

Actor and Partner Effects of Self-Esteem on Relationship Satisfaction  
and the Mediating Role of Secure Attachment Between the Partners

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## Abstract

We examined actor and partner effects of self-esteem on relationship satisfaction, using the actor-partner interdependence model and data from five independent samples of couples. The results indicated that self-esteem predicted the individual's own relationship satisfaction (i.e., an actor effect) and the relationship satisfaction of his or her partner (i.e., a partner effect), controlling for the effect of the partner's self-esteem. Gender, age, and length of relationship did not moderate the effect sizes. Moreover, using one of the samples, we tested whether secure attachment to the current partner (assessed as low attachment-related anxiety and avoidance) mediated the effects. The results showed that attachment-related anxiety and avoidance independently mediated both the actor and the partner effect of self-esteem on relationship satisfaction.

*Keywords:* self-esteem, relationship satisfaction, relationship-specific attachment security, dyadic data analysis, actor-partner interdependence model

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Self-esteem may well be helpful in forming and maintaining a satisfying romantic relationship and marriage. Research suggests not only that self-esteem is correlated with satisfaction in relationships (e.g., Sciangula & Morry, 2009; Voss, Markiewicz, & Doyle, 1999), but also that self-esteem predicts increases in relationship satisfaction over time (Orth, Robins, & Widaman, 2012). However, relationships are of a dyadic nature and therefore an important question is whether a person's self-esteem contributes not only to his or her own relationship satisfaction, but also to his or her partner's satisfaction with the relationship. Surprisingly, only little is known about the partner effect of self-esteem on relationship satisfaction. The present study extends previous research by systematically examining whether a person's self-esteem predicts his or her own relationship satisfaction (i.e., whether self-esteem has an actor effect) and his or her partner's relationship satisfaction (i.e., whether self-esteem has a partner effect), using five independent samples of couples. In addition, the present study tests a possible mediating mechanism, namely whether secure romantic attachment between the partners mediates the actor and partner effects of self-esteem on relationship satisfaction.

**Self-Esteem and Relationship Satisfaction**

Previous research suggests that self-esteem is positively related to relationship satisfaction (Fincham & Bradbury, 1993; Murray, Holmes, & Griffin, 1996a, 1996b; Sciangula & Morry, 2009; Shackelford, 2001; Voss et al., 1999; but see Cramer, 2003). Moreover, in a longitudinal study with several waves of data across 12 years, self-esteem consistently predicted increases in relationship satisfaction, controlling for previous levels of relationship satisfaction; conversely, being in a satisfying relationship did not predict increases in self-esteem (Orth et al., 2012). Similarly, another longitudinal study found that self-esteem was related to later relationship

satisfaction in both men and women, whereas relationship satisfaction was related to later self-esteem only in men (Fincham & Bradbury, 1993). Thus, the available findings suggest that self-esteem might have a positive influence on the development of satisfaction in marriage and close relationships.

Few studies however have examined whether the individual's self-esteem affects the relationship satisfaction of his or her relationship partner. Using a sample of young dating couples, Robinson and Cameron (2012) found significant actor and partner effects of self-esteem on relationship satisfaction and commitment. Murray, Holmes, and Griffin (1996b) also examined a sample of young adults, but found that only women's self-esteem but not men's self-esteem had a partner effect. Murray, Holmes, and Griffin (2000) later examined dating and married couples, reporting a small but significant partner effect. Finally, using a sample of dating couples from the college context, Jones and Cunningham (1996) did not find evidence of a partner effect. In sum, although few previous studies examined the partner effect of self-esteem on relationship satisfaction, the available evidence is inconsistent. Moreover, a limitation of previous research is that it does not provide information on the size of the actor and partner effects, either because no effect sizes are reported (Jones & Cunningham, 1996), no standardized effect sizes are reported (Robinson & Cameron, 2012), or because third variables are included in the analyses which may have biased the estimates of actor and partner effects (Murray et al., 1996b, 2000). Thus, the available evidence does not allow evaluation of the practical importance of actor and partner effects of self-esteem on relationship satisfaction. Another limitation of previous research is that nearly all of the studies examined samples of young adults involved mostly in dating relationships (the only exception being Murray et al., 2000). Therefore, in the present research we systematically test for actor and partner effects of self-esteem on relationship satisfaction using data from five independent studies. Importantly, the studies include different

types of couples (i.e., married, cohabiting, and dating couples), couples with differing lengths of relationship (ranging from a few weeks to several decades), and participants from different life stages (ranging from late adolescence to old age). The analyses will be based on the actor-partner interdependence model (Kenny & Cook, 1999). The model allows testing for dyadic effects between partners (i.e., partner effects), while controlling for the effects of each individual's own score on the predictor variable (i.e., actor effects).

As yet, only one study tested for a possible mediating mechanism that might account for actor and partner effects of self-esteem on relationship satisfaction. In this study, Murray et al. (2000) hypothesized that individuals with low self-esteem may be prone to develop unrealistic doubts about their partner's regard, which in turn undermines relationship well-being. In contrast, high self-esteem may lead to positive perceptions of their partners' regard, strengthening relationship well-being. The results of Murray et al. (2000) supported the hypothesis that perceived regard mediates the relation between self-esteem and relationship satisfaction. However, given that the construct of perceived regard is conceptually and empirically strongly related to the construct of self-esteem, there is a need to test other mediational hypotheses.

### **The Mediating Role of Secure Attachment Between the Partners**

One possible mediator of the link between self-esteem and relationship satisfaction is the romantic attachment between the relationship partners. Hazan and Shaver (1987) proposed that the concept of attachment, which was initially explored in the field of child development (1969, 1973, 1980), can be adapted to the context of romantic relationships (see also Fraley & Shaver, 2000; Mikulincer & Shaver, 2003). Hazan and Shaver (1987) found that attachment styles in adulthood are similar to the patterns that have been described with regard to early interactions in childhood (such as, e.g., secure, avoidant, and anxious attachment). Brennan, Clark, and Shaver (1998) proposed that individual differences in adult attachment can be reduced to two

independent dimensions. The first dimension has been labeled attachment-related anxiety and is defined as the degree to which individuals worry about being rejected or abandoned and about whether their partner is available and responsive. The second dimension has been labeled attachment-related avoidance and is defined as the degree to which individuals feel uncomfortable with dependency, intimacy, and closeness to their partner. Being low on both dimensions is defined as secure attachment. As discussed below, theory suggests that secure attachment to the current relationship partner might provide for an explanation of actor and partner effects of self-esteem on relationship satisfaction. Therefore, in this research we test whether secure romantic attachment between partners mediates the dyadic effects of self-esteem on relationship satisfaction.

With regard to the link between self-esteem and adult attachment, research consistently suggests that self-esteem is related to being securely attached, i.e., having low scores on attachment-related anxiety and avoidance (Bringle & Bagby, 1992; Bylsma, Cozzarelli, & Sumer, 1997; Collins & Read, 1990; Feeney & Noller, 1990; Foster, Kernis, & Goldman, 2007; Mickelson, Kessler, & Shaver, 1997; Srivastava & Beer, 2005). For example, in a large nationally representative sample, self-esteem predicted anxious and avoidant attachment at about medium effect size (Mickelson et al., 1997). Moreover, Foster et al. (2007) found that attachment-related anxiety and avoidance were negatively related to level of self-esteem even when the intraindividual stability of self-esteem was controlled for. However, no previous study has examined whether an individual's self-esteem predicts more secure attachment in his or her relationship partner. For example, it is possible that individuals with low self-esteem show specific negative behavior (e.g., reducing closeness and derogating their partner in conflict situations; Murray, Rose, Bellavia, Holmes, & Kusche, 2002) that increases attachment-related anxiety (e.g., worries about being abandoned) among their relationship partners. Or, to put it

differently, it is possible that individuals with high self-esteem show more adaptive interpersonal behavior that fosters secure attachment in their partners.

With regard to the link between adult attachment and relationship satisfaction, a large body of research suggests that secure attachment is related to greater relationship satisfaction (for a review, see Mikulincer & Shaver, 2007). Moreover, the relation holds when third variables such as depression, negative life events, self-criticism, and dependency are controlled for (Lowyck, Luyten, Demyttenaere, & Corveleyn, 2008). Furthermore, the study by Shaver and Brennan (1992) suggested that adult attachment is a stronger predictor of relationship satisfaction than are the Big Five personality traits. Previous research also provides robust evidence for partner effects of adult attachment on relationship satisfaction (for a review of available studies, see Mikulincer & Shaver, 2007). Theory supports the notion that attachment security should have partner effects. For example, being securely attached positively influences relationship behavior such as providing support to the partner (e.g., Collins & Feeney, 2000; Simpson, Rholes, & Nelligan, 1992), which in turn likely increases the partner's satisfaction with the relationship. Moreover, attachment-related anxiety may lead to problematic interpersonal behavior such as excessive reassurance seeking (Shaver, Schachner, & Mikulincer, 2005), which in the long run may decrease the partner's satisfaction and commitment to the relationship (Starr & Davila, 2008).

### **The Present Research**

Our first goal was to examine whether a person's self-esteem predicts his or her own relationship satisfaction (i.e., an actor effect) and his or her partner's relationship satisfaction (i.e., a partner effect). Moreover, we tested for moderating effects of gender, age, and length of relationship on the actor and partner effects of self-esteem on relationship satisfaction. For the analyses, we used data from five independent samples of married, cohabiting, and dating couples from the United States and Europe.

Our second goal was to test whether secure attachment to the current partner (operationalized as low attachment-related anxiety and avoidance) mediates the actor and partner effects of self-esteem on relationship satisfaction. On the basis of previous research (cf. Mikulincer & Shaver, 2007), we hypothesized that attachment-related anxiety and avoidance mediate the actor and partner effects of self-esteem because self-esteem is related to the individual's own attachment-related anxiety and avoidance, but we had no specific hypothesis with regard to the possible mediating pathway from the individual's self-esteem through the partner's attachment on the partner's relationship satisfaction. These analyses were based on one of the five samples because only one data set included measures of attachment.

This study extends previous research in several ways. First, for testing the actor and partner effects of self-esteem on relationship satisfaction, we used data from five independent data sets with different sample and design characteristics; by replicating the findings across studies, we reduce methodological concerns unique to each study and strengthen confidence in the overall pattern of results. Second, we tested for moderating effects of gender, age, and length of relationship on the actor and partner effects of self-esteem on relationship satisfaction; the results will provide evidence with regard to the robustness of the effects. Third, we examined a possible mediating mechanism of the actor and partner effects of self-esteem on relationship satisfaction.

## **Method**

The data come from five different studies, each of which included data from both partners of couples. In studies with more than one wave of data, we used the first measurement occasion. For couples to be included in the present analyses, each partner had to provide data on at least one of the constructs examined in this research.

### **Study 1: Longitudinal Study of Generations (LSG)**



**Participants.** The LSG (Bengtson, 2009) includes members of families that were randomly drawn from a subscriber list of about 840,000 members of a health maintenance organization in Southern California. Participants were assessed in 1971. The sample consisted of 192 couples ( $N = 384$ ), including married and cohabiting couples. The participants' age ranged from 19 to 71 years ( $M = 43.2$ ).

**Measures.** *Self-esteem* was assessed with eight items from the 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965; two RSE items were not included in the LSG assessment), a commonly used and well-validated measure of self-esteem (cf. Blascovich & Tomaka, 1991; Robins, Hendin, & Trzesniewski, 2001). Responses were measured using a 4-point scale (1 = *strongly disagree*; 4 = *strongly agree*), with  $M = 3.38$  ( $SD = 0.50$ ). The alpha reliability was .79 for men and .80 for women. The correlation between self-esteem of male and female partners was  $r = .06$ ,  $p = .45$ . *Relationship satisfaction* was assessed with the 10-item Gilford-Bengtson Marital Satisfaction Scale (Gilford & Bengtson, 1979). Participants reported how frequently they experienced situations such as "laughing together" or "disagreeing about something important" (reverse-scored). Responses were measured on a 5-point scale (1 = *hardly ever*; 2 = *sometimes*; 3 = *fairly often*; 4 = *quite frequently*; 5 = *almost always*), with  $M = 3.99$  ( $SD = 0.59$ ). The alpha reliability was .82 for men and .87 for women. The correlation between relationship satisfaction of male and female partners was  $r = .59$ ,  $p < .05$ . *Length of relationship* was based on the date of marriage for married couples and on the date of moving in together for cohabiting couples. Length of relationship ranged from 0.5 to 46 years ( $M = 20.9$ ).

## **Study 2: National Survey of Families and Households (NSFH)**

**Participants.** The NSFH (Bumpass & Sweet, 1997) is a nationally representative study providing a broad range of information on American family life. Participants were assessed from

1987 to 1988. The sample consisted of 6,051 couples ( $N = 12,102$ ), including married and cohabiting couples. The participants' age ranged from 16 to 91 years ( $M = 41.6$ ).

**Measures.** *Self-esteem* was assessed with three items from the RSE. The items were "I feel that I am a person of worth, at least on an equal plane with others," "On the whole, I am satisfied with myself," "I am able to do things as well as other people." Responses were measured using a 5-point scale (1 = *strongly agree*; 5 = *strongly disagree*), with  $M = 4.10$  ( $SD = 0.59$ ). The alpha reliability was .63 for men and .60 for women. The correlation between self-esteem of male and female partners was  $r = .16$ ,  $p < .05$ . *Relationship satisfaction* was assessed with one item (i.e., "Taking things all together, how would you describe your relationship?"). Responses were measured on a 7-point scale (1 = *very unhappy*; 7 = *very happy*), with  $M = 6.09$  ( $SD = 1.24$ ). The correlation between relationship satisfaction of male and female partners was  $r = .36$ ,  $p < .05$ . *Length of relationship* was based on the marriage date for married couples and on the date of moving in together for cohabiting couples. Length of relationship ranged from 0.1 to 68 years ( $M = 15.9$ ).

### Study 3: Longitudinal Study of Dual-Earner Couples (LSDEC)

**Participants.** The LSDEC (Barnett, 1993) is a study of the subjective experience of three major social roles (i.e., worker, partner, and parent) in a sample of dual-earner couples from the greater Boston metropolitan area. Participants were assessed from 1989 to 1990. The sample consisted of 300 couples ( $N = 600$ ), including married and cohabiting couples. The participants' age ranged from 22 to 49 years ( $M = 34.6$ ).

**Measures.** *Self-esteem* was assessed with the 10-item RSE. Responses were measured on a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*), with  $M = 3.43$  ( $SD = 0.46$ ). The alpha reliability was .81 for men and .84 for women. The correlation between self-esteem of male and female partners was  $r = .10$ ,  $p = .09$ . *Relationship satisfaction* was assessed with one item (i.e.,

“All things considered, how satisfied are you with being married/partnered?”). Responses were measured on a 7-point scale (1 = *completely dissatisfied*; 7 = *completely satisfied*), with  $M = 6.03$  ( $SD = 1.04$ ). The correlation between relationship satisfaction of male and female partners was  $r = .41$ ,  $p < .05$ . *Length of relationship* was based on the question “How long have you been married?” for married couples and “How long have you been living with your partner?” for cohabiting couples. Length of relationship ranged from 0.5 to 22 years ( $M = 8.2$ ).

#### **Study 4: The 500 Family Study**

**Participants.** The 500 Family Study (Schneider & Waite, 2008) is a study of work and family experiences of middle-class families living in the United States. Participants were assessed from 1998 to 2000. The sample consisted of 350 couples ( $N = 700$ ), including married and cohabiting couples. The participants' age ranged from 28 to 72 years ( $M = 45.3$ ).

**Measures.** *Self-esteem* was assessed with two items from the RSE. The items were “I feel good about myself” and “I feel I do not have much to be proud of” (reverse-scored). Responses were measured on a 5-point scale (1 = *never*; 5 = *very often*), with  $M = 4.06$  ( $SD = 0.68$ ). The alpha reliability was .66 for men and .59 for women. The correlation between self-esteem of male and female partners was  $r = .09$ ,  $p = .11$ . *Relationship satisfaction* was assessed with 10 items of the ENRICH Marital Satisfaction Scale (Fowers & Olson, 1993). Example items are “I am not happy about our communication and feel my partner does not understand me” (reverse-scored) and “I am very happy with how we manage our leisure activities and the time we spend together.” Responses were measured on a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*), with  $M = 3.76$  ( $SD = 0.70$ ). The alpha reliability was .79 for men and .81 for women. The correlation between relationship satisfaction of male and female partners was  $r = .58$ ,  $p < .05$ . *Length of relationship* was based on the time the couples had been living together, for both married and cohabiting couples, and ranged from 1 to 34 years ( $M = 17.8$ ).

**Study 5: My Partner and I (MPI)**

**Participants.** The MPI is a new German-language study of personality and well-being including a sample of couples living in Switzerland. Participants were assessed in 2011. The sample consisted of 186 couples ( $N = 372$ ), including married, cohabiting, and dating couples. The participants' age ranged from 18 to 61 years ( $M = 29.1$ ).

**Measures.** *Self-esteem* was assessed with the 10-item RSE. Responses were measured on a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*), with  $M = 4.07$  ( $SD = 0.75$ ). The alpha reliability was .89 for men and .92 for women. The correlation between self-esteem of male and female partners was  $r = .14$ ,  $p < .05$ . *Relationship satisfaction* was assessed with eight items of the dyadic satisfaction subscale of the Dyadic Adjustment Scale (DAS; Spanier, 1976). Participants reported how frequently they experienced situations such as “thinking that things between you and your partner are going well” or “regretting that you married (or lived together)” (reverse-scored) on a 6-point scale (1 = *never*; 6 = *always*), with  $M = 4.99$  ( $SD = 0.64$ ). The alpha reliability was .83 for men and .86 for women. The correlation between relationship satisfaction of male and female partners was  $r = .67$ ,  $p < .05$ . *Attachment-related anxiety and avoidance* were assessed with the Experiences in Close Relationship Scale—Short Form (ECR-S; Wei, Russell, Mallinckrodt, & Vogel, 2007). The scale includes 12 items; each subscale (i.e., attachment-related anxiety and attachment-related avoidance) was measured by six items. Participants were instructed to assess the items with regard to their present relationship partner. Example items for attachment-related anxiety are “I need a lot of reassurance that I am loved by my partner” and “I do not often worry about being abandoned” (reverse-scored). Example items for attachment-related avoidance are “I try to avoid getting too close to my partner” and “I usually discuss my problems and concerns with my partner” (reverse-scored). Responses were measured on a 7-point scale (1 = *strongly disagree*; 7 = *strongly agree*), with  $M = 3.23$  ( $SD = 1.11$ ) for attachment-

related anxiety and  $M = 1.98$  ( $SD = 0.96$ ) for attachment-related avoidance. The alpha reliability for attachment-related anxiety was .69 for men and .64 for women, and the alpha reliability for attachment-related avoidance was .80 for men and .75 for women. The correlation between male and female partners was  $r = .12$ ,  $p = .11$ , for attachment-related anxiety and  $r = .30$ ,  $p < .05$ , for attachment-related avoidance. *Length of relationship* was based on the question “How long have you been together?” and ranged from 0.8 to 33 years ( $M = 5.2$ ).

### **Procedure for the Statistical Analyses**

The analyses were conducted using the Mplus 6.1 program (Muthén & Muthén, 2010). To deal with missing values, we employed full-information maximum likelihood estimation to fit models directly to the raw data, which produces less biased and more reliable results compared with conventional methods for dealing with missing data, such as listwise or pairwise deletion (Allison, 2003; Schafer & Graham, 2002). Model fit was assessed by the Tucker-Lewis index (TLI), the comparative fit index (CFI), and the root-mean-square error of approximation (RMSEA), based on the recommendations of Hu and Bentler (1999) and MacCallum and Austin (2000). Hu and Bentler (1999) suggest that good fit is indicated by values greater than or equal to .95 for TLI and CFI, and less than or equal to .06 for RMSEA. To test for differences in model fit, we used the test of small difference in fit recommended by MacCallum, Browne, and Cai (2006, Program C) instead of the more commonly used chi-square difference test. With sufficiently large samples, the chi-square difference test will always be significant, even when the true difference in fit is very small and theoretically irrelevant (cf. MacCallum et al., 2006). In contrast, the test of small difference in fit tests for differences greater than an a priori specified small difference. In conducting the test, we used the exact specifications given by MacCallum et al. (2006).

### **Results**

### **Actor and Partner Effects of Self-Esteem on Relationship Satisfaction**

In the first part of the analyses, we examined actor and partner effects of self-esteem on relationship satisfaction, using the data from all five studies included in this research. The analyses were based on the actor-partner interdependence model (Kenny & Cook, 1999). The basic model, shown in Figure 1, includes two predictor variables (i.e., self-esteem of the male and female partner) and two outcome variables (i.e., relationship satisfaction of the male and female partner). The relations between the variables are specified as actor effects, partner effects, and covariances. The actor effects,  $a_m$  and  $a_w$ , represent the effect of each partner's self-esteem on his or her own relationship satisfaction. The partner effects,  $p_m$  and  $p_w$ , represent the effect of each person's self-esteem on his or her partner's relationship satisfaction. To distinguish partner effects, we label the effects by referring to the dyad member of the outcome variable (Ledermann, Macho, & Kenny, 2011). Finally, the model includes a covariance between the predictor variables to account for systematic covariation of the partners' self-esteem and a covariance between the residuals of the outcome variables to account for the part of systematic covariation of the partners' relationship satisfaction that is unexplained by the model.

The basic actor-partner interdependence model is a saturated model (i.e.,  $df = 0$ ). Kenny and Ledermann (2010) recommend testing whether the actor and partner effects can be set equal across partners (which provides two degrees of freedom); if the constrained model does not fit significantly worse than the unconstrained model, the constrained model should be used. For all samples, cross-partner equality (i.e., cross-gender equality) constraints did not significantly decrease model fit (Table 1). Moreover, the fit of the constrained models was good. The TLI ranged from .96 to 1.00, the CFI ranged from .98 to 1.00, and the RMSEA ranged from .000 to .071. Therefore, in the remainder of the analyses we used cross-gender equality constraints on actor and partner effects. To obtain standardized estimates that preserve cross-gender equality,

we standardized each variable in our data set prior to the analysis, using the weighted mean and the pooled standard deviation calculated across both men and women (Kenny, Kashy, & Cook, 2006, p. 179).

Table 2 shows the estimates of actor and partner effects. Across all studies, the actor effects were significant and ranged from .15 to .36 ( $M = .27$ ). Across all studies, the partner effects were also significant and ranged from .09 to .22 ( $M = .16$ ). To summarize, the results of all studies examined in this research suggest that the self-esteem of a person predicts the relationship satisfaction of his or her partner, controlling for the effect of the partner's self-esteem.

Then, we tested whether participants' age and length of relationship moderated the actor and partner effects. We estimated multiple-group models and assessed whether model fit was significantly decreased when the coefficients were constrained to be equal across groups (e.g., across younger and older participants). With regard to age, we divided each sample in two groups using 30 years as the cutoff (averaged across partners). If the size of one of the groups was smaller than  $n = 30$ , we did not examine the sample in the moderator analyses because of low statistical power. In all tests, equality constraints across groups did not significantly decrease model fit. Thus, the results suggested that age did not moderate the actor and partner effects.<sup>1</sup> With regard to length of relationship, we divided the samples into two groups using 2 years as the cutoff. Again, if the size of one of the groups was smaller than  $n = 30$ , we did not examine the sample in the moderator analyses because of low statistical power. In all tests, equality constraints across groups did not significantly decrease model fit. Thus, the results suggested that length of relationship did not moderate the actor and partner effects of self-esteem on relationship satisfaction.<sup>2</sup>

### **Does Secure Attachment Between the Partners Mediate the Actor and Partner Effects of Self-Esteem on Relationship Satisfaction?**

The analyses reported in the first part of the analyses, which were based on data from five independent studies, suggested that self-esteem has significant actor and partner effects on relationship satisfaction. One of the studies (i.e., the MPI) included measures of the partners' attachment-related anxiety and avoidance (assessed with regard to the current relationship partner), and therefore allowed testing whether secure attachment between the partners provides for an explanation of the actor and partner effects.

For the analyses, we used the actor-partner interdependence mediation model (Ledermann et al., 2011). Its structure is similar to the actor-partner interdependence model; however, in addition to two predictor and two outcome variables, the actor-partner interdependence mediation model includes two mediator variables (i.e., one mediator for each of the partners). There are four effects that can be mediated: the actor effect of the male partner, the actor effect of the female partner, and the two partner effects. For each of these effects, there are two possible indirect effects. For example, with regard to the male actor effect (e.g., the effect of self-esteem of the male partner on his own relationship satisfaction), one of the indirect effects involves the mediator of the male partner (e.g., attachment anxiety of the male partner; thus, this effect is also called the actor-actor indirect effect because it consists of two actor effects) and the other indirect effect involves the mediator of the female partner (e.g., attachment anxiety of the female partner; thus, this effect is also called the partner-partner indirect effect). Thus, overall there are eight possible indirect effects.

First, we tested a model including attachment-related anxiety as mediator. As in the first part of the analyses, we tested whether the effects can be constrained to be equal across gender (which would reduce the number of possible indirect effects from eight to four). Using the



constraints did not significantly decrease model fit (Table 3). Moreover, the fit of the constrained model was good. The TLI was .99, the CFI was 1.00, and the RMSEA was .024. Therefore, we examined the estimates of the model that included cross-gender equality constraints (Figure 2). All effects were significant, with the exception of the direct partner effect of self-esteem on relationship satisfaction. To test for significance of the indirect effects, we estimated the bootstrap 95% confidence intervals.<sup>3</sup> The results showed that all of the four possible indirect effects were significant (see Table 4). Thus, for all actor and partner effects, two parallel indirect effects emerged. For example, self-esteem of the male partner predicted relationship satisfaction of the female partner through both the male partner's attachment-related anxiety and the female partner's attachment-related anxiety. Moreover, when controlling for the indirect effects, the direct partner effect became nonsignificant. We compared the size of the indirect actor and partner effects with the size of the corresponding total effects (see the estimates of the actor and partner effects for the MPI shown in Table 2). With regard to the actor effect, the total effect was .33 and the overall indirect effect was .13 (i.e., the sum of the two possible indirect effects); thus, the overall indirect effect accounted for 39% of the total effect. With regard to the partner effect, the total effect was .19 and the overall indirect effect was .13; thus, the overall indirect effect accounted for 68% of the total effect.

Second, we tested whether attachment-related avoidance mediated the effects of self-esteem on relationship satisfaction. Again, we tested whether the effects can be constrained to be equal across partners. Using the constraints did not significantly decrease model fit (Table 3). For the constrained model, the TLI was .94, the CFI was .98, and the RMSEA was .084. Although the fit values for the TLI and RMSEA were slightly worse than the normative values specified by Hu and Bentler (1999), we judged the fit of the model to be satisfactory overall. Therefore, we examined the estimates of the model that included cross-gender equality constraints (Figure 3).

All effects were significant, with the exception of the partner effect of self-esteem on attachment-related avoidance. To test for significance of the indirect effects, we again estimated the bootstrap 95% confidence intervals. The results showed that two of the four possible indirect effects were significant (see Table 4). Specifically, for each of the significant indirect effects, the first part of the indirect effect—i.e., the path from the predictor to the mediator—was located within the individual. In contrast, all indirect effects that involved a partner effect of self-esteem on the mediator were nonsignificant. Thus, self-esteem predicted the individual's and his or her partner's relationship satisfaction because it predicted the individual's (but not the partner's) attachment-related avoidance. Again, we compared the size of the indirect actor and partner effects with the size of the corresponding total effects of self-esteem on relationship satisfaction (see the estimates shown in Table 2). The overall indirect effects accounted for 49% of the total actor effect, and for 47% of the total partner effect.

Third, we tested a model in which we simultaneously included attachment-related anxiety and attachment-related avoidance to examine their unique mediation effects. Again, we tested whether the effects can be constrained to be equal across partners. The fit of the constrained model was satisfactory ( $TLI = .94$ ,  $CFI = .98$ ,  $RMSEA = .069$ ), and using the constraints did not significantly reduce model fit (Table 3). The mediation patterns were identical to the results of the mediation models described above (i.e., all significant indirect effects of attachment-related anxiety and avoidance remained significant, and all nonsignificant indirect effects remained nonsignificant). Thus, attachment-related anxiety and attachment-related avoidance independently mediated the actor and partner effects of self-esteem on relationship satisfaction. In this model, the overall indirect effects of attachment-related anxiety accounted for 21% of the total actor effect and for 37% of the total partner effect. The overall indirect effects of attachment-related avoidance accounted for 36% of the total actor effect and for 37% of the total

partner effect. Thus, in sum, attachment-related anxiety and avoidance accounted for about one half of the total actor effect (57%) and three quarters of the total partner effect (74%) of self-esteem on relationship satisfaction.

### **Discussion**

We examined actor and partner effects of self-esteem on relationship satisfaction, using the actor-partner interdependence model and data from five independent samples of couples. The results indicated that self-esteem predicted the individual's own relationship satisfaction (i.e., an actor effect) and the relationship satisfaction of his or her partner (i.e., a partner effect), controlling for the effect of the partner's self-esteem. Gender, age, and length of relationship did not moderate the effect sizes. Moreover, using one of the samples, we tested whether secure romantic attachment to the current partner (assessed as low attachment-related anxiety and avoidance) mediated the effects. Attachment-related anxiety mediated the actor and partner effects of self-esteem on relationship satisfaction because the individual's self-esteem predicted both the individual's and the partner's level of attachment-related anxiety. In contrast, attachment-related avoidance mediated the actor and partner effects of self-esteem on relationship satisfaction only through the individual's (but not the partner's) level of attachment-related avoidance. A model including both attachment-related anxiety and avoidance suggested that the variables independently mediated the actor and partner effects of self-esteem on relationship satisfaction.

As discussed in the Introduction, the few previous studies on actor and partner effects of self-esteem on relationship satisfaction had yielded inconsistent findings (Jones & Cunningham, 1996; Murray et al., 1996a, 2000; Robinson & Cameron, 2012). The present research advances the field by systematically analyzing data from five independent samples, and the results provide robust evidence for both actor and partner effects. The average size of the actor effect of self-

esteem was .27, tending towards a medium effect size according to Cohen (1988). The average size of the partner effect was .16, corresponding to a small to medium-sized effect. Although the effect sizes were of only small to medium size, we believe that the effects are important. First, relationship satisfaction is a construct influenced by multiple factors (Bradbury, Fincham, & Beach, 2000), so the predictive power of each single factor is necessarily limited. Second, the actor and partner effects of self-esteem on relationship satisfaction tended to be larger than the actor and partner effects of the Big Five personality traits. In the study by Dyrenforth, Kashy, Donnellan, and Lucas (2010), the largest actor and partner effects emerged for agreeableness, emotional stability, and conscientiousness, with actor effects ranging from .11 to .21 and partner effects from .04 to .15. Of particular interest is the comparison of the effects of self-esteem with the corresponding effects of emotional stability, because emotional stability is the Big Five variable that is most strongly related to self-esteem (Robins et al., 2001; Watson, Suls, & Haig, 2002). In the study by Dyrenforth et al. (2010), the actor and partner effects of emotional stability were .14 and .11, respectively (averaged across studies). Thus, the findings of the present research suggest that self-esteem has larger dyadic effects on relationship satisfaction than emotional stability. However, future research should compare the effects of self-esteem and emotional stability in one model, which would allow controlling for variance shared by the constructs.

Kenny and Ledermann (2010; see also Kenny & Cook, 1999) have suggested that the actor-partner interdependence model can yield evidence for four different dyadic patterns: an actor-only pattern, a partner-only pattern, a couple pattern (i.e., equal actor and partner effects), and a contrast pattern (i.e., actor and partner effects of the same size, but with opposite signs). Although in the present research the actor effects were larger than the partner effects, in each of the five samples the average actor and partner effects were significant and in the same

direction—thus, the dyadic effects of self-esteem on relationship satisfaction best match the couple pattern. Under the assumption that self-esteem influences relationship satisfaction, the couple pattern implies that relationship partners benefit not only from their own self-esteem but also from their partner's.

We also tested whether gender, age, and length of relationship moderate the strength of the actor and partner effects of self-esteem on relationship satisfaction. Although moderator effects might be plausible (e.g., the hypothesis that the partner effect of self-esteem is different for men and women, or the hypothesis that the partner effect differs between newly-weds and couples that have been married for many years), no significant moderator effects emerged across the five independent studies. Thus, the findings of the moderator analyses provide support for the robustness of the actor and partner effects of self-esteem.

In the present research, secure romantic attachment to the current partner (assessed as low levels of attachment-related anxiety and avoidance) mediated a large proportion of the actor and partner effects of self-esteem on relationship satisfaction. Moreover, the analyses suggested that both attachment dimensions independently contributed to the mediation effect. Attachment-related anxiety mediated the actor and partner effects of self-esteem on relationship satisfaction because the individual's self-esteem predicted both the individual's and the partner's level of attachment-related anxiety. As discussed in the Introduction, attachment-related anxiety is linked to problematic interpersonal behavior such as providing less instrumental support, being less responsive, and showing more negative support behavior (Collins & Feeney, 2000). Thus, the individual's low self-esteem may lead to anxious attachment and thereby indirectly cause poor caregiving, which in turn may affect the partner's relationship satisfaction. Moreover, people tend to assume that their perceptions are shared by everyone and that others see the world as they do (e.g., Kenny & DePaulo, 1993). Consequently, individuals with low self-esteem assume that their

partners see them in the same negative way as they see themselves (Murray et al., 2000), which may elicit worries about being rejected and excessive reassurance seeking (Shaver et al., 2005), which in the long run may decrease the partner's love and commitment to the relationship (Starr & Davila, 2008).

Attachment-related avoidance mediated the actor and partner effects of self-esteem on relationship satisfaction only through the individual's (but not the partner's) level of attachment-related avoidance. Low self-esteem may increase the individual's own avoidance, given that individuals with low self-esteem frequently question their partner's continuing affection and acceptance (Murray, Holmes, MacDonald, & Ellsworth, 1998) and therefore may tend to reduce interpersonal closeness to protect themselves against experiences of rejection (Murray et al., 2000). A possible explanation for the mediated actor effect is that avoidance may then lead to ineffective support seeking (Collins & Feeney, 2000), which in turn may negatively influence the individual's relationship satisfaction. A possible explanation for the mediated partner effect is that individuals with high attachment-related avoidance are less attentive to emotional information (Fraley, Garner, & Shaver, 2000), which may lower the partner's relationship satisfaction. Future research should examine these more fine-grained hypotheses about the mediational processes that account for actor and partner effects of self-esteem on relationship satisfaction.

The present research included four samples from the United States and one sample from Europe. Future research should examine actor and partner effects of self-esteem on relationship satisfaction in countries from diverse cultural contexts, such as Asian and African cultures (cf. Arnett, 2008). For example, individuals from Asian and Western cultures show different self-construal styles and differ in their need for self-esteem (Heine, Lehman, Markus, & Kitayama, 1999; Markus & Kitayama, 1991), which may have consequences for the link between self-

esteem and relationship satisfaction. Moreover, cultures differ with regard to beliefs about love and marriage (e.g., Kline, Horton, & Zhang, 2008) and also differ in the prevalence of secure attachment (Schmitt et al., 2004), which may influence the direct and indirect effects of self-esteem on satisfaction in marriage and close relationships. Therefore, whether studies with samples from other cultural contexts would yield the same results as the present research is unknown.

Future research should also test for the mediating effects of variables other than attachment on the actor and partner effects of self-esteem on relationship satisfaction. Although the present research suggested that attachment-related anxiety and avoidance explain large proportions of the total actor and partner effects, other processes might complement the effects of attachment or might even be of greater importance than attachment-related processes. For example, self-esteem predicts the individual's success and well-being in the work and health domain, as indicated by job satisfaction, occupational status, and physical health (Judge & Hurst, 2008; Kammeyer-Mueller, Judge, & Piccolo, 2008; Orth et al., 2012; Trzesniewski et al., 2006), which in turn might influence the partner's relationship satisfaction (and thus might mediate the partner effect of self-esteem).

One strength of the present research is the convergence of findings across five independent samples, which helps allay some methodological concerns. For example, in three of the studies only a short version of the RSE was used (i.e., in the LSG, NSFH, and 500 Family Study); however, this limitation was addressed in the remaining two studies in which the complete 10-item RSE was used (i.e., in the LSDEC and MPI). Similarly, two of the studies used single items to measure relationship satisfaction (i.e., the NSFH and LSDEC); however, this limitation was addressed in the other studies which included multiple-indicator scales of this construct. In addition, whereas most studies did not include dating couples but only cohabiting

and married couples, one study (i.e., the MPI) included all three types of relationships. Moreover, one of the studies used a very large and nationally representative sample (i.e., the NSFH).

Finally, the five studies differed with regard to further characteristics such as age of participants (sample means ranged from 29 to 45 years) and length of relationship (sample means ranged from 5 to 21 years). The important point in this context is that the general pattern of actor and partner effects was similar across all five studies, strengthening confidence in the results.

In summary, the present research contributes to the understanding of the relation between self-esteem and relationship satisfaction in couples and suggests that satisfaction and fulfillment in close relationships may depend on both partners' self-esteem. If future research provides evidence for the causality of the effects of self-esteem, then such knowledge may contribute to designing more effective interventions aimed at preventing relationship problems and fostering satisfying and fulfilling relationships.



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## Footnotes

<sup>1</sup> When we used 40 years instead of 30 years as the cutoff value for age, the results were unaltered and no significant moderator effect emerged.

<sup>2</sup> When we used 5 years instead of 2 years as the cutoff value for length of relationship, the results were unaltered and no significant moderator effect emerged.

<sup>3</sup> In the bootstrap analyses, we followed the recommendations of Shrout and Bolger (2002), using 1,000 replications and the bias-corrected confidence interval.

Table 1

*Test of Gender Differences in Actor and Partner Effects of Self-Esteem on Relationship Satisfaction*

Study	<i>N</i>	$\Delta\chi^2$	Critical $\Delta\chi^2$
LSG	192	0.8	9.5
NSFH	6,051	5.5	69.1
LSDEC	300	3.2	11.2
The 500 Family Study	350	5.6	11.9
MPI	186	2.8	9.4

*Note.* Gender differences in actor and partner effects were tested by comparing the fit of two models, one that constrained the effects to be equal across male and female partners (Model A) and another that freely estimated the effects (Model B), using the test of small difference in fit (MacCallum et al., 2006). For all tests,  $df_A = 0$  and  $df_B = 2$ . The observed  $\Delta\chi^2$  values indicated that equality constraints across male and female partners did not significantly worsen model fit. LSG = Longitudinal Study of Generations; NSFH = National Survey of Families and Households; LSDEC = Longitudinal Study of Dual-Earner Couples; MPI = My Partner and I.

Table 2

*Actor and Partner Effects of Self-Esteem on Relationship Satisfaction*

Study	Actor effect	Partner effect
LSG	.36*	.19*
NSFH	.15*	.09*
LSDEC	.16*	.12*
The 500 Family Study	.33*	.22*
MPI	.33*	.19*

*Note.* The table shows standardized coefficients. The actor effect represents the effect of each partner's self-esteem on his or her own relationship satisfaction. The partner effect represents the effect of each person's self-esteem on his or her partner's relationship satisfaction. LSG = Longitudinal Study of Generations; NSFH = National Survey of Families and Households; LSDEC = Longitudinal Study of Dual-Earner Couples; MPI = My Partner and I.

\*  $p < .05$ .

Table 3

*Test of Gender Differences in Actor and Partner Effects in Models Including Attachment-Related Anxiety and Avoidance as Mediators*

Mediators	<i>N</i>	$\Delta\chi^2$	Critical $\Delta\chi^2$
Attachment-related anxiety	186	6.7	19.9
Attachment-related avoidance	186	13.8	19.9
Attachment-related anxiety and avoidance	186	18.9	29.2

*Note.* Gender differences in actor and partner effects were tested by comparing the fit of two models, one that constrained the effects to be equal across male and female partners (Model A) and another that freely estimated the effects (Model B), using the test of small difference in fit (MacCallum et al., 2006). For models including one mediator variable (i.e., attachment-related anxiety or attachment-related avoidance),  $df_A = 0$  and  $df_B = 6$ . For models including both mediator variables,  $df_A = 0$  and  $df_B = 10$ . The observed  $\Delta\chi^2$  values indicated that equality constraints across male and female partners did not significantly worsen model fit.

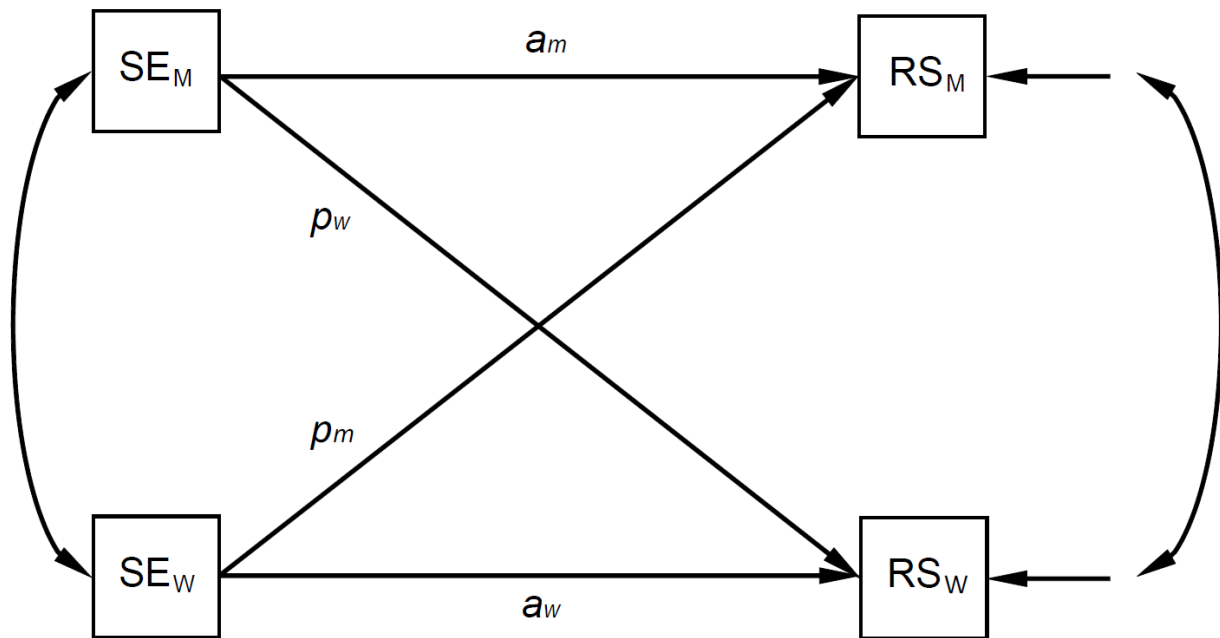
Table 4

*Indirect Actor and Partner Effects of Self-Esteem on Relationship Satisfaction, With Attachment-Related Anxiety and Avoidance as Mediators*

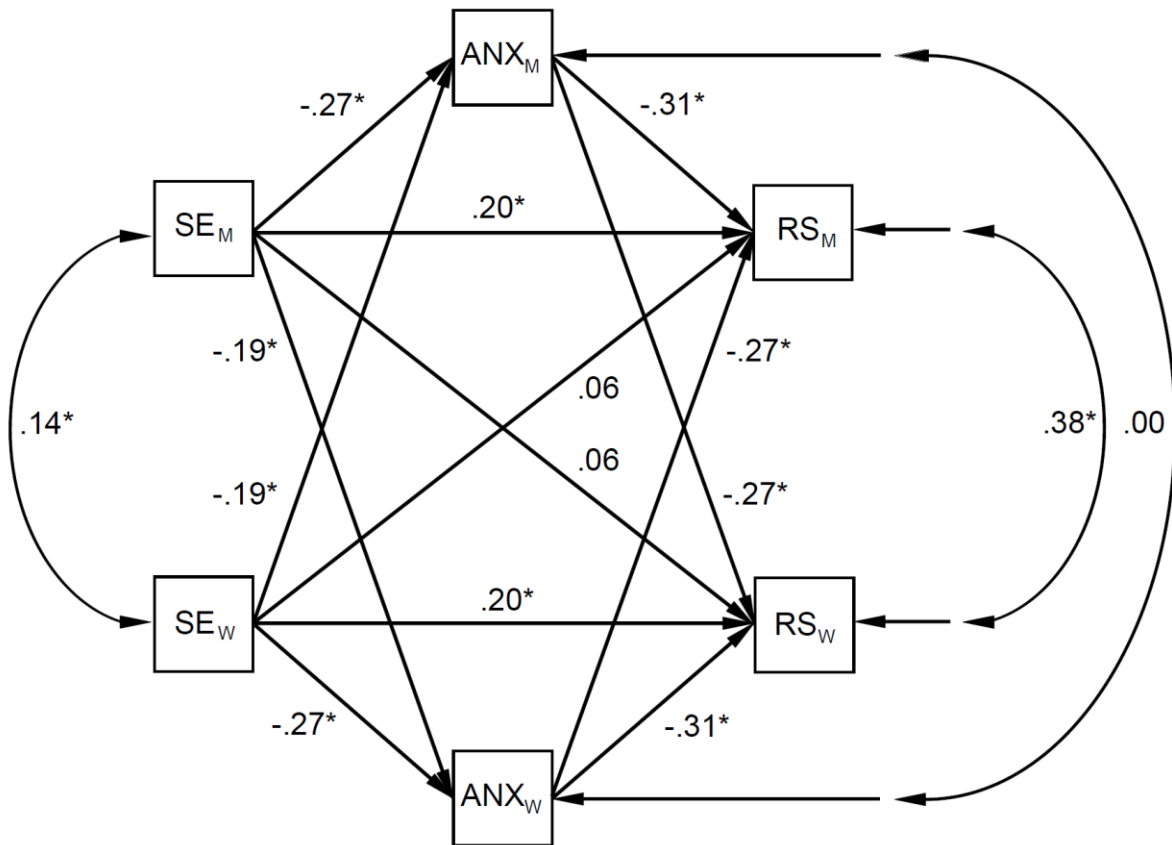
Effect	Mediator	
	Attachment-related anxiety	Attachment-related avoidance
Indirect actor effects		
Actor-actor IE	.08*	.15*
Partner-partner IE	.05*	.01
Indirect partner effects		
Actor-partner IE	.07*	.08*
Partner-actor IE	.06*	.01

*Note.* The table shows standardized coefficients. The significance of indirect effects was tested using the bootstrapped bias-corrected 95% CI. The actor-actor indirect effect (IE) represents a mediational path that involves two actor effects (i.e., an actor effect of the predictor on the mediator and an actor effect of the mediator on the outcome). Correspondingly, the partner-partner IE involves two partner effects, the actor-partner IE involves an actor effect followed by a partner effect, and the partner-actor IE involves a partner effect followed by an actor effect.

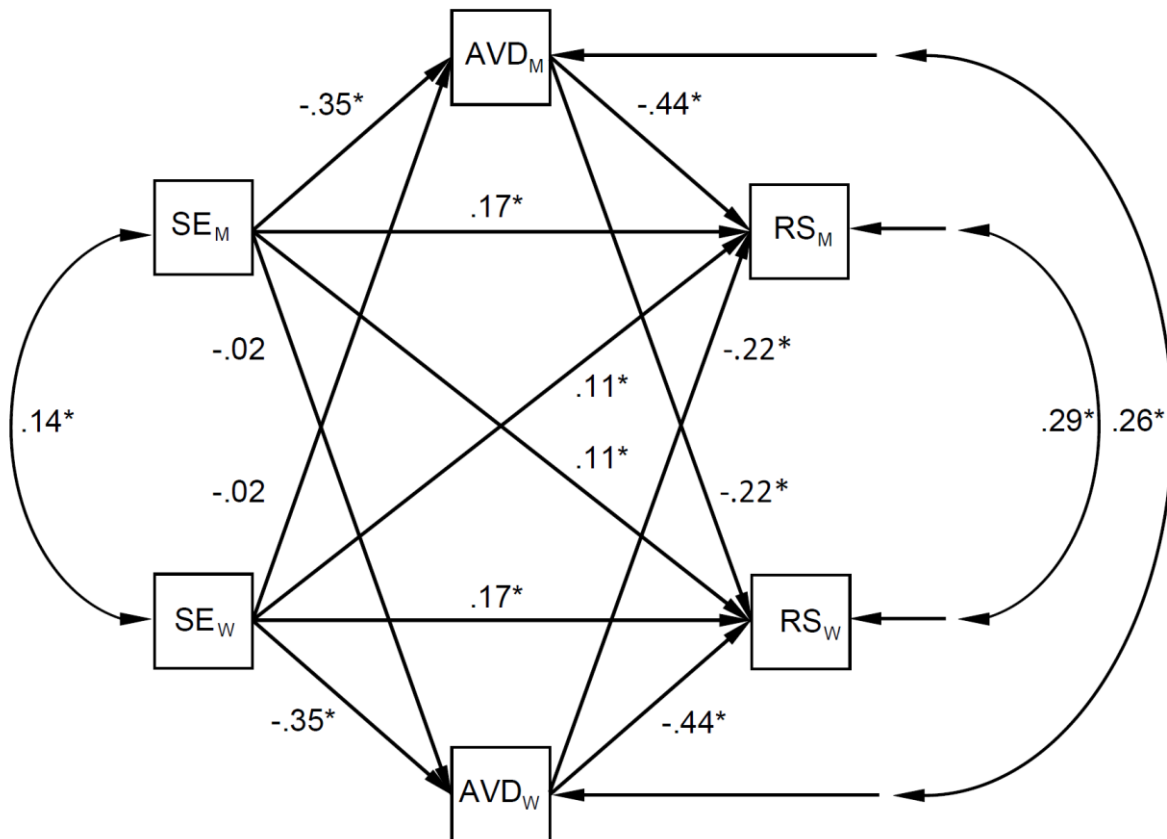
\*  $p < .05$ .



*Figure 1.* Actor-partner interdependence model of self-esteem (SE) predicting relationship satisfaction (RS). Subscripts of variables denote whether the variable belongs to the male partner (M) or female partner (W).  $a_m$  = actor effect of men's self-esteem on own relationship satisfaction;  $a_w$  = actor effect of women's self-esteem on own relationship satisfaction;  $p_m$  = partner effect of women's self-esteem on men's relationship satisfaction;  $p_w$  = partner effect of men's self-esteem on women's relationship satisfaction.



*Figure 2.* Actor-partner interdependence mediation model of self-esteem (SE) predicting relationship satisfaction (RS), with attachment-related anxiety (ANX) as mediator variable. Subscripts of variables denote whether the variable belongs to the male partner (M) or female partner (W). The figure shows standardized coefficients. \*  $p < .05$ .



*Figure 3.* Actor-partner interdependence mediation model of self-esteem (SE) predicting relationship satisfaction (RS), with attachment-related avoidance (AVD) as mediator variable. Subscripts of variables denote whether the variable belongs to the male partner (M) or female partner (W). The figure shows standardized coefficients. \*  $p < .05$ .