

# Shared everyday decisions and constructive communication: Protective factors in long-distance romantic relationships<sup>1</sup>

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## Abstract

This study applied an attachment framework to explore whether shared everyday decisions (SHARED) and constructive communication during conflicts serve as protective factors for relationship quality and stability in a sample of 971 individuals in long-distance relationships (LDRs). The behaviors were found to partially and differentially mediate the association between attachment orientations and relationship outcomes. While SHARED was more strongly linked to commitment than to relationship satisfaction, the reverse was found for constructive communication. Only SHARED was found to predict relationship stability over and above attachment when relationship length was controlled for. The findings suggest that attachment anxiety and avoidance influence relationship quality and stability partly through the two communicative behaviors in LDRs, with especially SHARED emerging as a potent protective factor for positive relationship development in long-distance relationships.

**Keywords:** long-distance relationships; attachment; communication style; relationship maintenance; marital satisfaction; commitment

As long distance relationships (LDRs) are becoming increasingly common in Western cultures (Guldner, 2003), in the past two decades relationship researchers have started to explore characteristics of long-distance romantic relationships and related indicators of relationship functioning. Mainly, studies have focused on the comparison of LDRs with proximal relationships (PRs) regarding relational outcomes such as commitment (e.g., Dellman-Jenkins, Bernard-Paolucci, & Rushing, 1994), relationship satisfaction (Guldner & Swensen, 1995; Stafford & Reske, 1990), and stability (Stafford & Merolla, 2007; Van Horn et. al, 1997).

However, despite being the most vital component of long-distance relationships' everyday life, not much is known about LDRs' communicative behavior beyond

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frequency and quality (see Sahlstein, 2000, for a review), such as individual variability in communication patterns and related consequences for the quality of the relationship.

The attachment behavioral system is responsible for maintaining proximity to attachment partners (Bowlby, 1980; Fraley & Shaver, 1998) and remarkably influences behavioral strategies in relationships (e.g., Gillath & Shaver, 2007). For LDRs, we assume that attachment orientations play an important role by regulating communicative behaviors with the partner. Although communication is essential to every relationship (Duck, 1995), in LDRs it has to be established through partners' efforts and might explicitly be used to fulfill attachment needs. As attachment is further predictive of relationship quality in itself (e.g., Hazan & Shaver, 1987; Kirkpatrick & Davis, 1994), this study suggests that the association between attachment orientations and relationship quality is mediated by two communicative behaviors in LDRs that are protective in that they ensure perceived emotional availability of the partner: shared everyday decisions (SHARED) and constructive communication during conflicts.

#### *Attachment in Long-distance Relationships*

Since Hazan and Shaver's (1987) first publication on attachment in the context of romantic relationships, partner attachment and related aspects of relationship quality have been extensively investigated (e.g., Collins & Read, 1990; Kirkpatrick & Davis, 1994; Mikulincer & Shaver, 2003). Partners in romantic relationships are assumed to function as a secure base for exploration and a safe haven in the face of threats for each other (Bowlby, 1980). Partner availability, i.e., attentiveness, and responsiveness in times of need are considered to be the crucial factors that foster feelings of attachment security.

People have also been found to differ in their expression of attachment related needs and behavioral strategies when the partner seems unavailable (Mikulincer, Shaver, & Pereg, 2003). Attachment is usually conceptualized in terms of two basic attachment dimensions that are both rather detrimental to relationship quality in PRs, (e.g., Mikulincer & Shaver, 2007) namely anxiety and avoidance. Anxiety is characterized by a need for closeness and reassurance, constant worries about the availability of the partner and displays of clingy behavior. Avoidance is related to self-

reliance, emotional distancing, limited self-disclosure to the partner, and suppressing attachment related thoughts and feelings (e.g., Brennan, Clark, & Shaver, 1998), Shaver & Mikulincer, 2002).

Following the thought that partner availability is central to the fulfillment of attachment needs, the physical separation of LDR partners should pose a threat to partners' emotional well-being and relationship quality. This could be shown using both physiological and self-report measures (Cafferty, Davis, Medway, O'Hearn, & Chappell, 1994; Feeney & Kirkpatrick, 1996). In a review by Vormbrock (1993) findings from a number of very early and mostly qualitative studies document effects of recurring separations from the partner. In most cases, this referred to women with husbands whose professions implied longer phases of absence from home. A variety of symptoms indicative of lowered emotional well-being and poorer relationship functioning in those couples were found both during times together and apart.

In contrast, more recent studies suggest that LDRs are no more likely to end their relationships than PR partners (e.g., Stafford & Merolla, 2007; Van Horn et al. 1997), have equal commitment levels (Baxter & Bullis, 1986; Dellman-Jenkins, Bernard-Paolucci, & Rushing, 1994), and were, in most studies, found to be equally satisfied with their relationship (e.g., Guldner & Swensen, 1995, Stafford & Reske, 1990).

One possible explanation of this discrepancy in the findings could be that the low to no possibility to establish contact to the partner in the early studies caused intense and chronic distress because partner availability was severely hindered, if not completely prevented. In contrast, nowadays LDRs have a wide range of opportunities to interact during times of separation, which enables the partners to turn to each other if needed. Shaver and Mikulincer (2002) stress that availability in attachment theory does not necessarily refer to physical presence, but rather to the perception of partner availability. We therefore argue that in LDRs this perception depends on the partners' efforts to establish availability by the means of communication. Döring and Dietmar (2003), who investigated associations of attachment with media use in LDRs, found that regardless of communication frequency mobile communication (mobile phone, text messages) was especially used in attachment situations, i.e., when one of the partners needed help, comfort, or reassurance. This finding indicates that communication has potential to satisfy attachment needs by securing availability of the partner.

### *Communication in Long-distance Relationships*

Communication in romantic relationships in general has received considerable attention in the literature due to the substantial role it is assumed to play for relationship development, maintenance and possible dissolution. Daily interaction has been described as the essence of a relationship; Duck (1995) claimed that couples “talk their relationships into being”. With respect to LDRs, assuming this centrality of communication led to a focus on the discrepancy between the largely comparable relationship outcomes of LDRs and PRs despite the differences in frequency of contact between the two forms of partnership.

Stephen (1986) found that restricted communication like in LDRs strengthens the relationship between contact frequency and the degree of symbolic interdependence, i.e., a shared world view that serves as a strong bond between the partners. This finding was extended by Stafford and Reske (1991), who proposed that the restricted interaction and hence limited access to the partner’s behavioral repertoire in LDRs is associated with positive relational images. Their results supported the notion that being in a LDR seems to facilitate idealization of the partner and the relationship, thereby pushing relationship satisfaction up to or even above the level of PRs. Symbolic interdependence and idealization hence seem to successfully compensate for aspects of everyday life that LDRs lack in comparison to PRs.

Although these findings advance our understanding of general mechanisms by which LDRs are able to maintain and develop a positive relationship with their partner, they do not tell us about everyday behavior that has the potential to maintain a sense of relation to the partner when he or she is not actually present.

Sigman (1991) stressed that LDR partners as well as PR partners need to generate behaviors that help to keep the relationship present and real when partners cannot communicate as frequently as they wish. Especially for LDRs, those behaviors should be able to maintain a structure of reference and provide a sense of security, commitment, and “togetherness” for the partners in times of limited interaction.

### *SHARED and constructive communication*

For the present study, in line with the aforementioned, we wanted to identify protective communicative behaviors that a) had a high likelihood to be engaged in when the attachment system is activated. As Kobak and Duemmler (1994) noted, three types of situations tend to do that: fear-provoking situations (motivating people to seek out attachment partners as safe havens), challenging situations (leading people to make contact with a secure base partner), and conflictual interactions (activating concerns about the partners' availability). The behaviors should b) also address mutuality or balanced communication in LDRs as partner availability requires one partner to request availability and the other to comply. Lastly, they should c) have the potential to influence the partners' sense of connectedness over and above a specific interaction, such that the perception of a secure base is constructed.

Shared everyday decisions (SHARED), was developed for the purpose of this study. It refers to the current involvement of the partner in everyday decisions referring to topics such as the how and when of communication, finances, dealing with responsibilities and potential other partners, or the future of the relationship. SHARED therefore addresses challenging situations that could, but do not have to be solved with the partner's help, and measures the degree to which the partners initiate and accept mutual influence in their own everyday life routine. We argue that this secures a perception of partner availability and responsiveness by strengthening everyday connectedness and mutual long-term planning between the partners.

SHARED should therefore benefit the outcome variables in this study assessing relationship quality (relationship satisfaction and commitment) and stability. While SHARED is likely to be engaged in in attachment situations, individuals high in anxiety or avoidance should differ in their attempts to do so. Anxiety is characterized by generalized concerns about the availability of the partner and proximity maximizing strategies, which should elicit frequent attempts to establish closeness, involve the partner, and ask for advice or help. Avoidance, in contrast, is characterized by self-reliant, distancing, and low self-disclosure behavior, and should be negatively related to including the partner in everyday decisions.

The second behaviour, constructive communication, addresses how LDR partners

deal mutually and positively with conflictual situations when partner availability is further endangered. Conflict management has been shown to be a crucial element of communication, with partners developing certain styles over time that are characteristic for their behavior during conflicts (e.g., Christensen, 1988). In PRs, constructive conflict styles have been shown to be strong and consistent predictors of relationship quality (e.g., Stafford & Canary, 1991). To our knowledge, so far only one study by Stafford and Merolla (2007) addressed conflict management in LDRs. They found that LDR partners, compared to PRs, tend to rate their conflict management abilities and perceived communication quality higher. Interestingly, this could be predicted from the degree of idealization. This finding suggests that constructive communication during conflicts could be a powerful protective mechanism for relationship quality in LDRs by ensuring minimal negativity and fast resolution through balanced and mutually established communication, thereby re-establishing partner availability. Here, we therefore focused on constructive communication, rather than including other, more imbalanced or negative styles.

Because constructive communication in LDRs conveys the security that the partner is attentive, responsive, and positive even in difficult situations, we hypothesized that it transfers not only to higher relationship satisfaction, but also to higher commitment and the stability of the relationship. With regard to the attachment orientations, we expected both anxiety and avoidance to relate to lower constructive communication, as has been found in PRs (Mikulincer & Nachshon, 1991; Feeney, Noller, & Callan, 1994). In line with previous research, both attachment anxiety and avoidance are also expected to be negatively related to the three outcome variables (e.g., Feeney, 2002). Summing up:

The aim of the present study was to extend previous research by investigating 1) whether attachment orientations would directly and differentially influence communicative behaviors, 2) indirectly affect relationship quality, and 3) whether the communicative behaviors would benefit relationship quality and stability in LDRs.

H1: Higher levels of SHARED and constructive communication are positively associated with relationship satisfaction, commitment, and stability.

H2: Avoidance is negatively related to both behaviors while anxiety is negatively related to constructive communication and positively to SHARED.

H3: Attachment avoidance and anxiety are negatively associated with relationship satisfaction, commitment and stability.

Taken together, we propose a mediational model where constructive communication and SHARED are proposed mediators for the association between attachment and relationship outcomes (see Baron & Kenny, 1986). The hypothesized model is displayed in Figure 1.

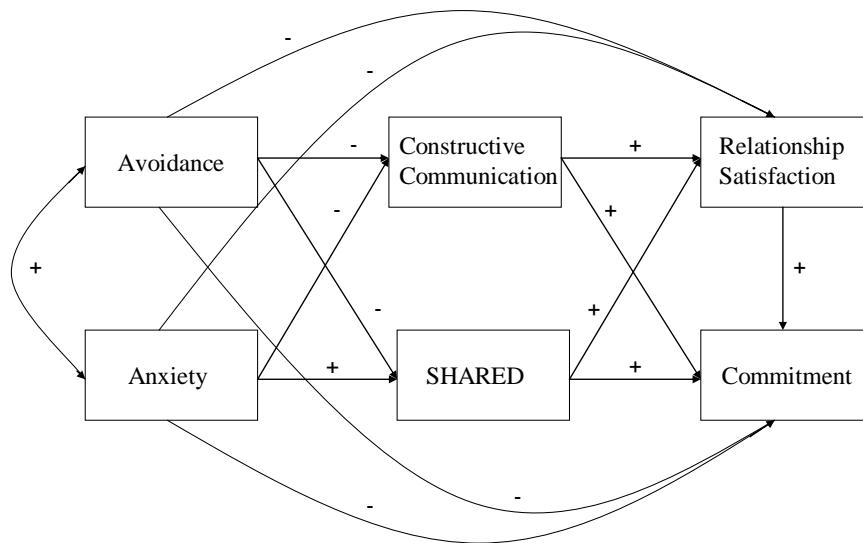


Figure 1. Hypothesized mediation model relating attachment, communication, and relationship outcomes.

## Method

### Sample

The study was conducted as an online questionnaire that could be entered through the online portal of the Department of Psychology, Humboldt University Berlin, Germany. A nationwide press release was published beforehand so that participants responded to various advertisements in newspapers, radio shows and online blogs

allover the country. This strategy ensured getting a sample with a great variety in regional diversity, age and relationship experience. The latter was considered an advantage because most of the LDR research has been conducted with undergraduate students with limited relationship experience that is therefore hard to generalize. Communication seems to be especially important in long-term relationships, as it has been found to become more varied and complex as relationship duration increases (Sanderson & Karetsky, 2002) and to become a stronger predictor of marital satisfaction in longer established relationships (Feeney, 2002). We encouraged participants to take part in the study if they (1) had two separate households and (2) would have difficulty visiting the partner and returning back to their own residence in one day. (1) was chosen to explicitly tap LDRs and avoid confounding LDRs with commuters whose lifestyle might have different implications for their relationships (Anderson & Spruill, 1993; Bunker, Zubek, Vanderslice & Rice, 1992). (2) was developed following Dellman-Jenkins, Bernard-Paolucci, and Rushing (1994) who first defined LDRs with the time criterion “could not see their partner every day if desired”. Our slightly altered definition takes relativity of distance depending on usual means of travel into account.

Out of the 1353 participants that had signed up for the study, we included only participants who (a) were at least 18 years old, (b) indicated to have a partner of the other sex, and (c) had no missings on all central variables, resulting in a final sample of 971 participants. The average age for participants was 29.09 (range= 18-65,  $SD = 8.61$ ), and the average length of the relationship was 2.85 years, ranging from 1 month to 34 years ( $SD = 3.18$ ).

Participants were contacted via email one year after the initial assessment and asked about whether they were still with the same partner, or had broken up. From the 971 participants at time 1, a total of 430 responded to the follow-up at time 2 one year later. Responders significantly differed from non-responders on most variables at time 1, in that they scored higher than non-responders in relationship satisfaction ( $t(940) = 2.74$ ,  $p < .01$ ;  $d = 0.18$ ), SHARED ( $t(940) = 3.62$ ,  $p < .001$ ;  $d = 0.24$ ), constructive communication ( $t(940) = 2.85$ ,  $p < .01$ ;  $d = 0.19$ ); and significantly lower in attachment anxiety ( $t(940) = -2.41$ ,  $p < .05$ ;  $d = -0.16$ ), and avoidance ( $t(940) = -3.27$ ,  $p < .001$ ;  $d = -0.21$ ). Due to this selective drop-out our analyses probably underestimate the respective effects although the effect sizes of the differences were small.



## Measures

Participants completed a shortened version of the Experiences in Close Relationships Questionnaire-Revised (ECR-R, Fraley, Waller, & Brennan, 2000; German version by Ehrental, Dinger, Lamla, Funken, & Schauenburg, 2009). The original 36-item self-report questionnaire was reduced to a 20-item version by choosing the 10 highest-loading items as reported by Ehrental et al. (2009) for the anxiety and avoidance dimension, respectively. Examples of avoidance items are “I get uncomfortable when my partner wants to be very close” and “It helps to turn to my romantic partner in times of need” (reverse scored). Examples of anxiety items include “I worry that romantic partners won’t care about me as much as I care about them” and “I rarely worry about my partner leaving me” (reverse scored). Participants answered on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses were then averaged across the 10 items for each dimension. Mean attachment anxiety and avoidance were 3.1 ( $SD = 1.4$ , Cronbach’s  $\alpha = .90$ ) and 1.9 ( $SD = 0.9$ ,  $\alpha = .84$ ), respectively.

We developed SHARED as an 8-item scale based on altered categories from Argyle and Furnham’s (1983) sources of conflict scale. Participants rated their current involvement of the partner in everyday decisions on a scale ranging from 1 (*not at all*) to 5 (*very much*) regarding categories such as “Finances”, “Planning of visits and activities”, “Common responsibilities”, “Long-term life planning”, or “Dealing with other potential partners” ( $M = 3.2$ ,  $SD = 0.7$ ,  $\alpha = .82$ ).

Mutual constructive communication was assessed with a 7-item subscale of the German version (Kröger et al., 2000) of the Communication Patterns Questionnaire (Christensen, A., 1988). The scale taps both partners’ perceptions of interaction patterns before, during, and after conflict. Examples of positive items include “When a problem in the relationship arises, both members try to discuss the problem” and “After the discussion both members think that the other has understood their position”. Participants rated each item on a 7-point Likert scale, ranging from 1 (*very unlikely*) to 7 (*very likely*). The scale score is calculated by adding up positive behaviors and subtracting demand-withdrawal as well as mutual avoidance items ( $M = 7.7$ ,  $SD = 7.2$ ). Internal consistency was  $\alpha = .78$  and corresponds to what Kröger et al. have found.

We measured relationship satisfaction with the German translation (Sander & Böcker, 1993) of Hendrick's (1988) Relationship Assessment Scale. The 7-item scale assesses overall relationship satisfaction, here on a 5-point scale, with items such as "How much do you love your partner?" and "To what extent has your relationship met your original expectations?", with higher scores reflecting higher relationship satisfaction. Mean satisfaction was 4.0 ( $SD = 0.7$ ,  $\alpha = .86$ ).

Commitment was assessed with the German version (Grau, Mikula, & Engel, 2001) of the 7-item scale from the Rusbult Investment Model (Rusbult, Martz & Agnew, 1998). Sample items are "I want our relationship to last forever" and "I would not feel very upset if our relationship would end in the near future." (reverse scored). In this sample, participants responded on a scale from 1 (*do not agree at all*) to 5 (*agree completely*). Mean commitment was 4.3 ( $SD = 0.7$ ,  $\alpha = .81$ ).

## Results

Means, standard deviations, and intercorrelations for all study variables as well as relationship length are presented in Table 1. Notably, the means for anxiety are somewhat higher than what previous studies have found (e.g., Butzer & Campbell, 2008; Sibley, Fischer, & Liu, 2005). To ensure that this was not due to the use of the abbreviated scale, we compared the LDR sample with a control sample of proximal relationships that had filled out the same ECR-R scale. We found that LDRs in fact scored significantly higher in attachment anxiety than their proximal counterparts even after controlling for relationship length by analysis of covariance ( $F(1, 1237) = 3.71$ ,  $p < .05$ ; effect size Cohen's  $d = 0.16$ ). The only significant sex difference was found for attachment avoidance, with males reporting greater avoidance than females,  $t(969) = 2.85$ ,  $p < .01$ ;  $d = 0.21$ .

Table 1. Correlations, descriptive statistics, and internal consistencies of all measures

	1.	2.	3.	4.	5.	6.	7.	8.
1. Anxiety	<b>.90</b>	.22**	-.13**	-.35**	-.49**	.03	-.12**	-.15**
2. Avoidance		<b>.84</b>	-.40**	-.43**	-.59**	-.50**	.14**	-.19**
3. SHARED			<b>.82</b>	.19**	.34**	.39**	-.05	.18**
4. Constructive communication				<b>.78</b>	.60**	.25**	-.17**	.08
5. Relationship satisfaction					<b>.86</b>	.50**	-.10**	.31**
6. Commitment						<b>.81</b>	-.04	.20**
7. Relationship length (in years)							-	.16**
8. Relationship stability								-
(0 = no, 1 = yes)								
Mean	3.11	1.93	3.20	7.68	4.00	4.30	2.85	-
SD	1.43	0.86	0.74	7.18	0.71	0.67	3.18	-

Note. Internal consistencies are displayed in bold along the diagonal.

No  $\alpha$  can be calculated for relationship length and stability.  $N=971$ , for stability  $N=429$ . \*\*  $p < .01$ .

### *Correlations among measures*

While more avoidant individuals demonstrated lower levels of relationship satisfaction and commitment to the relationship according to predictions, anxious individuals only reported lower relationship satisfaction. Attachment anxiety and avoidance were also both negatively related to SHARED and constructive communication, respectively. For anxiety, the negative association with SHARED was unexpected. In line with predictions, significant positive correlations between the two communicative behaviors and relationship satisfaction and commitment, as well as relationship stability indicate that their use is associated with higher relationship quality. Higher attachment avoidance and anxiety was associated with lower stability.

Relationship length was correlated with almost every variable and therefore statistically controlled for in all analyses. It was log-transformed prior to analysis due to its skewed distribution.

### *Mediation model*

Next, to determine whether constructive communication and SHARED were mediators in our model, structural equation modeling was used. First, to assess overall model fit, path analysis was used to test the model in which constructive

communication and SHARED mediate the association between both attachment orientations and the relationship outcomes satisfaction and commitment (see Figure 2).

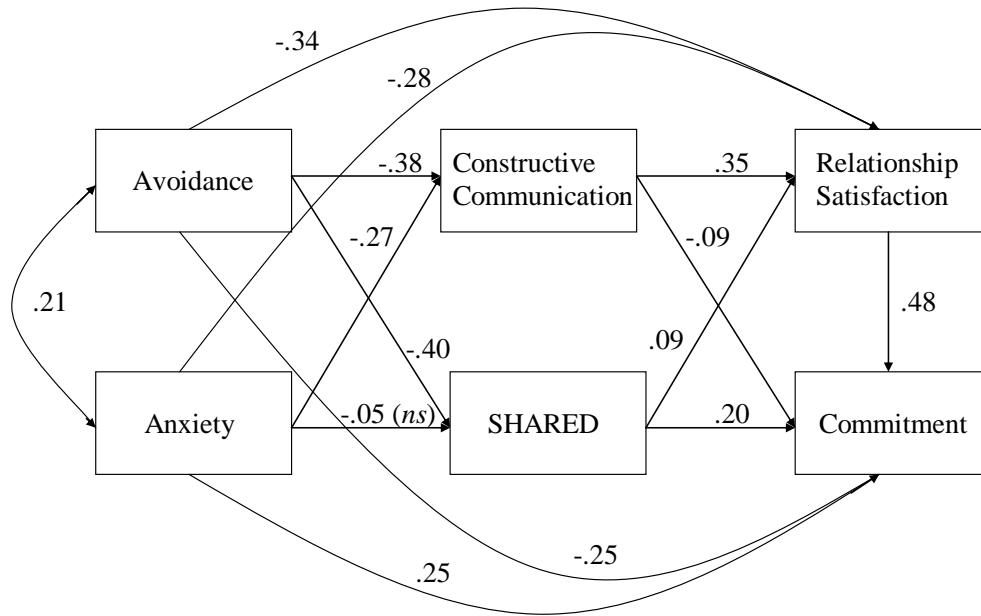


Figure 2. Standardized parameter estimates of the mediation model relating attachment, communication, and relationship outcomes.

The model was estimated using AMOS 7. When including relationship length as a covariate, the model fit was good,  $X^2(3) = 6.80, p = .08$ ; RMSEA = .036; CFI = .998. However, only the path to constructive communication was significant ( $-.16, p < .001$ ) and model fit was significantly better when the variable was left out, according to a chi-square difference test ( $X^2(2) = 6.79, p < .05$ ). The standardized path coefficients were virtually identical for the remaining variables; and therefore the results without relationship length will be reported here. The final model fitted the data very well,  $X^2(1) = .002, p = .961$ ; RMSEA = .0001; CFI = 1.0.

The attachment and communication variables accounted for 57% of the variance in relationship satisfaction and for 42% of the variance in commitment. While both attachment dimensions were significantly negatively related to relationship satisfaction, for commitment the association was negative for avoidance

and positive for anxiety, indicating that avoidant individuals tend to be less committed, while more anxious individuals tend to be more committed. This result is probably due to a suppressor effect of attachment avoidance, i.e., while anxiety has a zero correlation with commitment, once avoidance is taken into account in the path model, higher anxiety predicts higher commitment. Avoidance moreover had a strong direct negative effect on both constructive communication and SHARED. Anxiety had a direct negative effect on constructive communication as well, however no significant association with SHARED. This finding indicates that the negative correlation in Table 1 displays an indirect effect of avoidance as it is positively correlated with anxiety and stronger negatively with SHARED. While constructive communication was linked to both relationship satisfaction and commitment, the association with satisfaction was stronger and positive (.35), whereas the effect on commitment was small, but negative (-.09). Interestingly, for SHARED, the association with relationship satisfaction was positive but small (.09), whereas the effect on commitment was moderately strong and positive (.25). Finally, relationship satisfaction had a strong direct effect on commitment. Overall, the model was statistically significant and explained a considerable amount of variance. When constraining paths to be equal for men and women, the results of the path analyses with freed versus constrained paths yielded a non-significant difference,  $X^2(14) = 16.49, p > .05$ , suggesting that the model is invariant with respect to sex.

#### *Bootstrap analyses*

While AMOS can simultaneously evaluate models with several independent and dependent variables, and provides estimates and inferential tests for the total indirect effect of both mediators, it does not provide information about each path's unique contribution to the total indirect effect, i.e., the specific indirect effects. We therefore followed recommendations by Preacher and Hayes (2008) for evaluating multiple mediator models, and used their bootstrapping method for indirect effects based on 5000 bootstrap resamples to describe the confidence intervals of indirect effects such that no assumption about the distribution of the indirect effects is made. Interpretation of the bootstrap data relies on determining whether zero is contained

within the 95% confidence intervals. Four sets of models had to be run in order to obtain estimates for both sets of independent and dependent variables (see Table 2).

Table 2. Multiple mediation of the indirect effects of attachment anxiety and avoidance on relationship outcomes satisfaction and commitment through changes in constructive communication and shared everyday decisions (SHARED)

IV/DV	Multiple Indirect effects	Point estimate	BCa 95% CI	
			Lower	Upper
Anxiety/Satisfaction	Constructive communication	-.0452	-.0588	-.0343
	SHARED	-.0023	-.0062	.0005
	Total	-.0474	-.0613	-.0359
Avoidance/Satisfaction	Constructive communication	-.1055	-.1306	-.0812
	SHARED	-.0300	-.0471	-.0146
	Total	-.1355	-.1656	-.1049
Anxiety/Commitment	Constructive communication	-.0089	-.0183	-.0008
	SHARED	-.0052	-.0124	.0017
	Total	-.0141	-.0256	-.0030
Avoidance/Commitment	Constructive communication	-.0207	-.0408	-.0011
	SHARED	-.0707	-.0924	-.0521
	Total	-.0914	-.1188	-.0646

Note. BCa = bias corrected and accelerated bootstrapping confidence intervals that include corrections for both median bias and skew. Confidence intervals containing zero are not significant.

First, we entered relationship satisfaction as the dependent variable, and either attachment anxiety or attachment avoidance as a predictor while controlling for the other attachment dimension. Constructive communication and SHARED were entered as assumed mediators. The same procedure was then applied for commitment as the dependent variable. The bootstrap results for anxiety as the IV and relationship satisfaction as the DV indicated that constructive communication was a significant mediator, with a point estimate of  $-.0452$  and a 95% BCa (bias-corrected and accelerated) bootstrap confidence interval of  $-.0588, -.0343$ . SHARED, however, was not a significant mediator due to a point estimate of  $-.0023$  and a 95% BCa CI of  $-.0062, .0005$ . For avoidance as the IV and relationship satisfaction as the DV both mediators were significant (constructive communication point estimate  $-.1055$ ; BCa CI of  $-.1306, -.0812$ ; and SHARED point estimate  $-.0300$ ; BCa CI of  $-.0471, -.0146$ ).

When repeating the analysis with anxiety as the IV and commitment as the DV, again constructive communication was a significant mediator, point estimate  $-.0089$  and a BCa CI of  $-.0183, -.0008$ , whereas SHARED was not, point estimate  $-.0052$

and BCa CI of -.0124, .0017. Lastly, for avoidance, both mediators were significant (constructive communication point estimate -.0207; BCa CI of -.0408, -.0011; and SHARED point estimate -.0707; BCa CI of -.0924, -.0521).

In sum, the bootstrap analyses indicate that while constructive communication mediates both between anxiety and the outcomes and avoidance and the outcomes, SHARED only mediates the link between avoidance and relationship outcomes.

### *Predicting relationship stability*

Next we addressed Hypotheses 1 and 3 concerning the prediction of the stability of the relationship. We performed a series of hierarchical logistic regressions with relationship stability as the dependent variable. To test Hypothesis 1 addressing the predictive power of SHARED and constructive communication, relationship length was entered as a control in the first step, and both SHARED and constructive communication were entered in the second step. The overall model was significant according to the model chi-square statistic,  $X^2(2) = 19.36$ ,  $p < .001$ , hence, an improvement over the null model was confirmed. The model predicted 80% of relationship status at time 2 correctly and the inferential goodness-of-fit test Hosmer-Lemeshow (H-L test) yielded a  $X^2(8) = 4.42$  and was not significant ( $p > .05$ ), indicating good model fit. Relationship length ( $p < .001$ ) as well as SHARED ( $p < .001$ ) were found to be significant predictors of stability whereas constructive communication ( $p = .075$ ) was not.

Next, to see whether the attachment orientations predicted stability at time 2, anxiety and avoidance were entered in step two after controlling for relationship length. Overall goodness-of-fit was adequate, H-L test  $X^2(8) = 5.14$ ,  $p > .05$ , and the model chi-square statistic significant,  $X^2(2) = 23.10$ ,  $p < .001$ . In line with expectations, avoidance ( $p < .001$ ) was a significant negative predictor of stability, whereas anxiety ( $p = .055$ ) was only marginally significant.

In a last model, constructive communication and SHARED were entered in step three after relationship length in step one and the attachment orientations in step two to determine whether they predicted stability over and above the attachment orientations (Table 3). The results indicate good model fit, H-L test  $X^2(8) = 8.63$ ,  $p > .05$  and

improvement over the null model,  $X^2(2) = 6.71, p < .05$ . Again, relationship length was a significant predictor of stability ( $p < .001$ ) and avoidance a significant negative predictor ( $p < .01$ ). Anxiety also reached significance in this model ( $p = .05$ ). While constructive communication was again not significant as a predictor variable, SHARED was ( $p < .01$ ), suggesting predictive power for relationship stability even when controlling for differences in attachment orientations and length of the relationship.

Table 3. Summary of hierarchical logistic regression predicting relationship stability from relationship length, attachment, and communication

Step		$\beta$	SE	Odds ratio	Wald statistic	df	p
1	Relationship length	.49	.13	1.63	13.25	1	
2	Relationship length	.53	.14	1.70	14.42	1	.000
	Anxiety	-.17	.09	0.84	4.14	1	.042
	Avoidance	-.60	.14	0.55	17.30	1	.000
3	Relationship length	.53	.15	1.70	13.17	1	.000
	Anxiety	-.18	.09	0.84	3.75	1	.053
	Avoidance	-.48	.17	0.62	8.04	1	.005
	SHARED	.48	.19	1.62	6.46	1	.011
	Constructive communication	-.005	.02	0.99	0.06	1	.808
Test					$\chi^2$	df	p
Likelihood ratio test					6.71	2	.035
Hosmer & Lemeshow					8.63	8	.375

To check whether the final model, i.e., predicting stability from SHARED and constructive communication while controlling for attachment, improved model fit compared to the model with attachment only, the difference in the -2 Log likelihood (-2 LL) of both models was computed. The difference between -2LL values for models with successive terms has a chi-square distribution, which allows to test whether adding one or more additional predictors significantly improves the fit of the model. Here, the difference between the models was significant,  $X^2(2) = 14.19, p > .001$ .

In summary, attachment avoidance was found to be a significant negative predictor of relationship stability, and attachment anxiety a marginally significant negative predictor one year after the first assessment when differences associated with relationship length were controlled for. SHARED was found to be a powerful positive predictor of stability, even after controlling for both relationship length and attachment orientations.



## Discussion

The present study is the first one to address communication-related processes in romantic long-distance relationships within an attachment framework. It extends previous literature by examining protective communicative behaviors beyond communication frequency and perceived quality, thereby taking interindividual variability into account. We found that while attachment avoidance and anxiety were, with two exceptions, negatively related to communicative behaviors and relationship outcomes, SHARED and constructive communication mediated the association between attachment avoidance and both relationship satisfaction and commitment. Only constructive communication also mediated the association between attachment anxiety and relationship outcomes. SHARED had a stronger positive association with commitment, whereas constructive communication had a stronger positive association with relationship satisfaction. Moreover, SHARED served as a powerful protective factor for positive relationship development, as it was predictive of relationship stability after controlling for differences in attachment orientations and length of the relationship. Below, we discuss the patterns of findings with regard to the hypotheses in more detail.

### *Communicative behaviors and relationship quality and stability*

Both SHARED and constructive communication were significantly associated with relationship satisfaction and commitment, indicating that their use relates to higher relationship quality. However, results differed from predictions in the behaviors' distinctive power to predict relationship outcomes. In particular, SHARED was more predictive of commitment than of relationship satisfaction, whereas constructive communication was more predictive of satisfaction and even slightly negatively related to commitment. This suggests that, in LDRs, constructive communication in conflict situations directly benefits relationship satisfaction but has only very little influence on commitment to the relationship. As LDRs have been found to report higher relational insecurity than PRs (Cameron & Ross, 2007; Van Horn et al., 1997), it might be that arguments are perceived to be more harmful with regard to relationship maintenance. Good conflict management skills and resolved conflicts might therefore, on the one

hand, contribute to satisfaction with the relationship but on the other hand maintain or even inflate the level of relational insecurity, and hence not benefit commitment to the relationship.

In contrast, the results for SHARED indicate a direct positive effect on commitment and a small positive effect on satisfaction, suggesting that mutual negotiation of everyday decisions might indeed facilitate establishing a long-term bond and everyday connectedness between partners. For LDRs, this might contribute to the feeling of a shared everyday life, increasing relational security and result in higher commitment to the relationship. A possibility is that SHARED is perceived as an indicator of investment in LDRs that can be observed by the partners on a day-to-day basis.

Regarding relationship stability, only SHARED was a significant predictor, and it was so even after controlling for differences in relationship length and attachment orientations. This finding, besides underlining the established link between commitment and stability (e.g., Rusbult, Martz, & Agnew, 1998), again supports the notion that SHARED might increase relational security among LDRs by ensuring partner availability and therefore serves as a protective factor for relationship development in LDRs. Contrary to expectations, constructive communication had no predictive power for relationship stability. The reasons seem to be the same as for the results concerning the link between constructive communication and commitment.

#### *Attachment and communicative behaviors*

As expected, attachment avoidance showed a negative association with both constructive communication and SHARED. Avoidant partners hence tend to be less constructive in conflict situations and involve their partner less in everyday decision making. This finding supports previous results that show that avoidance is related to limited self-disclosure and heavy self-reliance (Mikulincer & Shaver, 2002). For anxiety, the expected negative association with constructive communication could be confirmed, whereas the hypothesized positive association to SHARED could not. In fact, the latter was the only non-significant path in our model. This finding indicates that although more anxious partners would probably like to use SHARED because of their

need for closeness and reassurance, they do not manage to realize it. Maybe involving the partner in everyday decisions for attachment anxiety depends on how much the partner involves, in turn. It has been shown that anxious attachment is linked to constant monitoring of the partner and that evaluation of the relationship is very reactive to recent events (e.g., Mikulincer & Shaver, 2003). It could be that SHARED is therefore used inconsistently and in reaction to current partner behavior. The tendency to demand could also lead to asking the partner for SHARED while not complying with it oneself.

Notably, there were also large differences in the associations between attachment and the communicative behaviors. It seems that although attachment insecurity in general is related to less use of these protective behaviors, more avoidant individuals still use them significantly less than more anxious individuals, which points to avoidant individuals in LDRs being more at risk for negative relationship development than more anxious individuals.

#### *Attachment and relationship quality and stability*

The above view was also supported by the results concerning the association between attachment orientations and relationship stability. Avoidance was a strong negative predictor of relationship stability, whereas anxiety was only a marginally significant negative predictor one year after the first assessment.

In line with previous research, both attachment anxiety and avoidance were negatively related to relationship satisfaction as expected. Attachment insecurity in general can therefore be assumed to be detrimental to relationship satisfaction in LDRs. With regard to commitment, the association with avoidance was also significantly negative as hypothesized, suggesting that more avoidant individuals tend to be less committed. In contrast, anxiety predicted commitment positively, indicating that more anxious individuals in LDRs tend to be more committed. The positive link between anxiety and commitment, although contrary to findings in PRs (e.g., Simpson, 1990) also helps to explain why anxiety does not show a similarly negative association with stability as avoidance. Recently, it was also found that commitment can successfully buffer the negative effects of anxiety (Tran, Simpson, 2009).

### *Communicative behaviors as mediators*

In line with our hypotheses, constructive communication and SHARED served as mediators for the association between attachment and relationship outcomes. While constructive communication mediated both between anxiety and the outcomes and avoidance and the outcomes, SHARED mediated only the link between avoidance and relationship outcomes. This latter finding can be attributed to the non-significant association between attachment anxiety and SHARED already discussed. Altogether, attachment orientations could be shown to exhibit differential indirect effects on relationship outcomes through the two communicative behaviors.

### *Limitations and directions for future research*

While our study has many strengths such as the large sample size drawn from the general population and the prospective study of LDR development, a limitation is the assessment of only one partner from each LDR dyad which did not enable us to detect possible partner effects which could, for example, identify factors that might explain the finding why anxiety was not significantly linked to SHARED. For example, while highly anxious individuals with secure partners might be able to include them in their daily decisions due to the positive feedback they receive, that might not be the case for anxious individuals with a highly avoidant partner, whose lack of interest might frighten off. The partner might hence play a role in amplifying or attenuating effects. This question could also be addressed by using a longitudinal study setup with many time points which would allow for an observation of the temporal dynamics associated with these processes. Another limitation is the possibility of a self-selection bias. The participants who responded to the press release might have been happier with their relationships in the first place. Also, participants who took part in the follow-up assessment after one year significantly differed from those who did not on almost all of the variables at time 1. Individuals whose relationship development was less successful might therefore have been underrepresented at time 2, resulting in an underestimation of the respective effects.

An additional limitation is the anonymity of the questionnaire. Although we included checks to make sure no participant could participate in the study twice and offered several incentives to reduce random clicking and the occurrence of social desirability responses, we cannot fully exclude the possibility that this still happened.

Future research could address further possible protective factors or potential risk factors for relationship development in LDRs. Although a considerable amount of the variance in the outcome variables could be explained, there are probably more crucial predictors of relationship satisfaction and commitment as well as stability than we could consider here. As our study indicates compensatory effects of the protective communicative factors, it would also be interesting to investigate what happens when aspects in LDRs cannot be compensated for, such as in the domain of sexuality.

Despite these limitations, the present study made a contribution to the literature by demonstrating the relationship between attachment, communication structures, and relationship quality and development in LDRs. First, the study addressed an important limitation of previous research by investigating a diverse LDR sample with a large variance in relationship experience. Notably, relationship length was associated with more avoidance and less anxiety, and emerged as a strong predictor of stability. Second, the reported findings indicate that the investigated communicative behaviors, especially SHARED, can serve as powerful protective factors for relationship quality and development in LDRs, and clarify the role of interindividual differences in attachment orientations for the use of communicative behaviors and relational success in LDRs.

Importantly, it is possible that the same patterns of associations could also have been found in samples of PR, as SHARED and constructive communication can be imagined to benefit every relationship regardless of its circumstances. However, the emphasis of this study was not on contrasting LDR and PR relationship processes. Rather, we wanted to understand distinct behaviors that might act as protective factors in LDRs by ensuring perceived partner availability. Although we did not observe or experimentally manipulate whether the two behaviors were engaged in attachment situations, the powerful associations found in this study between the two behaviors and attachment on the one side and relationship quality on the other side support the notion that communication is one important route for LDRs to establish and maintain significant attachment bonds.

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