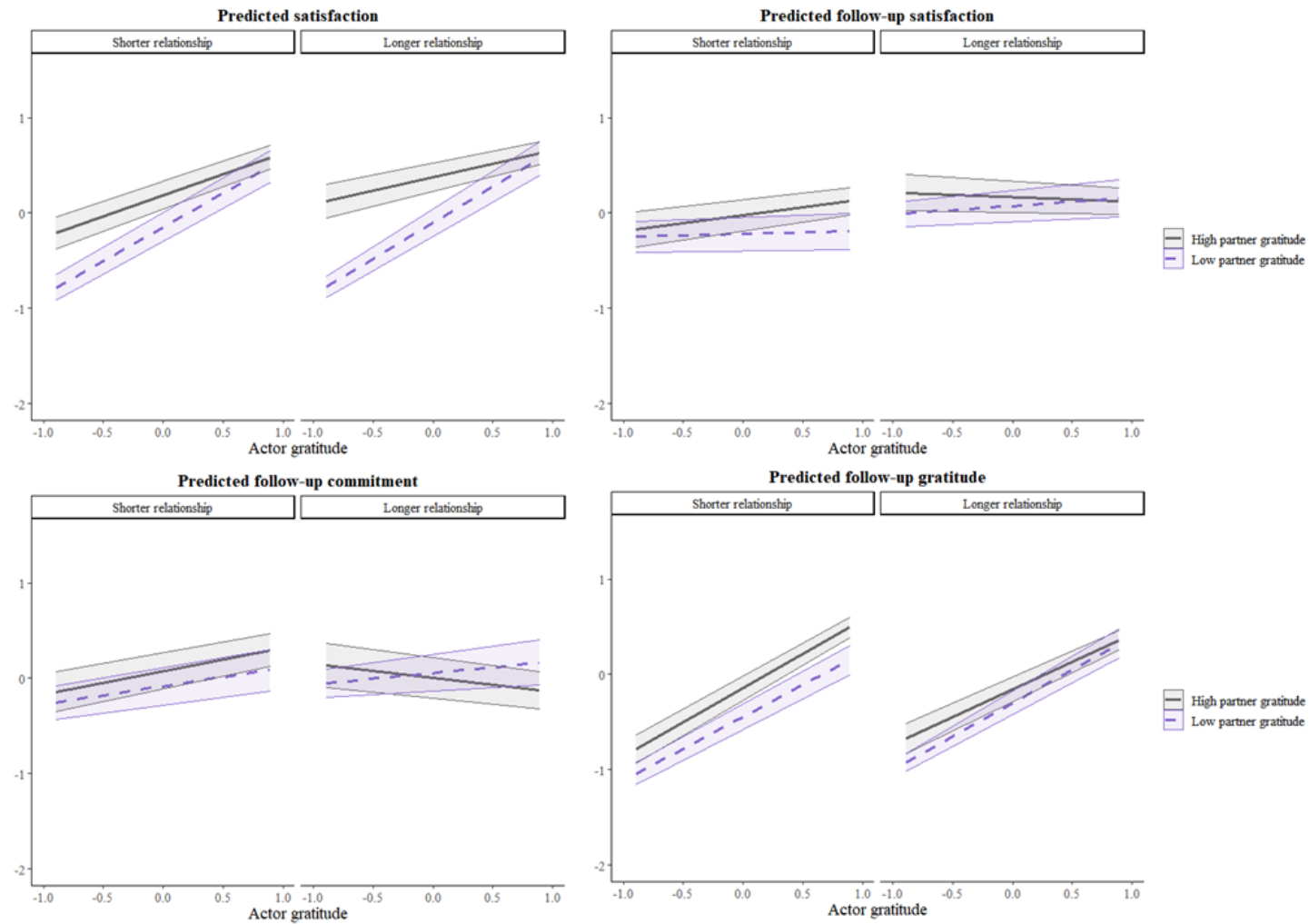
Table S13

Simple Slope Analyses on the Actor \times Partner gratitude Interactions Among Individuals in Longer Relationships

	Partner high in gratitude			Partner low in gratitude		
	<i>b</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>t</i>	<i>p</i>
Satisfaction						
Gratitude	0.28	5.49	< .001	0.76	14.62	< .001
Follow-up Commitment						
Gratitude	-0.15	-1.95	.05	0.12	1.80	.07
Follow-up Gratitude						
Gratitude	0.58	12.81	< .001	0.70	15.74	< .001

Figure S1

Three-way interactions between actor, partner gratitude and relationship length



D. Interpretation of the coefficients (Part 2)

As summarized in Table 5 in the main manuscript, there was no evidence for a similarity effect (e.g., a_4 was not significant) in any of the models. Thus, we describe a subsequent exploratory interpretation of the coefficients. These coefficients can help us gain a nuanced understanding of the actor and partner effects found in Part 1.

How are actor and partner gratitude interactively related to satisfaction at baseline? Results from a model predicting baseline satisfaction showed positive main effects of actor and partner gratitude, which tended to diminish in strength at higher levels of actor and partner gratitude, respectively (significantly positive b_1 and b_2 , significantly negative b_3 and b_5 ; see Figure 2A). We examined whether these diminishing effects even led to a reversal of the positive effect at very high, but still realistic, levels of actor or partner gratitude (i.e., predictor combinations that lie within the area marked by a black line in Figure 2A). Ninety five percent of the data points were located within the rising area of the curvilinear surface, which suggests that for most of our participants, higher levels of one's own or the partner's gratitude were associated with greater satisfaction.

How are actor and partner gratitude interactively related to satisfaction over time? In a model predicting satisfaction at follow-up (controlling for baseline satisfaction), there was an inverted U-shaped partner effect such that higher levels of partner gratitude were associated with greater satisfaction up to a certain point, after which higher partner gratitude was associated with less satisfaction (significant $b_2 > 0$ and $b_5 < 0$; Figure 2B). That is, rather than having a more grateful partner being linearly associated with increases in satisfaction on the actor's part, there was an optimal level of partner gratitude related to the greatest increases. This optimal level was positioned slightly above the average level of partner gratitude (i.e., slightly above a value of 0 in the centered data).

How are actor and partner gratitude interactively related to commitment at

baseline? Results from a commitment model showed a positive actor effect that diminished at high levels of actor gratitude (significant $b_1 > 0$ and $b_3 < 0$), indicating that higher levels of actor gratitude were associated with greater commitment (Figure 2C). There was also an inverted U-shaped partner effect similar to the follow-up satisfaction model such that having a more grateful partner was associated with actors' greater commitment only up to a certain point. This point was positioned at about the average level of partner gratitude (i.e., a value of 0 in the centered data), as the linear term coefficient b_2 was non-significant.

How are actor and partner gratitude interactively related to commitment over time? Results from the model predicting follow-up commitment (controlling for baseline commitment) revealed a positive linear actor main effect such that higher gratitude at baseline was associated with greater increases in commitment by the follow-up (significant $b_1 > 0$; Figure 2D).

How are actor and partner gratitude interactively related to gratitude at the follow-up? Lastly, in the model with gratitude at the follow-up as an outcome, there was a monotonously positive effect of actor gratitude that diminished at higher levels of actor gratitude (significant $b_1 > 0$ and $b_3 < 0$; Figure 3). Further, partner gratitude had a positive linear main effect, indicating that having a grateful partner was associated with being more grateful at the follow-up. In sum, our results suggest that irrespective of the degree to which two partners' levels of gratitude are similar, those who were more grateful or who had a more grateful partner reported higher levels of gratitude at the follow-up.

Taken together, our results did not provide support for a similarity effect. In all models (except the one predicting follow-up satisfaction), what consistently emerged was an effect of actor gratitude. Thus, our data do not seem to suggest that partner's low levels of gratitude can meaningfully curb any positive links between actor's high levels of gratitude and their concurrent and future relationship outcomes.