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ACTOR AND PARTNER EFFECTS OF ATTACHMENT ON RELATIONSHIP SATISFACTION AND SEXUAL SATISFACTION ACROSS THE GENDERS: AN APIM APPROACH

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*Previous studies found gender differences in relationship satisfaction and sexuality. We tested gender differences in associations between attachment, a lasting relationship determinant, and two outcomes, relationship and sexual satisfaction. This study improves on earlier research by examining these associations in one Actor-Partner-Interdependence-Model, making direct statistical testing between outcomes possible. Furthermore, a community and a distressed sample (*N = *113 heterosexual couples each) were included to attempt replication across samples and to examine clinical implications. In both genders, actor attachment avoidance negatively affected relationship satisfaction and (with one exception) sexual satisfaction. Also in both genders, partner attachment avoidance negatively affected sexual satisfaction. However, whereas partner attachment avoidance influenced female relationship satisfaction, it did not affect male relationship satisfaction. The findings replicated across samples. Clinical implications are discussed.*

The quality of partner relationships is closely related to mental and physical well-being (Lebow, Chambers, Christensen, & Johnson, 2012), making studies on relationship functioning of lasting importance. Previous work revealed gender differences with regard to the meaning attached to relationship satisfaction and sexuality (e.g. Sprecher, 2002). The current study focuses on gender differences in associations between attachment, which is an important underlying mechanism of couples' functioning (Mikulincer & Shaver, 2016), and two dyadic outcomes, i.e. relationship- and sexual satisfaction. While separately these outcomes have often been investigated before, our study extend this body of work by jointly examining the associations between attachment and both relationship and sexual satisfaction in one model. This approach makes direct statistical tests of gender differences in the relative strength of these associations within and between outcomes possible. Furthermore, inclusion of two study samples enabled us to examine whether findings in one sample

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could be replicated in another sample. Finally, because we also included a distressed sample findings are potentially relevant for clinical practice.

COUPLES' FUNCTIONING AND GENDER

Claims of gender dissimilarity gained much attention since Bernard's statement that 'there are two marriages in every marital union, his and hers' (Bernard, 1982), but pertinent empirical findings are mixed. For example, Hyde (2005) reviewed 46 meta-analyses on a broad array of psychological constructs and drew the overall conclusion that gender differences were 'overinflated'. Likewise, a review of 115 longitudinal studies on married couples (Karney & Bradbury, 1995), and a large longitudinal study with 526 couples in early marriage (Kurdek, 2005) also failed to find substantial gender differences in determinants of marital satisfaction. On the other hand, the aforementioned review (Hyde, 2005) revealed that women on average scored higher on indirect aggression in relational contexts whereas men scored higher on sexuality related behaviors, with effect sizes varying from moderate to large. These two areas are related to two principal, positively correlated markers of relationship quality, i.e. relationship and sexual satisfaction (Sprecher & Cate, 2004). Social exchange theory explains this association by stating that when the sexual relationship is rewarding this may lead to more overall relationship satisfaction and vice versa (Sprecher, 2002).

Although average ratings of sexual satisfaction (Hyde, 2005) and relationship satisfaction in nondistressed samples (Jackson, Miller, Oka, & Henry, 2014) do not differ between the genders, several findings suggest gender differences in the meaning and importance attached to relationship satisfaction, or intimacy, and sexuality. For example, men seem to attach greater importance to sex than women. To illustrate, the likelihood of breakup is more strongly associated with sexual dissatisfaction in men, whereas in women relationship dissatisfaction is the stronger predictor (Sprecher, 2002). Men also seem to be more interested in the physical aspect of sex, whereas women tend to experience sex as a marker for intimacy (Tiegs, Perrin, Kaly, & Heesacker, 2007; Vohs, Catanese, & Baumeister, 2004). In line with this, women are generally more aware of the emotional climate of the relationship than men (Croyle & Waltz, 2002; Loscocco & Walzer, 2013), and are the driving force behind initiation of couples therapy (Doss, Atkins, & Christensen, 2003) but also of divorce (Montenegro, 2004; Rokach, Cohen, & Dreman, 2004). In this study, we examined whether these gender differences in relationship satisfaction (a stronger emphasis on intimacy in women than in men) and sexuality (an accent on intimacy in women and physical release in men), were reflected in different associations with attachment.

ATTACHMENT

Attachment, defined as a 'lasting psychological connectedness between human beings' (Bowlby, 1982) is relatively stable (Fraley, 2002) and thus exerts an enduring effect on relationship dynamics. In couples, attachment serves as a means to regulate emotions of partners by seeking or avoiding proximity and intimacy, as well as associated potential support and validation. Three main attachment strategies are distinguished (Mikulincer & Shaver, 2016). The primary attachment strategy is characterized by seeking proximity to the partner in times of stress or need. When the partner is consistently available and responsive to attachment needs for validation and support, these experiences may lead to secure attachment. If the primary strategy is not reinforced by availability and responsiveness of the partner, one or both secondary attachment strategies may develop. When partners are inconsistently available and responsive this may lead to hyperactivation of the attachment system. Hyperactivation is associated with anxiety about rejection, doubts about one's own value in the eyes of the partner, worries about availability and responsiveness of the partner, and a strong desire for closeness (Mikulincer & Shaver, 2016). To deal with this attachment anxiety, an individual may engage in clinging and coercive behaviors in order to eventually gain attention and force the partner to provide support and validation. This may be alternated with anger when attachment needs remain unmet. However, when partners are experienced as neglectful or rejecting, deactivation of the attachment system may develop. Deactivation is characterized by distrust of others. Distrust is dealt with in a self-protective strategy of denial of

attachment needs and avoidance of intimacy. This manifests itself as an aversion of dependency on the partner, and an urge for self-reliance and autonomy (Mikulincer & Shaver, 2016). This study focused on anxiety and avoidance as markers of attachment. Meta-analytic evidence (Del Giudice, 2011) showed that while men tend to score higher on avoidance, women tend to score higher on anxiety; a gender effect particularly manifest in community samples.

ATTACHMENT AND RELATIONSHIP SATISFACTION

It is well-documented that people who report attachment problems are more likely to experience relationship dissatisfaction (Mikulincer & Shaver, 2016). Relationship satisfaction is commonly defined by multiple aspects, including emotional cohesion, affectional expression, consensus, and constructive conflict handling (Spanier, 1976). Unmet needs for love, support, validation, connectedness, and autonomy between partners have a negative impact on the relationship as a secure base from which the world can be explored and personal growth is facilitated. An extensive review in dating and married couples (Mikulincer & Shaver, 2016), and a large meta-analysis (Li & Chan, 2012) identified both avoidance of intimacy, and anxiety about rejection as associated with relationship dissatisfaction. The correlation with avoidance was stronger than with anxiety, i.e. −.44 and −.36, respectively, in both genders (Li & Chan, 2012).

The aforementioned studies focused on the effects of attachment on relationship satisfaction within one individual, i.e. actor effects. However, couples relationships are dyadic by nature, thus implying the potential of partner effects, i.e. effects of the partner's attachment on one's own relationship satisfaction. Indeed, cohabiting with a hyperactivating, anxious, clinging and controlling partner, or an emotionally deactivating, distancing partner, likely has repercussions on the other's relationship satisfaction, as was evident from a review by Mikulincer and Shaver (2016). In general, partner effects were somewhat smaller than actor effects. With regard to partner effects, their review shows no consistent pattern of gender differences. Some studies found men to be more affected by women's anxiety and women by men's avoidance, suggesting a traditional gender-related difference in needs for autonomy (men) and closeness (women), but others reported partner effects to be reversed reflecting discrepancies with role-expectancies, i.e. negative partner effects of men's anxiety (who are expected to be autonomous) and of women's avoidance (who are expected to urge for closeness) (Mikulincer & Shaver, 2016). These inconsistencies may have to do with sampling or specific instruments used. For example, in dating couples anxiety about abandonment may be prominent, whereas in longer lasting relationships investment in the relationship and responsibilities of raising children may limit fears of being abandoned.

ATTACHMENT AND SEXUAL SATISFACTION

Associations between attachment and sexual satisfaction have been amply theorized but scarcely studied. Sexual satisfaction is often defined as frequency and pleasantness of sexual activity with the partner (Arrindell, Boelens, & Lambert, 1983). Sexual activity implies a physical proximity that may enhance emotional closeness and attachment, whereas conversely, insecure attachment may fuel negative sexual experiences disrupting intimacy (Birnbaum, 2010). Both attachment anxiety and avoidance may be negatively related to sexual satisfaction, although the underlying process may be different. Anxiously attached people may use sex as a means for getting approval and affection from their partner, leaving them vulnerable to disappointment with sexual relations. In contrast, avoidantly attached people may experience sexual relationships and associated intimacy as uncomfortable (Birnbaum, 2010; Davis et al., 2006). Furthermore, they may have a tendency to get involved in sexual activity for physiological reasons such as stress reduction, which may lead them to prefer solitary sex over intercourse (Davis et al., 2006). Not surprisingly, the positive association between sexual and relationship satisfaction (Sprecher & Cate, 2004) is stronger in anxiously attached than in avoidant individuals (Tracy, Shaver, Albino, & Cooper, 2003). Furthermore, as women tend to score higher on anxiety than men (Del Giudice, 2011), it is expected that the association between sexual and relationship satisfaction will be stronger in women.

The majority of the (scant) empirical studies on actor effects of attachment found both avoidance and anxiety negatively related to sexual satisfaction in both genders (Butzer & Campbell,

2008; Davis et al., 2006; Little, McNulty, & Russell, 2010; Milad, Ottenberger, & Artigas, 2014; Morrison, Goodlin-Jones, & Urquiza, 1997), although some studies found evidence exclusively for associations with actor avoidance (Brassard, Péloquin, Dupuy, Wright, & Shaver, 2012), and one study in a female sample exclusively for actor anxiety (Birnbaum, 2007). Only three studies were identified that estimated both actor and partner effects (Brassard et al., 2012; Butzer & Campbell, 2008; Milad et al., 2014). In men, these studies consistently found that partner anxiety does not, but partner avoidance does negatively affect sexual satisfaction. In women these studies found partner effects too, two pointing to partner avoidance (Butzer & Campbell, 2008; Milad et al., 2014) and the other to partner anxiety (Brassard et al., 2012). Brassard et al. explained their deviating result by emphasizing the clinical nature of their sample, arguing that the men excessively invested in seeking attachment reassurance through sexuality, which in turn may have fueled their female partners' sexual dissatisfaction.

THE CURRENT STUDY

The design of the present study extends previous studies in several respects. First, we tested for gender differences in the associations between attachment and both relationship and sexual satisfaction in one model. Accordingly, we can test not only for gender differences in the impact of attachment within one outcome, but also between outcomes. To our knowledge, this is the first study to test directly for such gender differences. Second, including partner effects as well as actor effects allowed for a more comprehensive understanding of the couples' dynamics. Third, we included two samples to test for the robustness of findings across samples. Fourth, instead of just examining whether we could replicate individual path coefficients between actor and partner attachment and both outcomes, we attempted to replicate a complete model across samples. Finally, we examined community and (scarcely studied) distressed couples in order to broaden generalizability to long lasting relationships, and to gain better insight in attachment dynamics in distressed couples for improvement of assessment and treatment.

Based on this review of pertinent research, we formulated the following specific hypotheses: (a) for both genders, a negative association was expected between actor attachment on the one hand and both relationship satisfaction (Li & Chan, 2012) and sexual satisfaction on the other (Brassard et al., 2012; Butzer & Campbell, 2008; Little et al., 2010; Milad et al., 2014; Morrison et al., 1997), with a stronger effect for actor avoidance compared to actor anxiety; (b) in women, comparable associations of partner attachment with both outcomes were expected, because for women intimacy was found to be important for both relationship and sexual satisfaction (Sprecher, 2002; Tiegs et al., 2007; Vohs et al., 2004); (c) in men, a negative association of partner avoidance with sexual satisfaction was expected (Brassard et al., 2012; Butzer & Campbell, 2008; Milad et al., 2014), but, because men are likely to attach less importance to intimacy than women, no or a weak association with relationship satisfaction was anticipated (Sprecher, 2002; Tiegs et al., 2007; Vohs et al., 2004).

METHOD

Participants and Procedure

Inclusion criteria for couples in both samples were (a) age greater or equal than 18, (b) being in a heterosexual relationship, and (c) adequate comprehension of the Dutch language. An additional inclusion criterion in the community sample was living together, and in the distressed sample not meeting DSM criteria for axis I or II disorder(s). We expected the distressed sample to score lower on relationship and sexual satisfaction and higher on attachment anxiety and avoidance than the community sample. The community sample was recruited from the general population by means of a postal request. Couples were obtained by randomly selecting 1,000 addresses from representative telephone number databases covering the three Northern provinces of the Netherlands. Only when both partners of a couple responded were they included in the analyses. The 11.3% response rate in the community sample was higher than the 6.8% reported by Kurdek's (2005) longitudinal study. Couples from the distressed sample participated in a separately designed study on the effectiveness of a group course for couples. These couples ($N = 113$) were recruited by

advertising, private practices, and a mental health organization. Of note, the fact that this number exactly equals that of the community sample was not by design, but entirely accidental. Questionnaires were administered in paper and pencil format. Partners from the community sample received and returned questionnaires separately by mail to safeguard privacy, while partners from the distressed sample completed the questionnaires separately after the screening interview, i.e. five weeks prior to the intervention.

Measures

Cronbach's alphas of all measures were computed separately in both samples (see Table 1), and ranged from adequate ($\alpha = .76$) to excellent ($\alpha = .93$).

The *Experiences in Close Relationships* questionnaire (ECR), measuring adult attachment in romantic relationships, was administered in both samples. It comprises two subscales of 18 items each: Anxiety about rejection and abandonment, i.e. the expectation of being perceived by partners as unacceptable or unlovable (example item 'I worry about being abandoned'), and Avoidance of intimacy, i.e. the expectation of inaccessibility and unresponsiveness of partners to one's attachment needs (example item 'I try to avoid getting too close to my partner'). Items are scored on a 7-point Likert scale ranging from 1 (disagree strongly) through a middle position 4 (neutral/mixed) to 7 (agree strongly). The Dutch ECR, was found to be valid and reliable (Conradi, Gerlsma, Van Duijn, & De Jonge, 2006).

The *Dutch Relationship Questionnaire* (DRQ) was used to measure relationship and sexual satisfaction in the community sample. Relationship satisfaction is assessed by the DRQ's total score (minus the subscale Sexual satisfaction) consisting of 69 items, and reflects multiple aspects, including the degree of emotional cohesion, conflict handling, partner acceptance, and positive self and other evaluation (example item 'My partner and I long for each other when we are not together'). The Sexual satisfaction subscale (11 items) measures satisfaction with attunement (of mainly frequency) of individual sexual needs (example item 'I am satisfied with the frequency we have sex'). All 80 statements follow a binary response format (i.e., 'correct' or 'incorrect'). Evidence for the validity of the subscales has been documented in several samples (Barelds, Luteijn, & Arrindell, 2003).

The *Dyadic Adjustment Scale* (DAS) was used to assess relationship satisfaction in the distressed sample. The total score of the 32 item DAS self-report questionnaire measures multiple aspects of relationship satisfaction, including cohesion, affectional expression, consensus/conflict, and satisfaction (example item 'Do you confide in your mate?'). Responses are indicated on Likert scales with variable response options, such that a higher total score is indicative of higher satisfaction with the relationship. Criterion validity in terms of marital status (i.e. married or divorced) is strong as is construct validity (Spanier, 1976).

Finally, the *Maudsley Marital Questionnaire* (MMQ) was applied to measure sexual satisfaction in the distressed sample. The subscale consists of five items measuring frequency, and the degree of pleasantness of sex with the partner (example item 'Are you satisfied with the present frequency of sexual intercourse'). Responses are indicated on an 8-point Likert scale with variable response options. Higher scores on the scale indicate higher sexual satisfaction. Favorable psychometric properties such as test–retest reliability and validity have been reported (Arrindell et al., 1983).

Statistical Analyses

Interdependence tests revealed that study variables were significantly correlated between partners implying the necessity of dyadic analysis. We therefore applied an Actor-Partner-Interdependence-Model (APIM) framework (Cook & Kenny, 2005) with couple as the unit of analysis. APIM models take into account partner interdependence, in this case actor and partner effects of attachment on relationship and sexual satisfaction. The model was estimated using structural equation modeling (SEM) as implemented by Mplus version 6.1. SEM allows for developing more parsimonious models that can be tested for model-fit and replicability in subsequent studies.

Our approach involved three steps. First, we estimated the full APIM including all possible associations between the four attachment variables (male and female avoidance and anxiety) and the four satisfaction outcomes (male and female relationship and sexual satisfaction). Thus, a total

Table 1
Socio-Demographic Characteristics

	Community sample								Distressed sample								Community versus distressed samples
	Men $n = 113$			Women $n = 113$			All $n = 226$		Men $n = 113$			Women $n = 113$			All $n = 226$		All $n = 452$
	%			%			%		%			%			%		
Education																	
Low	9.0			20.4			14.7		14.0			7.1			10.6		$X^2 = 21.32$;
Middle	44.1			47.8			46.0		23.7			34.5			29.1		$df = 2$;
High	46.8			31.9			39.3		61.7			58.4			60.4		$\mathbf{p < .001}$
Living status																	
Living apart							0.0								7.8		$X^2 = 26.33$;
Cohabiting							14.5								23.9		$df = 2$;
Married							85.5								68.3		$\mathbf{p < .001}$
	M	*SD*	α	*M*	*SD*	α	*M*	*SD*	*M*	*SD*	α	*M*	*SD*	α	*M*	*SD*	
Age years	48.67	14.32		45.88	13.99		47.27	14.19	44.41	9.71		41.95	9.69		43.20	9.75	$Z = -2.77$; $\mathbf{p < .001}$
Relationship duration years							20.60	13.30							15.76	9.93	$t = 3.10$; $\mathbf{p = .002}$
# Children							2.2	1.2							2.1	1.43	$Z = -.84$; $p = .401$
Avoidance	44.04	13.60	0.76	45.25	13.80	0.79	44.63	13.68	53.96	5.46	0.87	56.93	17.43	0.89	55.45	16.51	$Z = -7.21$; $\mathbf{p < .001}$
Anxiety	48.49	16.78	0.85	55.84	17.37	0.82	52.15	17.43	66.62	7.92	0.88	71.77	7.60	0.87	69.20	17.91	$Z = -9.23$; $\mathbf{p < .001}$
Relationship satisfaction	125.70	10.74	0.93	125.88	10.40	0.91	125.79	10.55	94.74	16.46	0.89	88.59	19.84	0.91	91.66	18.44	
Sexual satisfacton	18.71	3.95	0.91	20.74	3.15	0.86	19.72	3.71	23.89	10.74	0.84	22.06	1.01	0.83	22.96	10.90	

Bold indicates statistically significance values

of 16 (4 × 4) path-coefficients (standardized βs) were estimated resulting in a saturated (0 degrees of freedom), nonparsimonious model. Second, we tested for differences in path-coefficients in two ways: (a) between genders within outcomes (e.g., whether actor avoidance in men had a different effect on relationship satisfaction than in women), and (b) within genders between outcomes (e.g., whether actor avoidance in men had a different effect on relationship satisfaction than on sexual satisfaction). These comparisons were all based on Wald's test of parameter constraints. Because different outcome measures were used across samples, multiple group analyses regarding samples were not possible, and therefore βs were not statistically compared across samples. Third, based on the results obtained in the second step, we developed a more parsimonious model summarizing the main conclusions, which we subsequently tested for model-fit in both samples.

Manifest variables were used in the APIM analyses. Scale scores were calculated by summing the items. Because Shapiro Wilk's tests pointed out that most study variables were not normally distributed, we used Maximum Likelihood estimation with Robust standard errors (MLR) in SEM, which is robust to deviations from normality (Bentler & Dudgeon, 1996; Kline, 2012). Percentages of missing scale scores for all participants combined ranged from 0.0% to 0.7%. For all significance tests α was set at .05. No control variables were included. To evaluate model fit, we used the Root Mean Square Error of Approximation (RMSEA; .01 = excellent fit; .05 = good fit; .08 = mediocre fit; MacCallum, Browne, & Sugawara, 1996), Comparative Fit Index (CFI; 0.95 = excellent fit; 0.90 = adequate fit; Hu & Bentler, 1999), Tucker Lewis Index (TLI, same criteria as CFI) and Standard Root Mean Square Residual (SRMR; <0.08 = good fit; Hu & Bentler, 1999). As the full APIM model is a completely saturated model, only comparative fit-indices can be used to evaluate model-fit across parsimonious models. To this end we used the sample adjusted Bayesian Information Criterion (BICsa) and the Aikaki Information Criterion (AIC).

To assess study power we conducted a series of Monte Carlo simulations (Muthén & Muthén, 2002), in which sets of data are generated on the basis of a presumed population-model. Subsequently the model to be tested was fitted to each of these datasets. Accordingly, power could be calculated on the basis of the distribution of outcomes in the different datasets for each of the analyses. It was found that the power to detect a medium effect-size was sufficiently large for (a) parameter-estimates, i.e. single predictors, (an effect-size of 0.3 was detected in 91% of the models), (b) the WALD *z*-tests for the differences between two effects, and (c) fit of the parsimonious model.

RESULTS

Sample Characteristics

Sample characteristics are displayed in Table 1. The mean age of respondents (M = 45.2 SD = 12.0, range 22–86) was comparable with the average age in the Dutch population (CBS, State Bureau of Statistics). However, both samples attained higher educational status than did the general population. The mean relationship duration of the couples in the community and distressed samples was 20.6 years (SD = 13.3, range 1.0–52.0) and 15.8 years (SD = 9.9, range 0.75–44.0) years, respectively. 85.5% of the community sample couples were married (68.3% of the distressed couples) and 14.5% cohabitated (23.9% of the distressed couples). All couples combined had on average two children (range 0–11), and almost all were Caucasian. The community sample was older, had lower education, showed somewhat higher rates of being married/cohabiting, reported longer relationship duration, and scored as anticipated lower on attachment avoidance and anxiety than the distressed couples. Compared to norm groups, both male and female participants in the distressed sample scored, as was expected, above average on avoidance and anxiety (women reporting higher anxiety than men [$Z = -2.20$, $p = .03$]) and under the cut-off of 97 on relationship satisfaction indicating relational distress (women reporting higher distress than men [$Z = -2.73$; $p = .006$]). In the community sample, means on all study variables were in the average range compared to norm groups.

Full APIM

Correlations between study variables are presented in Table 2 (online). Correlations between Relationship and Sexual satisfaction were .39 for men and .63 for women in the community sample, and .53 for men and .37 for women in the distressed sample (all p's < .01).

Table 2
Spearman's Rho Correlations Between Study Variables (Online)

	Community sample						Distressed sample					
	1	2	3	4	5	6	1	2	3	4	5	6
1. Actor avoidance	–	.34**	.46**	.19*	−.62**	−.42**	–	.06	.13	.27**	−.45**	−.28**
2. Actor anxiety	.34**	–	.29**	.25**	−.34**	−.23**	.02	–	.11	−.01	−.15	.02
3. Partner avoidance	.46**	.19*	–	.34**	−.63**	−.43**	.15	.26**	–	.00	−.30**	−.28**
4. Partner anxiety	.29**	.25**	.34**	–	−.37**	−.19*	.12	−.02	.11	–	−.24*	−.04
5. Relationship satisfaction	−.67**	−.38**	−.32**	−.33**	–	.63**	−.43**	−.24*	−.23*	−.12	–	.37**
6. Sexual satisfaction	−.29**	−.23*	−.39**	−.20*	.39**	–	−.31**	−.20*	−.38**	.01	.53**	–

Note: Below the diagonal correlations for men, above for women. *$p < .05$, **$p < .01$.

First, the saturated full APIM model was fitted for both the community sample (BICsa = 978.18; AIC = 992.24) and the distressed sample (BICsa = 1046.86; AIC = 1059.59). These fit-indices cannot be interpreted per se, but will be used for comparison with the parsimonious model below.

Regarding Relationship satisfaction, the proportion explained variance by the full model was 53.6% in men versus 46.8% in women from the community sample, and 25.6% in men versus 21.4% in women from the distressed sample. Estimations of the 16 path coefficients are displayed in Table 3/Figure 1. In all cases significant associations were negative, meaning that higher attachment Avoidance or Anxiety predicted lower Relationship or Sexual satisfaction. With regard to Relationship satisfaction significant effects of actor Avoidance were consistently found in both genders and samples (in the community sample in men [$\beta = -.66$] and in women [$\beta = -.35$]; in the distressed sample in men [$\beta = -.40$] and in women [$\beta = -.33$]). For men, a significant actor effect was observed for Anxiety in the community sample ($\beta = -.18$), but not in the distressed sample ($\beta = -.19$, *n.s.*). Partner effects were found for Avoidance in women in the community ($\beta = -.37$) and the distressed samples ($\beta = -.24$), but absent in men from both samples.

Regarding Sexual satisfaction, the proportion of explained variance in the community sample was 21.5% in men versus 25.3% in women. For the distressed sample, the proportion of explained variance was 22.3% in men and 14.1% in women respectively. Significant actor effects of Avoidance were found in the community sample in women ($\beta = -.23$), but not in men, and in the distressed sample for both genders (men, $\beta = -.26$; women, $\beta = -.24$). For actor Anxiety no significant effects were found. Partner effects were found for Avoidance for both genders in both samples (community sample men, $\beta = -.27$, and women, $\beta = -.32$, respectively; distressed sample men, $\beta = -.31$, and women, $\beta = -.27$, respectively).

Differences in Path-Coefficients Between Genders and Outcomes

First, we compared between genders the path coefficients (Table 3/Figure 1) of attachment within each outcome separately (e.g., whether the βs between actor Avoidance and Relationship satisfaction differed between men and women). This involved eight comparisons per sample (4 predictors * 2 outcomes). Two significant gender differences were found. In the community sample, the effect of actor Avoidance on Relationship satisfaction was significantly stronger in men than in women ($\beta = -.66$ vs. $\beta = -.35$; Wald $\chi^2(\text{df} = 1) = 8.596$, $p < .01$), while the effect of partner Avoidance on Relationship satisfaction was significantly stronger in women than in men ($\beta = -.37$ vs. $\beta = .09$; Wald $\chi^2(df = 1) = 17.053$, $p < .01$). No significant gender differences were observed in the distressed sample for Relationship satisfaction, nor for Sexual satisfaction in either sample.

Second, we compared between outcomes the path coefficients of attachment within each gender separately (e.g. whether in men the β between actor Avoidance and Relationship satisfaction differed from the β between actor Avoidance and Sexual satisfaction). This involved four comparisons per gender, totaling eight comparisons per sample. In men, we found the influence of partner Avoidance on Sexual satisfaction to be stronger than on Relationship satisfaction both in the community sample ($\beta = -.27$ vs. $\beta = .09$; Wald $\chi^2(df = 1) = 12.381$, $p < .01$) and in the distressed sample (β=-.31 vs. β=-.13; Wald $\chi^2(df = 1) = 4.899$, $p = .03$). Furthermore, in men from the community sample actor Avoidance was more strongly associated with Relationship satisfaction than with Sexual satisfaction ($\beta = -.66$ vs. $\beta = -.13$; Wald $\chi^2(df = 1) = 27.793$, $p < .01$), but this was not replicated in the distressed sample. In women, no significant differences were found between actor and partner effects of attachment on Relationship and Sexual satisfaction.

Parsimonious APIM

In the above analyses per sample 16 path coefficients were estimated (step 1) and 16 comparisons were made (step 2). This yields a rather exploratory and difficult to replicate approach to data-analysis with possible chance findings. To improve on this, we developed a more parsimonious SEM-based APIM guided by four expectations/constraints derived from the previous analyses: (a) gender differences in impact of actor and partner attachment on Sexual satisfaction are absent; (b) in women, actor and partner attachment affect Sexual and Relationship satisfaction equally; (c) in men, partner Avoidance affects Sexual but not Relationship satisfaction; and

Table 3
Path-Coefficients of Attachment on Relationship and Sexual Satisfaction in Full APIM

	Relationship satisfaction				Sexual satisfaction			
	Men community sample $n = 113$ β *(p)*	Men distressed sample $n = 113$ β *(p)*	Women community sample $n = 113$ β *(p)*	Women distressed sample $n = 113$ β *(p)*	Men community sample $n = 113$ β *(p)*	Men distressed sample $n = 113$ β *(p)*	Women community sample $n = 113$ β *(p)*	Women distressed sample $n = 113$ β *(p)*
Actor Avoidance	**−.66 (< .001)**ae	**−.40 (< .001)**	**−.35 (< .001)**a	**−.33 (< .001)**	−.13 (.27)e	**−.26 (< .001)**	**−.23 (.048)**	**−.24 (.003)**
Actor Anxiety	**−.18 (.029)**	−.19 (.08)	−.09 (.34)	−.09 (.33)	−.18 (.06)	−.14 (.15)	−.07 (.39)	.06 (.45)
Partner Avoidance	.09 (.25)bc	−.13 (.12)d	**−.37 (< .001)**b	**−.24 (.01)**	**−.27 (.02)**c	**−.31 (< .001)**d	**−.32 (.002)**	**−.27 (.002)**
Partner Anxiety	−.09 (.26)	−.08 (.33)	−.08 (.36)	−.05 (.60)	−.07 (.51)	.08 (.33)	.01 (.94)	.04 (.71)

Note: Path coefficients with equal subscripts differ significantly.
Bold indicates statistically significance values

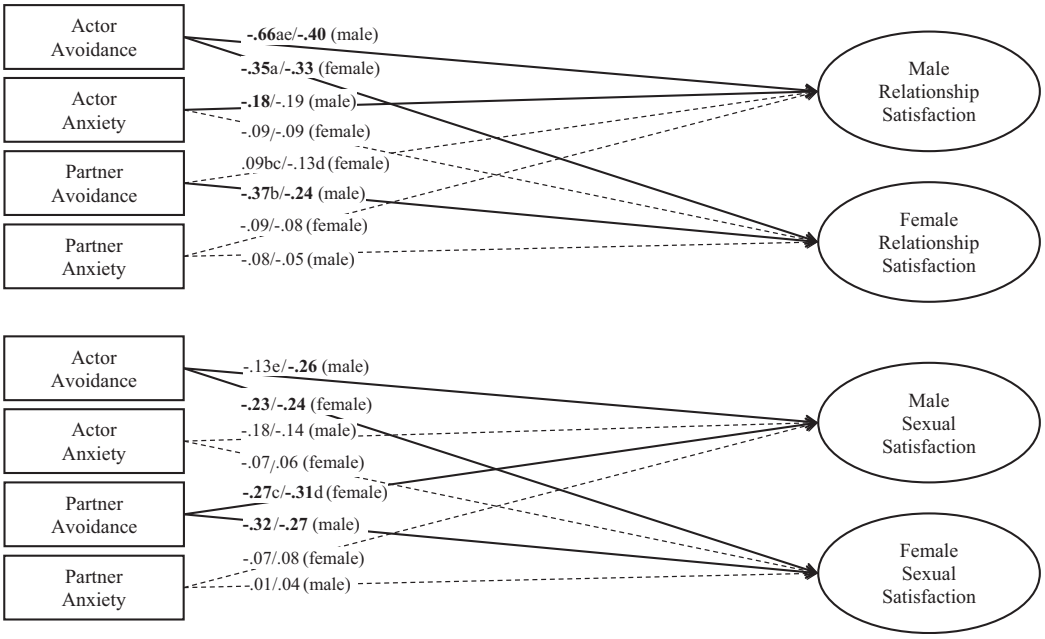

Figure 1. Full APIM.
Note 1: path coefficients before the slash are from the community sample and after the slash from the distressed sample;
Note 2: bold path coefficients are significant ($p < .05$);
Note 3: path coefficients with equal subscripts differ significantly;
Note 4: dashed lines represent absence of significant attachment effects.

(d) partner Anxiety does not influence Relationship nor Sexual satisfaction. These four changes resulted in the parsimonious model (online Table 4/Figure 2) which showed adequate to good fit in the community sample ($\chi^2(df = 11) = 15.18$, $p > .10$; RMSEA = 0.06, CFI = 0.98, TLI = 0.96, SRMR = 0.05; BICsa = 978.44; AIC = 987.35) and good to excellent fit in the distressed sample ($\chi^2(df = 11) = 13.07$, $p > .10$; RMSEA = 0.04; CFI = 0.99, TLI = 0.98, SRMR = 0.04; BICsa = 1042.42; AIC = 1050.48). Compared to the full model, this parsimonious model showed no (ΔBICsa = 0.26) or minimal (ΔAIC = −4.89) fit improvement in the community sample, and small improvement in the distressed sample (ΔBICsa = −4.44; ΔAIC = −9.11).

DISCUSSION

This study examined gender differences in associations between actor- and partner attachment on the one hand, and relationship and sexual satisfaction on the other, in both a community and a distressed sample. Actor attachment avoidance in both men and women was negatively associated with their relationship and sexual satisfaction, with exception of male sexual satisfaction in the community sample (partial support for hypothesis a). In women, male attachment avoidance was negatively associated with relationship and sexual satisfaction (support for hypothesis b), while in men female attachment avoidance was negatively associated with sexual satisfaction but not with relationship satisfaction (support for hypothesis c). The results as summarized in the parsimonious model showed, depending on the sample, adequate to excellent fit. In sum, this means that in both men and women actor avoidance of intimacy plays a central role in their relationship and sexual dissatisfaction. In this sense the conclusions of Hyde (2005), Karney and Bradbury (1995) and (Kurdek, 2005) that claims of gender differences are inflated, seems replicated. The only robust exception was that female relationship satisfaction is negatively affected by male avoidance, while male relationship satisfaction is not affected by female avoidance.

Table 4
Path-Coefficients of Attachment on Relationship and Sexual Satisfaction in Parsimonious APIM (Online)

	Relationship satisfaction				Sexual satisfaction			
	Men community sample $n = 113$ β *(p)*	Men distressed sample $n = 113$ β *(p)*	Women community sample $n = 113$ β *(p)*	Women distressed sample $n = 113$ β *(p)*	Men community sample $n = 113$ β *(p)*	Men distressed sample $n = 113$ β *(p)*	Women community sample $n = 113$ β *(p)*	Women distressed sample $n = 113$ β *(p)*
Actor Avoidance	**−.67 (< .001)**	**−.40 (< .001)**	**−.28 (< .001)**	**−.24 (< .001)**	**−.28 (< .001)**	**−.24 (< .001)**	**−.28 (< .001)**	**−.24 (< .001)**
Actor Anxiety	−.14 (.057)	**−.17 (.016)**	−.08 (.11)	**−.08 (.027)**	−.08 (.16)	**−.08 (.027)**	−.08 (.11)	**.08 (.027)**
Partner Avoidance	–	–	**−.34 (< .001)**	**−.28 (< .001)**	**−.34 (< .001)**	**−.28 (< .001)**	**−.34 (< .001)**	**−.28 (< .001)**
Partner Anxiety	–	–	–	–	–	–	–	–

Bold indicates statistically significance values

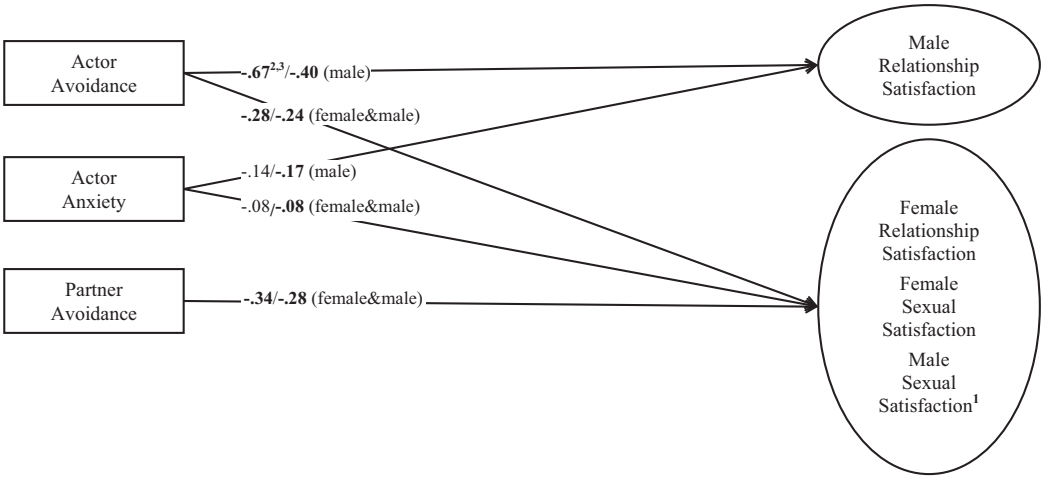

Figure 2. Parsimonious APIM (online).
Note 1: female Relationship Satisfaction and female and male Sexual Satisfaction are grouped in one oval because of the constraints in the parsimonious model, not because they refer to one latent construct.
Note 2: path coefficients before the slash are from the community sample and after the slash from the distressed sample.
Note 3: bold path coefficients are significant ($p < .05$).

Actor Avoidance and Satisfaction: Similarity Between Men and Women

Our finding that actor avoidance was substantially associated in both men and women with their relationship and sexual dissatisfaction is consistent with earlier research (Birnbaum, 2007; Brassard et al., 2012; Butzer & Campbell, 2008; Davis et al., 2006; Li & Chan, 2012; Little et al., 2010; Mikulincer & Shaver, 2016; Milad et al., 2014; Morrison et al., 1997). Dissatisfaction with the (non)sexual relation marks unfulfilled needs. Because men and women do not get what they want, they avoid intimacy and this may further deteriorate satisfaction. As we did not measure motives for avoidance of intimacy, we can only speculate on what these unfulfilled needs in the relationship are. From an attachment perspective, relationship satisfaction depends on the degree to which attachment needs for validation and support are fulfilled and build-up to a secure base from which partners explore and develop their more personal goals. Avoidance of intimacy, or deactivation of attachment needs, is a self-protective strategy against being hurt by a partner who is perceived to be not validating or supportive, resulting in distancing and reduced relationship satisfaction (Mikulincer & Shaver, 2016), functioning (Conradi, De Jonge, Neeleman, Simons, & Sytema, 2011), and sexual satisfaction (Brassard et al., 2012; Butzer & Campbell, 2008).

Deviating from this consistent pattern were men in the community sample. In this group, no effects of actor attachment were found on their sexual satisfaction. This could be a general difference between community and distressed samples. However, we did not find significant gender differences within the community sample concerning attachment effects on sexual satisfaction, so it could be a chance finding that should not be overstressed. This may illustrate an advantage of our model approach, namely distinguishing robust findings from possible chance- or sample-dependent differences in estimated coefficients.

Partner Avoidance and Satisfaction: Similarities and Differences Between Men and Women

Concerning sexual satisfaction, findings were in line with previous research (Butzer & Campbell, 2008; Milad et al., 2014). In both genders no (negative) effect was found for the partner's anxiety (which is understandable because anxious partners tend to please the other), while, also in both genders, the partner's avoidance had a negative effect. An avoidant partner who feels uncomfortable with mental and emotional closeness may withdraw from intimacy and sexual intercourse and thereby contribute to sexual dissatisfaction in the other partner (Butzer & Campbell, 2008).

The similarity in the effects of partner avoidance in men and women, however, does not necessarily imply that underlying sexual needs in both genders are the same. As mentioned in the Introduction, several studies suggest that physical release is a more important sexual motive in men than in women, while women may stress intimacy more than men (Sprecher, 2002; Tiegs et al., 2007; Vohs et al., 2004). This may mean that partner avoidance may result in less sexual satisfaction because of reduced physical release in men, and because of reduced intimacy in women. However, the current study cannot further clarify this issue as we did not measure sexual needs.

In contrast with sexual satisfaction, relationship satisfaction showed clear gender differences in the effects of partner avoidance; i.e. effects were absent in men and present in women. Women seem less satisfied with an avoidant partner who does not share feelings, and does not provide validation, comfort or support, in other words avoids co-regulation of emotions as is an important function of attachment. Partner withdrawal is destructive to reciprocal self-disclosure and intimacy which deteriorates the emotional climate of the relationship where women in particular seem sensitive to (Croyle & Waltz, 2002; Koski & Shaver, 1997; Loscocco & Walzer, 2013). In this way partner avoidance may result in less relationship (and sexual) satisfaction in women. Male relationship satisfaction, on the other hand, does not seem to be affected by avoidance of intimacy by their wives. This might be explained by findings that men may have less pronounced needs for closeness and intimacy than women (Koski & Shaver, 1997; Sprecher, 2002; Tiegs et al., 2007; Vohs et al., 2004). This explanation fits the traditional view of women emphasizing a need for closeness and men wanting more autonomy in relationships (Mikulincer & Shaver, 2016). It is also consistent with the prevalent demand-withdraw pattern in which women demand closeness, leaving them vulnerable to male avoidance, while men need more autonomy (Heavey, Layne, & Christensen, 1993) and therefore are less affected by their wife's avoidance of intimacy.

At the same time it needs to be emphasized that some of our findings do not converge with this traditional script of women searching intimacy and men stressing autonomy. First, relationship satisfaction in men was affected by their own avoidance of intimacy, which contradicts the idea that closeness would be unimportant to men. Second, it would be expected that the presumed male need for autonomy would be affected by their partner's anxiety about rejection through clinging partner behavior that may gear demand-withdraw patterns. However, no effect of partner attachment anxiety on male relationship satisfaction was found in this study. Finally, a wish for intimacy in women does not mean that women would have less desire for autonomy than men. Context effects, i.e. responding to questionnaires in accordance with culturally defined gender roles, may be in play (Hyde, 2005). Intriguing in this context is research reviewed by Mikulincer and Shaver (2016) suggesting that attachment insecurity is associated with stronger adherence to traditional gender roles. Attachment anxiety may enhance stereotypical femininity and attachment avoidance stereotypical masculinity.

It is important to state that all these interpretations are speculative, because the statistical dependencies found are based on data that do not refer to motives or mechanisms (biological or cultural) behind the interdependencies between partners. Replication of the finding of absence of partner effects on male relationship satisfaction is needed, since findings of previous studies are inconsistent (Mikulincer & Shaver, 2016). However, because we did not find partner effects on male relationship satisfaction in two samples, trust in the robustness of this finding in long lasting relationships is enhanced.

Anxiety: Minor Effects

Regarding relationship satisfaction, the dominance of the impact of actor avoidance over actor anxiety corresponds with earlier studies in both nondistressed (Li & Chan, 2012) and distressed samples (Mondor, McDuff, Lussier, & Wright, 2011). However, the observed null effects of actor anxiety (with the exception of the small effect in men from the community sample) are inconsistent with many earlier studies. It may be that in enduring partner relationships (often with children) like we studied, fear of abandonment is less of a concern than in the less mature relationships between students, an overrepresented group in the meta-analysis by Li and Chan (2012). The same reasoning may account for the absence of partner anxiety effects on relationship satisfaction in our study. Regarding sexual satisfaction, the null effects of partner anxiety were in line with prior

studies (Brassard et al., 2012; Butzer & Campbell, 2008; Milad et al., 2014) and may be explained by the tendency of anxious partners to please the other (Birnbaum, 2010).

Limitations

Several limitations warrant mentioning. First, almost all our respondents were married or cohabiting, and attained higher educational status than is normative in the general population. This limits the generalizability of our findings. Second, we did not measure biological factors nor cultural or behavioral motives behind the gender differences found. Moreover, our measures were all administered concurrently, which precludes true estimation of causal pathways between attachment and relationship outcomes. Prospective studies are needed to further elucidate these couple dynamics over time. Finally, the use of different self-report outcome measures across samples precluded straightforward direct comparisons across sample on these measures. On the other hand, the fact we obtained the same pattern of results despite different self-reports enhances trust in the robustness of our findings.

Research and Clinical Implications

Three implications for future research may be formulated. First, our findings nuance the impression suggested by prior research that actor effects are dominant. The relative importance of actor and partner effects may depend on gender, which underlines the need to include partner variables and apply APIM in couples' studies. Second, our findings clearly point out that direct comparison of the effects of different predictors on different outcomes has heuristic value. For example, actor attachment was a robust predictor of multiple outcomes, while partner avoidance was predictive only of specific outcomes depending on gender. Third, as indicated in the introduction, studies often show inconsistencies in comparisons of individual coefficients, c.f. the inconsistent results in partner effects of attachment on male relationship satisfaction (Mikulincer & Shaver, 2016) which may be a function of sample or instrument features. The development of a parsimonious model including sets of coefficients and equality constraints may improve research. Indeed, while individual coefficients differed between the two samples in our study, the final model showed adequate fit in both. This model approach may further accumulation of knowledge by pointing out which conclusions hold over samples and instruments and which do not.

Clinically, our results imply the importance of enhancing secure attachment in order to improve relationship and sexual satisfaction. Emotionally Focused Couple Therapy (Johnson, 1996) for example, stimulates partners to drop defenses like avoidance of intimacy and reveal their underlying attachment needs for validation and support. However, the finding that men seem less dependent for their relationship satisfaction on their wives' attachment behaviors than vice versa, may suggest it is harder for men than for women to experience and express their attachment needs in the nonsexual than in the sexual relation. As we found men and women to be equally dependent on each other's attachment for their sexual satisfaction, a timely switch from discussing attachment needs in the nonsexual to the sexual relationship might prove fruitful. Discussing feelings of intimacy in the context of sex combined with physically experiencing intimacy by touch exercises may provide an opportunity to deeply experience affection and by this foster emotional closeness between partners. The positive association between sexual and relationship satisfaction (Sprecher & Cate, 2004) suggests a broaden-and-build cycle between sexual and relationship satisfaction and secure attachment.

In sum, in enduring relationships men and women seem equally affected by each other's attachment behaviors for sexual satisfaction, while for relationship satisfaction men seem less influenced by their wives' attachment than vice versa.

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