
“I can’t get no satisfaction”: Insecure attachment, inhibited sexual communication, and sexual dissatisfaction

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Abstract

An Internet survey was conducted to extend the investigation of attachment style to the domains of sexual communication and sexual satisfaction. We hypothesized that insecure attachment would be associated with sexual dissatisfaction, mediated by inhibited communication of sexual needs. Further, the association of attachment with inhibited communication was expected to be mediated by attachment-related tendencies toward deference to partners’ needs, concern with the relationship implications of sexual choices, general anxiety regarding sex, and feelings for one’s partner. Somewhat different mediational pathways were predicted for each of the 2 dimensions of attachment insecurity: anxiety and avoidance. Respondents ($N = 1,989$, around half of them involved in a sexual relationship at the time of the study and half not involved but with previous sexual relationship experience) completed measures of attachment-related anxiety and avoidance, neuroticism (a possible confound), and sexual communication and satisfaction. Results generally supported the hypotheses and provided additional evidence regarding the associations between attachment style, sexual communication, and sexual satisfaction.

Bowlby’s (1973, 1982) evolutionary psychological theory of human development proposed that lifelong patterns of relating to others—attachment styles—are formed in infancy and childhood based on the quality of the child’s relationships with primary caregivers. When caregivers are warm, sensitive, skillful, and responsive to children’s needs for safety and help with emotion regulation, the children tend to develop a “secure” attachment style, whereas if caregivers are unskillful, inconsistent, cold, insensitive, punishing, or rejecting, the children tend to develop an “insecure” attachment style, characterized by anxiety, avoidance, or both (Ainsworth, Blehar, Waters, & Wall, 1978). Once formed, attachment-related emotions, expectations, goals, and behavioral strategies tend to persist and influence

many aspects of a person’s social relationships, including sex (see Mikulincer & Shaver, 2003, in press).

Previous research using measures of adult attachment styles, which vary along the dimensions of anxiety and avoidance (Brennan, Clark, & Shaver, 1998), has found that both attachment anxiety and avoidance are associated with negative feelings during sex (Birnbaum, Reis, Mikulincer, Gillath, & Orpaz, in press; Gentzler & Kerns, 2004; Tracy, Shaver, Albino, & Cooper, 2003), lower sexual satisfaction (Birnbaum, in press), and less positive appraisals of sexual aspects of oneself (Cyranski & Andersen, 1998). Relatively little is known, however, about possible mediators of the associations between attachment insecurities and sexual difficulties and dissatisfaction. The present study was designed to (a) explore the possibility that the associations between attachment and dissatisfaction with sex are mediated, at least in

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part, by inhibited communication about sex; (b) examine several potential mediators of the relation between attachment and inhibited communication; and (c) explore the differential mediators of the association between attachment and satisfaction with the physical and emotional aspects of a sexual relationship as well as the degree of control one has over sexual activities.

Attachment and communication of sexual needs

Theoretically, an attachment style is formed largely through communication and the negotiation of need satisfaction between young children and their primary caregivers (e.g., Weinfield, Sroufe, Egeland, & Carlson, 1999). Hence, it would not be surprising if these patterns of communication and negotiation persisted into later childhood and adulthood. And indeed, research has linked insecure attachment with dysfunctional patterns of communication in contexts as different as childhood friendships, adult friendships and romantic relationships, work relationships, and relationships with medical professionals (e.g., Maunder et al., 2006; Roberts & Noller, 1998; Schachner, Shaver, & Mikulincer, 2005).

Our general hypothesis that insecure attachment is associated with inhibited expression of sexual needs, and therefore with sexual dissatisfaction, is based on two propositions. First, attachment style itself is based on learned expectations regarding the consequences of expressing one's needs to close relationship partners. Because of their previous experiences, adults with an insecure attachment style have relatively pessimistic or troubling expectations about relationship partners' responses to expressed needs. Second, other emotions, expectations, and goals associated with attachment style are likely to affect the expected consequences of need expression, as explained below.

Attachment-related expectations regarding effectiveness of need expression

Individual differences along the two major dimensions of attachment insecurity—*anxiety*

and *avoidance*—have been hypothesized to develop in response to a history of poor parental and partner responses to the communication of needs (Cassidy & Shaver, 1999). Research on attachment to caregivers during infancy and childhood (e.g., Thompson, 1999; Weinfield et al., 1999) indicates that *attachment anxiety* results when caregivers are inconsistent and unreliable in responding to a child's distress signals and are nervous, awkward, self-centered, or intrusive in providing care. This relative unreliability and inconsistency leads anxious infants to develop a "hyperactivating" style involving *hypersensitivity* to threats (because threats have been ineffectively managed by caregivers) and *hypervigilance* regarding the availability and sensitivity of relationship partners, which tend to fuel high levels of clinginess and desires for closeness, proximity, and reassurance.

Avoidant attachment results when parents respond consistently but negatively (e.g., coolly, distantly, or angrily) to bids for proximity, support, or protection. Parents of avoidant children actively discourage negative emotional expressions and withdraw from their children in response to expressions of negative (but not positive) emotion. As a result, avoidant children are less likely to communicate with their mothers when upset, learning instead to seek support without displays of distress or to become "compulsively self-reliant" (Bowlby, 1982). Over time, the child learns to deactivate the attachment system and habitually downregulate needs for closeness, comfort, and support from others (Mikulincer & Shaver, 2003).

In summary, both anxious and avoidant children learn that expressions of need are likely to be ineffectively handled or actively punished. In turn, as compared to secure children, they may become reluctant to express needs clearly and directly. This distortion of need expression may affect communication about sexual needs in adult relationships. Four areas of research are relevant to considering how attachment style might affect whether and how a person expresses and negotiates sexual need satisfaction.

First, research on intimate self-disclosure to romantic partners has revealed a negative

correlation between avoidant attachment and self-disclosure (e.g., Anders & Tucker, 2000; Bradford, Feeney, & Campbell, 2002; Mikulincer & Nachshon, 1991), and both avoidant and anxious attachment have been associated with failure to disclose socially undesirable sexual preferences such as homosexuality (e.g., Elizur & Mintzer, 2001; Mohr & Fassinger, 2003) and with being generally secretive (e.g., Vrij, Paterson, Nunkoosing, Soukara, & Oosterwegel, 2003).

Second, research on caregiving has established that insecure people (particularly those who are avoidant) are less likely to seek support or care from their partners in times of need (Collins & Feeney, 2000). Moreover, both forms of insecurity are associated with negative cost-benefit expectations regarding support seeking (Collins & Feeney; Ognibene & Collins, 1998), lack of healthy assertion of preferences (Roberts & Noller, 1998), self-reports of inhibited expression of needs to romantic partners (Davis & Follette, 2000a), and failure to deal constructively with conflict (Creasey, 2002; Creasey & Hesson-McInnis, 2001; Davis & Follette, 2000b; Shi, 2003). Avoidants, for example, are likely to let problems or conflicts persist rather than to attempt to negotiate successful outcomes.

Finally, this reluctance to communicate and negotiate one's needs with a romantic partner is based partly on lack of trust (Pistole, 1993), negative expectations regarding partner responsiveness and support, and perceived costs and benefits of seeking support from others (Collins & Feeney, 2000). Indeed, both attachment anxiety and avoidance are associated with lower communication competence and assertiveness, which is in turn related to less satisfactory attainment of social support (e.g., Anders & Tucker, 2000).

These lines of research provide the basis for predicting that both anxiety and avoidance will be negatively related to communication of sexual needs, which in turn will lower sexual satisfaction. However, although both forms of insecurity are likely to be related to inhibited communication of sexual needs, there is reason to expect this inhibition to arise through somewhat different pathways

for people with different forms of attachment insecurity.

Attachment-specific pathways to inhibition

Sex as a "barometer" and determinant of relationship status. By definition, attachment anxiety involves chronic concern over the potential loss of attachment figures. Anxious people tend to be "hypersensitive" to rejection and "hypervigilant" with respect to threats of love withdrawal or unavailability of attachment figures. Hence, they monitor and interpret unfolding events in terms of these events' implications for relationship issues (Mikulincer & Shaver, 2003). In particular, sexual desire can be interpreted as a sign of love, and sexual behavior can reassure a person of a partner's continuing love and interest (Davis, Shaver, & Vernon, 2004). Likewise, lack of desire or refusal to engage in sex may be interpreted as a sign of waning interest or affection. This tendency to interpret sexual activity as a reflection of relationship status may cause a person to be cautious about asserting sexual needs and wishes, particularly preferences—such as *not* wanting to have sex—that might be perceived as reflecting relationship status. Hence, we expected attachment anxiety to be associated with concern over the relationship implications of sexual behavior, which in turn would be associated with inhibition of expression of one's own sexual needs (Hypothesis 1).

Deference to a partner's preferences. Failure to express one's own sexual needs may also result from concern about a partner's preferences. One may defer to the needs of a partner in order to please the partner or to avoid offense or conflict. Attachment anxiety is related to approval seeking and concern over other people's evaluative reactions (Mikulincer & Shaver, 2003). Hence, attachment anxiety was expected to predict deference to a partner's sexual preferences—and hence inhibited expression of one's own preferences—as a way to maximize partner approval (Hypothesis 2).

Feelings toward one's partner. Another possible reason for failing to express one's sexual needs to a partner is that the relationship

itself may be troubled in various ways. People involved in relationships that are relatively low in intimacy, closeness, love, trust, and mutual satisfaction may feel uncomfortable with self-disclosure of all kinds, including discussion of sexual needs and preferences. By definition, avoidance involves aversion to closeness and intimacy, and avoidance has been empirically associated with fear of intimacy (e.g., Greenfield & Thelen, 1997), communication apprehension (Mohr, 1999), relatively low degrees of love and commitment (e.g., Ridge & Feeney, 1998), and lack of trust (e.g., Mikulincer, 1998). Moreover, more avoidant people are more likely to engage in sexual activities with multiple, relatively nonintimate, uncommitted sexual partners (e.g., Brennan & Shaver, 1995; Schachner & Shaver, 2002). Hence, we expected avoidance to be negatively associated with love for one's partner (Hypothesis 3).

Although people high on attachment anxiety seek intense closeness and intimacy, their relationships are often highly conflictual. Both anxiety and avoidance have been empirically linked to relationship dissatisfaction and dissolution (e.g., Davila, Karney, & Bradbury, 1999; Davis & Follette, 2000b; Feeney, 2002). Hence, we expected both anxiety and avoidance to be associated with relationship dissatisfaction; such negative feelings were in turn expected to be associated with inhibited sexual communication (Hypothesis 4).

Sexual anxiety. Finally, anxiety or discomfort regarding sexual behavior or performance may inhibit sexual communication. Attachment insecurity is associated with worry and negative expectations about relationship issues, and avoidance is associated with general discomfort with closeness and intimacy. To the extent that these feelings and expectations generalize to sexual interactions, insecurity should be associated with anxiety regarding sex and sexual performance (Hypothesis 5). Expressing one's sexual needs and desires may increase anxiety as well—particularly desires that reflect poorly on one's sexual prowess or desirability, such as problems with achieving arousal or orgasm

(and the need for extensive stimulation), or desires for effortful, unusual, or deviant sexual activities. Enhanced anxiety could then further inhibit sexual communication and interfere with performance and enjoyment. There is some evidence to suggest that both anxious and avoidant people feel anxious or uncomfortable regarding intimate touch and sexual behaviors (e.g., Brennan, Clark, et al., 1998; Brennan, Wu, & Love, 1998). Hence, we expected both attachment anxiety and avoidance to be associated with sexual anxiety, and sexual anxiety to be related to inhibited expression of sexual needs and lower sexual satisfaction (Hypothesis 6).

Differential pathways to three forms of sexual satisfaction

Physical satisfaction and satisfaction with control. Satisfaction of one's needs is likely to depend on successful communication of those needs to others, as well as successful negotiation and resolution of conflicts surrounding them. Hence, we expected that inhibited sexual communication would be negatively related to sexual satisfaction, including strictly physical satisfaction and also the sense of control over how, when, and whether to have sex. We further expected that the relationship of attachment insecurity to these forms of satisfaction would be at least partially mediated by inhibited sexual communication (Hypothesis 7).

Emotional satisfaction. The sense of emotional satisfaction from sex is likely to be influenced somewhat differently than physical satisfaction or satisfaction with control. First, sexual anxieties and insecurities, as well as feelings of love for one's partner and satisfaction with the relationship are likely to influence emotional satisfaction directly. In addition, however, emotional satisfaction is likely to be influenced by perceptions of how one's partner feels about oneself. Earlier we proposed that attachment-anxious people would be particularly likely to interpret sexual activities in terms of implications for relationship status, and indeed previous research has established that anxiety is positively

related to seeking reassurance of a partner’s love through sex (Davis et al., 2004). Since anxious people are also prone to exaggerate relationship threats (Mikulincer & Shaver, 2003), we expected that they would also find their partners’ sexual behaviors less emotionally reassuring and therefore less satisfying. For these reasons, we expected that attachment anxiety would be negatively associated with emotional satisfaction with sex and that this association would be at least partially mediated through feelings for a partner, sexual anxiety, and perception of sexual activity as a barometer of relationship status (Hypothesis 8).

We further expected that attachment avoidance would also be negatively related to emotional satisfaction, but for somewhat different reasons. Avoidant individuals are characteristically uninterested in intimacy and emotional closeness, and avoidance is negatively related to pursuing these goals through sex (Davis et al., 2004). Also, as noted earlier, avoidance is related to relationship dissatisfaction and is expected to be related to sexual anxiety. Therefore, we expected the association between avoidance and emotional dissatisfaction

with sex to be mediated through feelings toward relationship partners and sexual anxiety (Hypothesis 9).

Hypotheses in the form of a model

The nine hypotheses proposed in previous sections are summarized schematically in Figure 1. Attachment anxiety and avoidance are expected to relate to particular mediators of the links with inhibited sexual communication, which is then expected to reduce physical satisfaction and satisfaction with control of sexual aspects of relationships. We also expected direct, rather than mediated, pathways to emotional satisfaction.

Method

Participants

Participants were selected from a larger Internet survey about “sex in relationships” based on ever having been involved in a relationship that included regular sexual intercourse. A total of 1,989 participants met this criterion, including 724 men, 1,221 women, and 44 with

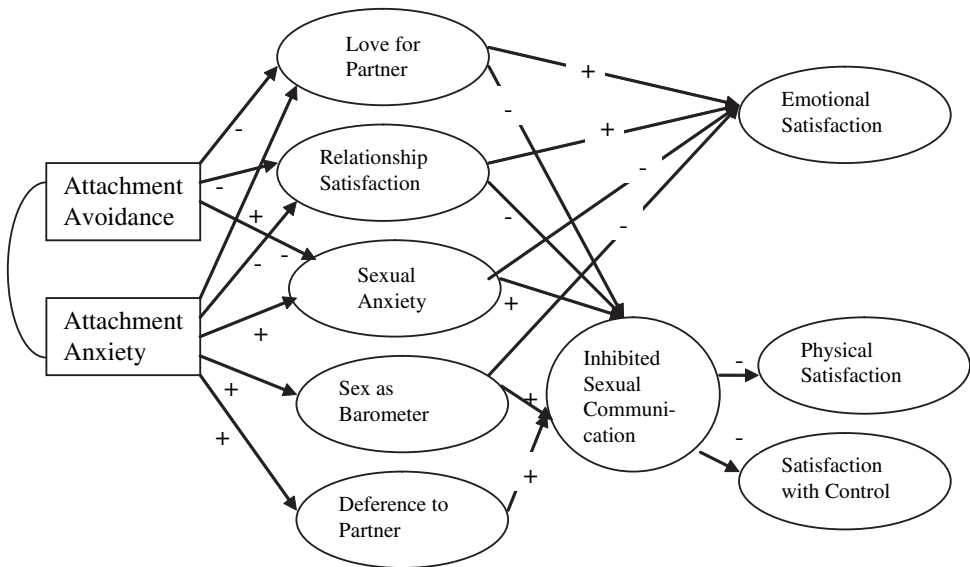


Figure 1. Hypothesized model linking anxious and avoidant attachment with sexual dissatisfaction through a set of proposed mediators.

sex unspecified. The beginning of the survey questionnaire told potential participants what kinds of questions would be asked. No rewards were offered for participating, and no restrictions were placed on participating. At the time of the study, 1,006 of the participants were involved in a sexual relationship and 983 were not. The ones who were currently involved in a relationship were asked to answer subsequent questions with respect to that relationship; the others were asked to report on their "sexual relationships in general." The sample was 78.4% Caucasian, 6.6% African American, 4.7% Hispanic, 1.1% American Indian, 3.7% Asian, and 5.1% "other," with 0.3% unspecified. Given a three-category question about sexual orientation, 87.6% called themselves heterosexual, 3.3% homosexual, and 8.3% bisexual, with 0.9% unspecified. Age ranged from 15 to 75, with a mean of 25.46. (We included participants who were under 18 because their responses were completely anonymous and they said they had been involved in a sexual relationship.) The majority were 30 or younger (79.8%), with 92.5% 40 or younger, and 98.7% 50 or younger.

Procedure

The survey was posted on the Internet with the title "Dating Survey: Sex in Our Relationships." This title attracted unmarried people both with and without current long-term partners. Links to the online survey were located in three different subcategories of the Yahoo search engine. The Internet site was described in all locations as follows: "Dating Survey—participate in the first study of Internet singles." The search categories with links to the survey were as follows: Dating (under the parent category "Society and Culture/Relationships"), Tests and Experiments (under the parent category "Psychology/Research"), and Surveys (also under "Society and Culture/Relationships"). The survey was programmed such that IP addresses were read, and surveys submitted more than once from the same address were automatically rejected (a conservative strategy because in some cases different people might have legitimately answered from the same computer).

The survey

The survey was introduced as a study of changes in sexual behavior across the life span. Instructions included assurances that responses would be completely anonymous once transmitted and the warning that responses were not secure until transmitted. To ensure that participants responded anonymously and without social influence, the first question asked, "Are you alone at your computer?" Data from those who responded "no" were deleted.

Measurement of attachment style. Attachment anxiety and avoidance were measured with representative 10-item subsets of the two 18-item scales in the Experiences in Close Relationships measure (Brennan, Clark, & Shaver, 1998). Respondents answered the questions on 9-point scales ranging from *not at all true of me* to *extremely true of me*. Alphas for the shortened scales were quite acceptable, .90 and .86. The mean and standard deviation for the anxiety scale were 5.35 and 1.83, and for the avoidance scale, 3.86 and 1.60.

Neuroticism. Because many contemporary personality researchers require differentiation of theory-specific individual differences, such as attachment anxiety, from the theory-neutral "Big Five" trait factors, we included the NEO-PI Neuroticism Scale (Costa & McCrae, 1985), which exhibited good internal consistency ($\alpha = .85$, $M = 2.87$ on a 1–5 scale, $SD = .72$). It is known to be significantly related to attachment anxiety (e.g., Nofhle & Shaver, 2006).

Inhibition of need expression ($\alpha = .89$, $M = 3.88$, $SD = 1.38$) was measured with 18 items written expressly for the present study. They were answered on 9-point scales ranging from *not at all true of me* to *extremely true of me*. Items included, "Generally, I tend to be inhibited about talking about sex," "If I feel something needs to be changed about our sex life, I usually try to talk to my partner about it and try to improve things" (reverse scored), and "If we're having problems with sex, I tend to let them build up for a long time before I say anything."

Other proposed mediators were also assessed with items written for this study, answered on the same 9-point scale. *Deference to partner* was measured with 10 items ($\alpha = .78$, $M = 5.03$, $SD = 1.49$). Sample items include, “Generally, I feel that my partner’s satisfaction with our sex life is more important than my own,” “I tend to give in to my partner’s sexual desires and preferences,” and “I feel perfectly comfortable with refusing to have sex if I’m not in the mood” (reverse scored). *Sex as a barometer of relationship status* was measured with seven items ($\alpha = .84$, $M = 3.87$, $SD = 1.83$), including “When my partner doesn’t want to have sex, it makes me worry about whether (s)he still loves me” and “It hurts my feelings if my partner doesn’t want to have sex when I ask him/her to.” *Sexual anxiety* was measured with five items ($\alpha = .81$, $M = 5.47$, $SD = 2.18$): “I would like to have less anxiety about sex” and “I always worry about how I’m performing when I have sex.”

Relationship satisfaction. Participants in a current sexual relationship (44% of the sample) rated overall satisfaction with their relationships ($M = 6.38$, $SD = 2.24$), and how much they were “in love” with their partners (*love for partner*) ($M = 6.48$, $SD = 2.61$). (The two variables correlated $r = .60$.)

Sexual satisfaction. Sexual satisfaction was assessed in terms of three separate constructs: physical satisfaction and emotional satisfaction (which have been assessed in many previous studies of sexuality; e.g., Laumann, Gagnon, Michael, & Michaels, 2000), and satisfaction with control of sexual aspects of the relationship (which might be affected by inhibited sexual communication). These seemed likely to be important but somewhat distinct aspects or components of overall sexual satisfaction, each of which might be affected by attachment insecurities. *Physical satisfaction* was assessed with 10 items ($\alpha = .85$, $M = 6.02$, $SD = 1.55$), including ratings of how satisfied participants were with such things as “the quality of sex in your relationship” and “the sexual skills of your partner,” and ratings of the extent to which each of six statements was true of them,

including “I am usually able to satisfy my sexual needs in my relationship” and “I would like to be able to get more physical satisfaction out of sex” (reverse scored). *Emotional satisfaction* was assessed with four items ($\alpha = .84$, $M = 3.77$, $SD = 2.15$), including “I would like to be able to get more emotional satisfaction out of sex” and “I would like my partners to be more affectionate.” *Satisfaction with control* of one’s sex life was assessed with six items ($\alpha = .75$, $M = 5.45$, $SD = 1.52$), including “satisfied with the amount of control I have over when and how we have sex” and “I would like to have more choice about when and how to have sex” (reverse scored).

Results

Table 1 reports the zero-order correlations for the two main subsets of the sample, those currently involved in a relationship and those who were not (but who had prior experience in sexual relationships). We included both groups because it was unclear at the outset whether to expect consistent results between current relationships and memories of past relationships (many of which presumably failed) or to expect different results. Since our main concern is the relations between fairly stable attachment insecurities and recurring issues in sexual relationships, it is worthwhile to consider both groups. Results for participants not involved in a relationship (who were referring to their relationship experiences in general) are shown above the diagonal, and those for respondents reporting on a current sexual relationship are shown below the diagonal. As expected, the two attachment insecurity dimensions were only minimally related ($r = .09$ and $.03$ for both groups). Neuroticism was strongly correlated with attachment anxiety ($r = .57$ and $.56$) and significantly but less strongly correlated with avoidance ($r = .17$ and $.19$).

The zero-order correlations were consistent with all correlational statements in the nine hypotheses formulated (and numbered) in the introduction and with the preconditions (Baron & Kenny, 1986) for the mediational parts of those hypotheses. First, inhibited communication was associated with all three forms of

Table 1. Zero-order correlations between attachment, inhibition, deference, barometer, sexual anxiety, and satisfaction scales

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Anxiety	1.00	.03	.56	.28	.35	.47	.45			-.06 ^a	-.40	-.23	.06 ^a
2. Avoidance	.09 ^a	1.00	.19	.36	-.05	.09	.15			-.29	.05	-.19	.16
3. Neuroticism	.57	.17	1.00	.31	.21	.30	.34			-.18	-.21	-.20	.10
4. Inhibition	.27	.40	.31	1.00	.30	.38	.43			-.43	-.26	-.40	.10
5. Deference	.31	.02	.18	.29	1.00	.50	.34			.09	-.25	-.24	-.32
6. Barometer	.56	.19	.33	.34	.44	1.00	.43			-.07	-.35	-.36	-.07 ^a
7. Sex anxiety	.47	.20	.42	.52	.33	.44	1.00			-.20	-.55	-.36	-.07 ^a
8. Relationship satisfaction	-.16	-.33	-.14	-.25	-.03	-.25	-.13	1.00					
9. Love for partner	.07 ^a	-.39	.03	-.21	.04	-.08	-.07 ^a	.60	1.00				
10. Physical satisfaction	-.06	-.30	-.18	-.53	.05	-.14	-.32	.37	.36	1.00	.28	.43	-.22
11. Emotional satisfaction	-.42	-.22	-.27	-.38	-.19	-.43	-.53	.34	.18	.37	1.00	.31	-.09 ^a
12. Satisfaction with control	-.21	-.18	-.17	-.40	-.26	-.42	-.28	.36	.21	.41	.38	1.00	.16
13. Sex	.09	.10	.17	.06 ^a	-.31	-.02	.01	.00	-.04	-.17	-.06 ^a	.15	1.00

Note. Italicized coefficients are not significant. All other correlations are significant at the $p < .01$, except those with a superscripted a, which are significant at the .05 level. Correlations above the diagonal include participants *not* in a relationship, $ns = 643-952$. Correlations below the diagonal include participants in a relationship, $ns = 771-974$.

sexual satisfaction for both groups (r_s ranged from $-.53$ to $-.26$). The attachment insecurity measures were related to the ultimate outcome, sexual satisfaction, with two exceptions. Attachment anxiety was not significantly related to physical satisfaction for those in relationships, and avoidance was not related to emotional satisfaction for those not in relationships. Attachment anxiety was most strongly related to emotional satisfaction ($r_s = -.42$ and $-.40$), less so to satisfaction with control ($r_s = -.21$ and $-.23$), and much less so to physical satisfaction ($r_s = -.06$ for both groups). Avoidance was most strongly related to physical satisfaction ($r_s = -.30$ and $-.29$), and somewhat less to emotional satisfaction ($r_s = -.22$ and $.05$, for those in relationships vs. those not in relationships) and satisfaction with control ($r_s = -.18$ and $-.19$). Finally, neuroticism (a potential confound) was moderately related to all three ($r_s = -.19$ to $-.27$) but, as expected, although the correlations between neuroticism and the other variables were similar in direction to the correlations with one or both attachment variables, regression analyses (available from the first author) indicated, as in previous studies (summarized by Nofhle & Shaver, 2006), that neuroticism did not account for the associations between attachment and other variables.

Attachment anxiety and avoidance were also related to inhibited communication and its proposed mediators. Attachment anxiety was significantly associated with inhibited communication and four of the five proposed mediators (all except love for partner) for both groups of respondents (those in and those not in a current relationship). Avoidance was significantly associated with inhibited communication and four of the proposed mediators in both groups (all except deference to partner, which was not expected to be related to avoidance). In turn, with the exception of the association between deference and physical satisfaction, the remaining proposed mediators were significantly related to inhibited communication and to all three forms of sexual satisfaction in both groups of respondents.

Biological sex (male, female) was significantly associated with several variables. In general, women were higher on neuroticism

and avoidance than men, lower in deference to partner than men, and less physically satisfied with sex than men but more satisfied with control.

Overall, the zero-order correlations were compatible with the model in Figure 1 and quite similar for people in and not in a sexual relationship at the time of the study. To further test the overall model, we used structural equation modeling (SEM) for each of the major groups of participants, followed by Sobel tests of mediation for all paths supported by the SEM analyses.

Structural equation models

Summed parcels of items were formed for the nine latent variables that had multiple items (see Kishton & Widaman, 1994, and Little, Cunningham, Shahar, & Widaman, 2002, for discussions of the parceling procedure). Items within a scale were randomly assigned to parcels so that all were assigned to one or another of the parcels. In two cases, love for partner and relationship satisfaction, there were only single indicators of a construct. There were three parcels each for attachment avoidance, attachment anxiety, deference to partner, sex as a barometer, sexual anxiety, physical satisfaction, and inhibited sexual communication; there were two each for emotional satisfaction and satisfaction with control. SEM to test the a priori model in Figure 1 was performed with the Mplus program (Muthén & Muthén, 2003), and models were fit to covariances among manifest variables.

Because two of the proposed mediators, love for partner and relationship satisfaction, made sense only for people currently involved in a relationship, the SEM analyses were conducted separately for people currently involved ($n = 993$; see Figure 2) and those not currently involved in a relationship ($n = 952$; see Figure 3). (The n 's are slightly different from the ones provided in the Method section because of missing data on some variables.) SEM analyses were supplemented with mediational analyses and explorations of sex differences. The two models shown in Figures 2 and 3 were not compared statistically because they contained somewhat

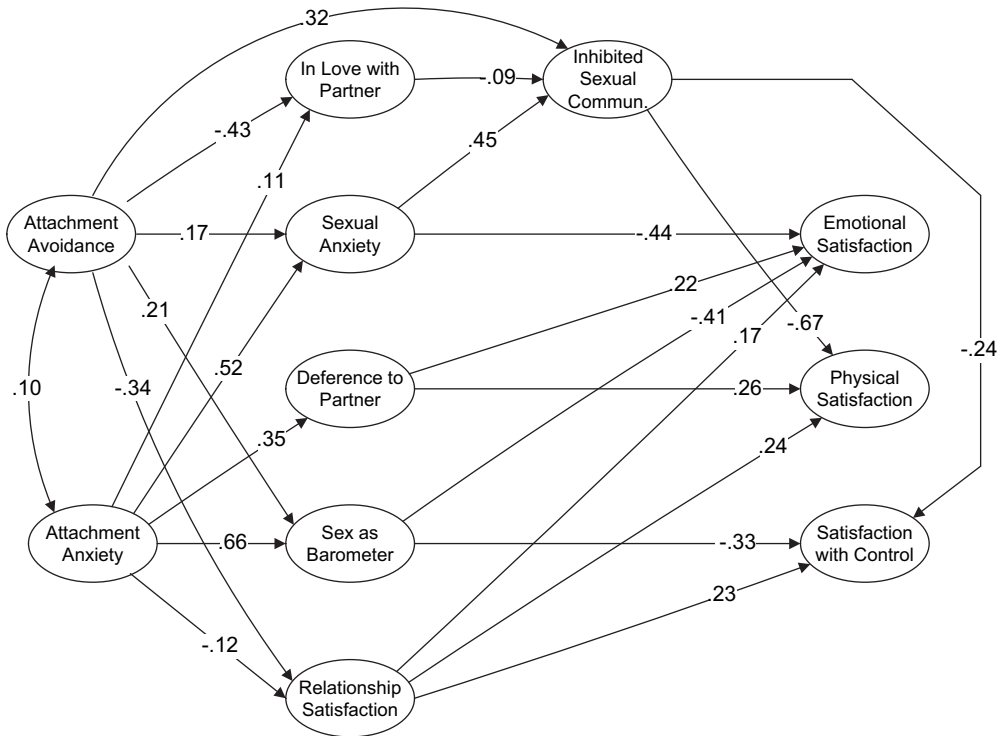


Figure 2. Standardized path coefficients between latent variables for the best fitting model based on data for respondents who were involved in a relationship ($n = 993$). (Note: All path coefficients were statistically significant, $p < .01$.)

different variables, but as shown in the figures and discussed in the text, the two subsamples produced similar results for the variables included in both models.

Initial SEM analyses. We first fit a model containing only the paths shown in Figure 1. This model was then compared with a modified model to see which best fit the covariance structure of the data as indicated by the standard χ^2 index of fit, the comparative fit index (CFI; Bentler, 1990), the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and the root mean square error of approximation (RMSEA; Browne & Cudeck, 1993).

In SEM, a significant χ^2 indicates misfit of the model to the data, but when sample size is large (as in the present case), the χ^2 index can be too restrictive. For both the CFI and TLI, fit index values above .90 indicate adequate fit

of a model to data, although values above .93 are desirable. For the RMSEA, lower values indicate better fit; values of .05 or lower indicate close fit of a model to data, and the confidence interval (CI) for the RMSEA should either fall below .05 or include .05 to indicate a good fit.

The first model, containing only predicted paths, yielded a significant χ^2 value ($\chi^2 = 1494.33$, $df = 265$, $p < .001$), a CFI of .90, a TLI of .88, and an RMSEA of .068, with a CI of .065–.072, which did not include .05. These indicators implied that the model should be adjusted. Guided by modification indexes, we created the model shown in Figure 2, which still yielded a significant χ^2 ($\chi^2 = 983.33$, $df = 256$, $p < .001$) but had a CFI of .94, a TLI of .92, and an RMSEA of .053 and associated CI of .050–.057, indicating an adequate fit to the data. Similar

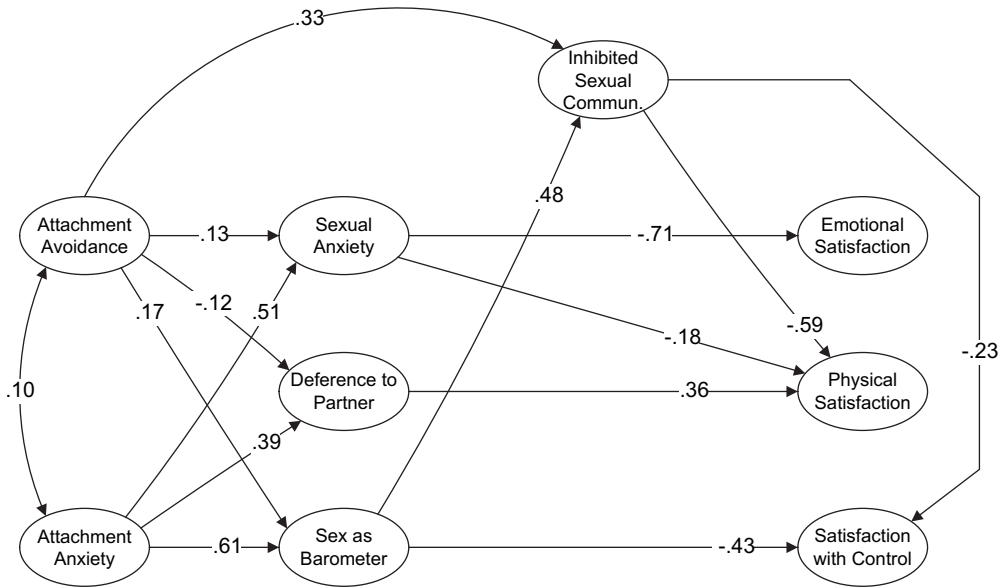


Figure 3. Standardized path coefficients between latent variables for the best fitting model based on data for respondents who were not involved in a relationship ($n = 955$). (Note: All path coefficients were statistically significant, $p < .01$.)

analyses were conducted for those not in a relationship.¹

Figures 2 and 3 show the significant path coefficients for the final models for those in and those not in a relationship. The significant path coefficients differed from zero at $p < .01$.

Analyses of direct effects

Direct predictors of sexual satisfaction.

We had hypothesized that two sexual outcome variables—physical and control satisfaction—would be affected by a single latent variable, inhibited sexual communication, but that emotional satisfaction would be influenced by several variables, including attachment anxiety,

sexual anxiety, sex as a barometer, and attitudes toward one's partner. Indeed, inhibited sexual communication was significantly associated with physical satisfaction ($\beta s = .67$ and $.59$) and satisfaction with control ($\beta s = -.24$ and $-.23$) for those in and not in a relationship, respectively. Unexpectedly, physical satisfaction was also directly influenced by deference to partner ($\beta s = .26$ and $.36$), sexual anxiety (for those not in a relationship; $\beta = -.18$), and relationship satisfaction (for those in a relationship; $\beta = .24$), and satisfaction with control was influenced by relationship satisfaction ($\beta = .23$) for those in a relationship and by sex as a barometer for both groups ($\beta s = -.33$ and $-.43$).

Also as predicted, emotional satisfaction was influenced by sexual anxiety ($\beta s = -.44$ and $-.71$) and by attachment anxiety through sexual anxiety (see *Mediation analyses*) for both samples, and by sex as a barometer ($\beta = -.41$) and relationship satisfaction ($\beta = .17$) for those in a relationship. Unexpectedly, emotional satisfaction was not influenced by love for partner but was influenced by deference to partner ($\beta = .22$) for those in a relationship. Despite a significant zero-order relationship,

1. The details of the analyses for those not in a relationship were as follows. The first model, the one containing all initially predicted paths among the latent variables for this subsample, yielded a significant χ^2 value ($\chi^2 = 1229.06$, $df = 229$, $p < .001$), a CFI of .90, a TLI of .88, and an RMSEA of .068 (CI: .064–.071), which did not include .05. Guided by modification indexes, we created the model shown in Figure 3, which still yielded a significant χ^2 ($\chi^2 = 768.05$, $df = 224$, $p < .001$) but had a CFI of .95, a TLI of .93, and an RMSEA of .050 and a CI of .047–.057, indicating an adequate fit.

the influence of inhibited sexual communication on emotional satisfaction was not significant for either sample once the effects of preceding variables in the model were estimated.

Inhibited sexual communication. Our second set of hypotheses concerned the five proposed direct predictors of inhibited sexual communication: deference to partner, sex as a barometer, sexual anxiety, love for partner, and relationship satisfaction. Of these five latent variables, only two proved to be significantly associated with inhibition for those in a relationship: love for partner ($\beta = -.09$) and sexual anxiety ($\beta = .45$). In contrast, for those not currently in a relationship, only sex as a barometer was significant ($\beta = .48$). Also, although we expected the effects of attachment to be mediated through the above five variables, attachment avoidance was directly related to inhibition for both samples ($\beta = -.32$ and $-.33$).²

Effects of attachment insecurities on proposed mediators of inhibition. Our third set of hypotheses concerned the associations between attachment insecurities and deference, sex as a barometer, sexual anxiety, love for partner, and relationship satisfaction. First, we expected attachment anxiety to be negatively associated with relationship satisfaction and positively associated with all other variables, and indeed, it had small but significant links with love for partner ($\beta = .11$) and relationship satisfaction ($\beta = -.12$) for participants who were in a relationship and moderate to large effects on the remaining three latent variables: sexual anxiety ($\beta = .52$ and $.51$), deference to partner ($\beta = .35$ and $.39$), and sex as a barometer ($\beta = .66$ and $.61$).

We expected that avoidance would be negatively associated with love for partner and

relationship satisfaction, positively related to sexual anxiety, and unrelated to sex as a barometer and deference to partner. As expected, there were moderate to large influences on love for partner ($\beta = -.43$) and relationship satisfaction ($\beta = -.34$) for those in a relationship, as well as a small effect on sexual anxiety ($\beta = .17$ and $.13$) for both samples. Unexpectedly, for both samples, there was a moderate association with sex as a barometer ($\beta = .21$ and $.17$) and the previously noted but unexpected direct and moderate-sized path to inhibited sexual communication ($\beta = .32$ and $.33$). Finally, for those not in a relationship, there was an unexpected negative link between avoidance and deference to partner ($\beta = -.12$).

Mediational analyses

All associations shown in Figures 2 and 3 that appear to involve mediation, according to the definition proposed by Baron and Kenny (1986), were subjected to Sobel (1982) mediation tests, and all were significant. (The details are available from the first author.)

Sex differences. For respondents currently involved in a relationship, we performed two-group SEMs, with the two groups consisting of men ($n = 302$) and women ($n = 691$). The details of these analyses are provided in a footnote.³ The only sex differences occurred with respect to influences on inhibited sexual

2. Attachment anxiety was not significantly related to physical satisfaction at the zero-order level, but nevertheless there were significant mediated relationships between anxiety and physical satisfaction. This may occur under conditions where anxiety is related in opposite directions to variables directly related to the mediated outcome (e.g., MacKinnon, Krull, & Lockwood, 2000). For example, anxiety is positively related to deference to partner but negatively related to relationship satisfaction—both of which are positively related to physical satisfaction.

3. We fit the model shown in Figure 2 separately to the men's and women's data but constrained factor loadings to be invariant across groups so that path coefficients could be compared. Although the χ^2 index of fit was significant, $\chi^2(549) = 1418.62, p < .001$, the initial model fit the data fairly well, with CFI and TLI of .93 and .92, respectively, and RMSEA of .056 (CI: .053–.060). We then imposed invariance constraints across the two samples for the regression weights among latent variables, and the resulting "constrained regression weight" model had very similar levels of fit, with $\chi^2(574) = 1486.19, p < .001$, and virtually unchanged indexes of practical fit, CFI and TLI of .93 and .92, respectively, and RMSEA of .057 (CI: .053–.060). Given the greater parsimony of the latter model, it was deemed the more acceptable. In the initial model that had separate regression weight estimates for men and women, the regression weights for virtually all paths were similar across groups, hence the lack of notable change in fit when invariance constraints across groups on regression weights were imposed.

communication, where influences for men were consistently weaker than those for women. We found the following effects on inhibited sexual communication: (a) sexual anxiety ($\beta = .33$ for men, $\beta = .60$ for women), (b) deference to partner ($\beta = -.01$ for men, $\beta = .46$ for women), and (c) sex as a barometer ($\beta = .16$ for men, $\beta = -.44$ for women). Although the overall test of sex differences in regression weights indicated that differences between men and women were not large, we mention these few potential sex differences as a starting point for future studies.

For participants who were *not* currently involved in a sexual relationship, we conducted the same kind of two-group modeling described above. The details are described in a footnote.⁴ The only sex differences again occurred for influences on inhibited sexual communication. We found the following different effects on inhibited sexual communication: (a) sexual anxiety ($\beta = -.08$ for men, $\beta = .28$ for women), (b) deference to partner ($\beta = -.28$ for men, $\beta = .26$ for women), and (c) sex as a barometer ($\beta = .72$ for men, $\beta = .10$, for women), although the overall regression weights for sex were not large for these variables.

Discussion

This study adds to the growing body of evidence relating attachment style to sexual

motives, feelings, and behaviors. In particular, the results indicate that strategies of affect regulation and need satisfaction associated with attachment style are also manifested in efforts to negotiate and satisfy sexual needs. Further, the results indicate that insecure individuals' sexual strategies, motives, and feelings are associated with dissatisfying sexual outcomes, just as they have been shown in previous studies to contribute to other dissatisfying relationship outcomes. Here, we have provided evidence concerning the particular attachment-related strategies, motives, and feelings that contribute to sexual dissatisfaction.

Our primary hypothesis was that both attachment anxiety and avoidance would be associated with one or more of five variables (sexual anxiety, perception of sex as a barometer of relationship status, deference to partner's needs, love for partner, and relationship satisfaction), which in turn would be associated with inhibited sexual communication, which in turn would be associated with two forms of sexual satisfaction (physical satisfaction and satisfaction with control). Emotional satisfaction was expected to be more directly influenced by sexual anxiety, sex as a barometer, and feelings for one's partner. Indeed, at the zero-order level, all correlations between variables were significant for people currently in and those not currently in a relationship. As expected, avoidance was not related to deference to a partner's needs. Only the failure to find an association between attachment anxiety and physical dissatisfaction was unexpected. This is understandable, however, in light of the links between attachment anxiety and more direct predictors of satisfaction (see below). In other words, attachment style was related to all the hypothesized strategies, feelings, and motives expected to affect satisfaction, and to aspects of sexual satisfaction itself. But the details of the mediated relationships were not as simple as expected.

Predictors of sexual satisfaction

At the zero-order level, avoidance was most strongly (negatively) associated with the physical aspect of sexual satisfaction and was

4. There were 422 men and 530 women. We fit the model shown in Figure 3 separately to the men's and women's data but constrained factor loadings to be invariant across groups so that comparisons of path coefficients could be made. Although the χ^2 index of fit was significant, $\chi^2(483) = 1263.14, p < .001$, the initial model fit the data fairly well, with CFI and TLI of .92 and .91, respectively, and RMSEA of .058 (CI: .054-.062). We imposed invariance constraints across the two samples for the regression weights among latent variables, and the resulting constrained regression weight model had very similar levels of fit, with $\chi^2(499) = 1303.56, p < .001$, and virtually unchanged indexes of practical fit, CFI and TLI of .92 and .91, respectively, and RMSEA of .058 (CI: .054-.062). Given the greater parsimony of the latter model, it was deemed more acceptable. The initial model allowed separate regression weight estimates for men and women, and the regression weights for virtually all paths were similar across groups, resulting in a lack of notable change in fit when invariance constraints across groups on regression weights were imposed. The only notable sex differences are discussed briefly in the text.

moderately related with emotional satisfaction (for those in a relationship) and satisfaction with control. In contrast, attachment anxiety had its strongest negative association with emotional aspects of sexual satisfaction, a moderate association with satisfaction with control, and only an insignificant association with physical satisfaction. Although our hypotheses primarily addressed the mediating role of inhibited sexual communication in influencing physical satisfaction and satisfaction with control, the results indicated that a more complex model was required.

When subjected to SEM modeling, inhibited communication strongly predicted dissatisfaction with the physical aspect of sex and was moderately associated with satisfaction with control but unrelated to emotional satisfaction. All three forms of satisfaction were also directly predicted by other variables. For those in a relationship, most prominent was relationship satisfaction, for which there were moderate direct paths to all three forms of sexual satisfaction. In addition, both attachment anxiety and avoidance had indirect links to all three aspects of sexual satisfaction, through their effects on relationship satisfaction. Hence, consistent with the literature (e.g., Bradbury & Karney, 1993; Sprecher & Cate, 2004), relationship satisfaction is an important contributor to sexual satisfaction. In addition, each form of satisfaction was both directly and indirectly predicted by one or more other variables.

Physical satisfaction. The strongest direct predictor of dissatisfaction with the physical aspect of sex was inhibited communication, followed by deference to partner, relationship satisfaction (for those in a relationship), and sexual anxiety (for those not in a relationship). Avoidance affected physical satisfaction indirectly, through inhibition and relationship satisfaction (for those in a relationship), and through inhibition, deference to partner, and sexual anxiety (for those not in a relationship). In contrast, anxiety exerted indirect effects only through relationship satisfaction (for those in a relationship) and deference to partner. At the zero-order level, attachment anxiety had only very small associations with physical satisfaction ($-.06$ for both samples).

The small negative association of anxiety with physical satisfaction may be the result of two mediators (relationship satisfaction and deference) being related to physical satisfaction in opposite directions. For those not in a relationship, the association was mediated by deference and sexual anxiety, again mediators with opposite influences on physical satisfaction.

Satisfaction with control. As predicted, satisfaction with sexual control was directly predicted by inhibited communication. But it was also directly negatively related to sex as a barometer (the strongest negative predictor for both samples), and directly and positively linked with relationship satisfaction. The zero-order correlations between attachment dimensions and satisfaction with control were mediated through inhibited communication and sex as a barometer (for avoidance), and through relationship satisfaction and sex as a barometer but not inhibition (for anxiety). The fact that sex as a barometer was a direct predictor was unexpected, requiring further discussion (see below).

Emotional satisfaction. We hypothesized that attachment insecurities would be negatively associated with emotional satisfaction because attachment-anxious people are characteristically unable to achieve desired levels of emotional closeness and intimacy, and avoidant people characteristically prefer less intimate, less affectionate forms of relating. Further, both forms of attachment insecurity were expected to predict sexual anxiety, which in turn was expected to undermine emotional satisfaction. Indeed, there were negative zero-order correlations between both forms of attachment insecurity and emotional satisfaction with sex. For anxiety, this appeared to be mediated through relationship satisfaction, deference to partner, and sex as a barometer (for those in a relationship) and sexual anxiety (for both groups), which provided the strongest direct negative path to emotional satisfaction with sex. Avoidance indirectly influenced emotional satisfaction through sex as a barometer (for those in a relationship) and sexual anxiety. In addition, emotional satisfaction was directly predicted by all first-level mediators except love for partner. Again, deference

to partner exerted a positive rather than the expected negative influence on the emotional aspect of sexual satisfaction.

Predictors of inhibited sexual communication

All five of the proposed mediators of the association between attachment insecurities and inhibited communication were, in fact, significantly associated with both forms of attachment insecurity and with inhibited sexual communication (at the zero-order level). For those in a relationship, however, three of the mediators—relationship satisfaction, sex as a barometer, and deference to partner—fell to insignificance in the multivariate SEM analyses. For those not in a relationship, barometer alone remained significant. Sexual anxiety was more strongly predictive of inhibited need expression among people reporting on a current relationship, suggesting that it might become increasingly important in a long-term relationship. Love for partner was also negatively associated with inhibition for those in a relationship. Interestingly, there was not a significant path from barometer to inhibition for those in a relationship, but there was a strong positive path for those not in a relationship. The lack of significance for those in a relationship was unexpected, but it may indicate that people who interpret sex as an indicator of relationship quality make an effort to bolster the sexual aspect of their relationships, thereby overcoming tendencies toward inhibited communication.

Anxiety-related pathways to inhibition. As predicted, attachment anxiety was related to inhibited communication (in zero-order correlations) and to all proposed paths to inhibition for both samples. Also as predicted, the link between anxiety and inhibition was fully mediated but only by a subset of the expected mediators. For those in a relationship, anxiety exerted indirect effects on inhibition through love for partner and sexual anxiety but not through sex as a barometer, relationship satisfaction, or deference to partner (none of which directly influenced inhibited communication). In contrast, for those not in a relationship, the

association was mediated entirely by sex as a barometer.

Avoidance-related pathways to inhibition. For those in a relationship, avoidant attachment was related to inhibited communication and all proposed mediators except for deference to partner. For those not in a relationship, there was also a small but significant negative association with deference. Unlike the effect of attachment anxiety, however, the association between avoidance and inhibited communication was not fully mediated: There was a direct path between avoidance and inhibition for both samples. For those in a relationship, this connection was partially mediated through love for partner and sexual anxiety only, and through barometer only for those not in a relationship. Positive feelings of love for partner and satisfaction with one's relationship are likely to encourage communication in all relationship domains, including the sexual domain. However, as has been found in previous studies (e.g., Davila et al., 1999; Davis & Follette, 2000b; Ridge & Feeney, 1998), avoidant attachment was strongly and negatively associated in the present study with both love for partner and relationship satisfaction, which in turn were related to inhibited communication. Overall, however, the primary pathway between avoidance and inhibition was direct rather than indirect. Future research is needed to identify additional mediators.

The importance of perception of sex as a barometer of relationship status

One of the most novel contributions of the present study is operationalizing and demonstrating the importance of regarding sex as a barometer of relationship status. Attachment anxiety was more strongly related to barometer than to any other variable in all analyses. This indicates, once again, that attachment-anxious individuals monitor their partners and their interactions with partners for signs of deficient or declining physical and emotional availability, closeness, and support (Mikulincer & Shaver, 2003; Simpson, Campbell, & Weisberg, 2006). This anxious monitoring has negative effects on many relationship outcomes (see Simpson

et al., 2006, for a recent review), including satisfaction. In the present study, using sex as a barometer was the strongest mediator of the connections between attachment anxiety and two forms of sexual satisfaction: emotional satisfaction and satisfaction with control of sexual interactions. We had expected this pathway for emotional satisfaction since attachment anxiety is associated with so much concern over the status of relationships and so much desire for emotional closeness, affection, and romance. Unexpectedly, barometer was also an important mediator for avoidance.

We did not predict the importance of barometer as a mediator of the associations between attachment insecurities and sexual control. However, if a person regards sexual relations as an important indicator of relationship status or quality, he or she might also be more concerned with influencing or controlling sexual interactions and hence be more frustrated when such control proved impossible. Support for this reasoning was provided by Davis (2006), who found that sex as a barometer predicted sexually coercive attitudes and behaviors, eliminating zero-order effects of attachment anxiety when entered into a regression equation. Davis (2006) further proposed that when a partner refuses sex, perceiving sex as a barometer of relationship status (and therefore perceiving refusal as a threat to the relationship) further activates the attachment system, which in turn increases sexual motivation (see Davis et al., 2004) and increases the potential for coercion. The perception of sex as a barometer of relationship status may account for a variety of sex-related feelings and behaviors associated with insecure attachment, such as engaging in unwanted sex (Davis, Follette, & Vernon, 2001; Impett & Peplau, 2002), sexual coercion (Davis, 2004, 2006), and risky sexual behaviors (Feeney & Noller, 2004).

Remaining issues

Some of the results for deference to partner were surprising. Because attachment anxiety had been associated in previous studies with a tendency to seek approval and worry about relationship conflicts (Mikulincer & Shaver, 2003), we expected attachment anxiety to

be associated with deference to a partner's wishes. We also thought that if a person gave very high priority to a partner's needs, this might make it more difficult to assert and satisfy his or her own needs. Unexpectedly, however, the effects of deference to partner on aspects of sexual satisfaction were not mediated by inhibited communication. Moreover, contrary to expectation, there was a strong *positive* direct path from deference to physical and emotional satisfaction and a small but positive zero-order correlation between deference and physical satisfaction (but a negative zero-order correlation with emotional satisfaction).

Although the effects of deference on satisfaction were not mediated as expected, deference was strongly associated with attachment as expected. Hence, it is worth mentioning that deference to partner may help to explain some commonly noted sex differences in attachment effects on sexuality. Several authors have noted that, for women, anxiety is associated with earlier first intercourse, greater numbers of sexual partners, infidelity (e.g., Bogaert & Sadava, 2002; Gangestad & Thornhill, 1997), and deviant sexual activities such as bondage (e.g., Hazan, Zeifman, & Middleton, 1994). In contrast, anxiously attached men report having less sex than secure or avoidant men (e.g., Feeney, Noller, & Patty, 1993). Similarly, Davis et al. (2001) found that whereas attachment anxiety was associated with both too much and too little sex among women, it was associated only with too little sex among men. Perhaps when women defer to male partners, they tend to have more sex and engage in more deviant activities, whereas when men defer to women they have less sex.

A second unexpected finding was that, particularly among people who were currently involved in a relationship, the links between sexual anxiety, deference to partner, and sex as a barometer, on the one hand, and inhibited communication, on the other, were much stronger for women than for men (although barometer was strongly related to inhibited communication among men not currently involved in a relationship). Further, men reported greater deference to their partners than did women. This may indicate that men perceive themselves as having to be more

considerate toward their sexual partners than they wish they had to be. These findings raise interesting questions for future research.

Finally, differences between those in relationships versus not in a relationship require comment. Overall, the results for the two samples were remarkably similar, suggesting that people who reported on previous, perhaps not very successful, relationships still exhibited the same dynamics as those who were currently involved. Zero-order correlations between attachment and all other variables were very similar across the two groups, with the single exception of the association between avoidance and emotional dissatisfaction (which was insignificant for those not in a relationship). Similarly, in the SEM analyses, the associations between attachment insecurities and both barometer and sexual anxiety were similar across the two samples (although avoidance was linked with deference only for those not in a relationship). But the differences were more pronounced for the mediated associations. Most prominent among the differences was the central role of sex as a barometer in predicting inhibited communication for those not in a relationship, compared with the absence of such a role for those in a relationship. Understanding this result will require additional research.

Limitations and conclusions

Although the results are consistent with hypothesized attachment-related pathways to inhibited sexual expression, we cannot establish causality with a cross-sectional design. Further, although we identified several likely pathways to inhibited communication, others may be important as well. We did not assess, for example, expectations regarding partners' likely reactions to expressing one's needs. Given that insecure attachment is born of negative or inconsistent responses to expression of needs, it would be worthwhile in future studies to include a measure of expected partner responses to sexual need expression. Some of our measures were very preliminary, especially the single-item measures of love for partner and relationship satisfaction. Those measures worked as expected, but it would

be worthwhile in future studies to use more complete and detailed measures of these constructs.

Attachment-related motives and strategies guide feelings and behaviors in sexual situations. Attachment theory provides a promising theoretical framework for sex research, a field that has generally lacked systematic theory. We hope our research will encourage other investigations of attachment processes in the sexual arena, hopefully using other sampling techniques that capture a wider age range, and other measures, including interview and diary methods that get closer to daily experiences and systematic observations of couple members' discussions of the sexual aspects of their relationships.

References

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: Assessed in the strange situation and at home*. Hillsdale, NJ: Erlbaum.
- Anders, S. L., & Tucker, J. S. (2000). Adult attachment style, interpersonal communication competence, and social support. *Personal Relationships, 7*, 379–389.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238–246.
- Birnbaum, G. E. (in press). Attachment orientations, sexual functioning, and relationship satisfaction in a community sample of women. *Journal of Social and Personal Relationships*.
- Birnbaum, G. E., Reis, H. T., Mikulincer, M., Gillath, O., & Orpaz, A. (in press). When sex is more than just sex: Attachment orientations, sexual experience, and relationship quality. *Journal of Personality and Social Psychology*.
- Bogaert, A., & Sadava, S. (2002). Adult attachment and sexual behavior. *Personal Relationships, 9*, 191–204.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). New York: Basic Books.
- Bradbury, T. N., & Karney, B. R. (1993). Longitudinal study of marital interaction and dysfunction: Review and analysis. *Clinical Psychology Review, 13*, 15–27.
- Bradford, S. A., Feeney, J. A., & Campbell, L. (2002). Links between attachment orientations and dispositional and diary-based measures of disclosure in dating couples: A study of actor and partner effects. *Personal Relationships, 9*, 491–506.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.),

- Attachment theory and close relationships* (pp. 46–76). New York: Guilford.
- Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin*, *21*, 267–283.
- Brennan, K. A., Wu, S., & Love, J. (1998). Adult romantic attachment and individual differences in attitudes toward physical contact in the context of adult romantic relationships. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 394–428). New York: Guilford.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.
- Cassidy, J., & Shaver, P. R. (Eds.). (1999). *Handbook of attachment: Theory, research, and clinical applications*. New York: Guilford.
- Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support-seeking and caregiving in adult romantic relationships. *Journal of Personality and Social Psychology*, *58*, 644–663.
- Costa, P. T., Jr., & McCrae, R. R. (1985). *The NEO Personality Inventory*. Odessa, FL: Psychological Assessment Resources.
- Creasey, G. (2002). Associations between working models of attachment and conflict management behavior in romantic couples. *Journal of Counseling Psychology*, *49*, 365–375.
- Creasey, G., & Hesson-McInnis, M. (2001). Affective responses, cognitive appraisals, and conflict tactics in late adolescent romantic relationships: Associations with attachment orientations. *Journal of Counseling Psychology*, *48*, 85–96.
- Cyranowski, J. M., & Andersen, B. L. (1998). Schemas, sexuality, and romantic attachment. *Journal of Personality and Social Psychology*, *74*, 1364–1379.
- Davila, J., Karney, B. R., & Bradbury, T. N. (1999). Attachment change processes in the early years of marriage. *Journal of Personality and Social Psychology*, *76*, 783–802.
- Davis, D. (2006). Attachment-related pathways to sexual coercion. In M. Mikulincer & G. Goodman (Eds.), *Dynamics of romantic love: Attachment, caregiving, and sex* (pp. 293–336). New York: Guilford.
- Davis, D., & Follette, W. C. (2000a, April). *Attachment style and emotional expression in close relationships*. Western Psychological Association, Portland, OR.
- Davis, D., & Follette, W. C. (2000b, April). *Attachment style, marital interaction: The four horsemen and their first cousins*. Western Psychological Association, Portland, OR.
- Davis, D., Follette, W. C., & Vernon, M. L. (2001, May). *Adult attachment style and the experience of unwanted sex*. Western Psychological Association, Maui, HI.
- Davis, D., Shaver, P. R., & Vernon, M. L. (2004). Attachment style and subjective motivations for sex. *Personality and Social Psychology Bulletin*, *30*, 1076–1090.
- Elizur, Y., & Mintzer, A. (2001). A framework for the formation of gay male identity: Processes associated with adult attachment style and support from family and friends. *Archives of Sexual Behavior*, *30*, 143–167.
- Feeney, J. A. (2002). Attachment, marital interaction, and relationship satisfaction: A diary study. *Personal Relationships*, *9*, 39–55.
- Feeney, J. A., & Noller, P. (2004). Attachment and sexuality in close relationships. In J. H. Harvey, A. Wenzel, & S. Sprecher (Eds.), *Handbook of sexuality in close relationships* (pp. 183–201). Mahwah, NJ: Erlbaum.
- Feeney, J. A., Noller, P., & Patty, J. (1993). Adolescents' interactions with the opposite sex: Influence of attachment style and gender. *Journal of Adolescence*, *16*, 169–186.
- Gangestad, S. W., & Thornhill, R. (1997). The evolutionary psychology of extrapair sex: The role of fluctuating asymmetry. *Evolution and Human Behavior*, *18*, 69–88.
- Gentzler, A. L., & Kerns, K. A. (2004). Associations between insecure attachment and sexual experiences. *Personal Relationships*, *11*, 249–265.
- Greenfield, S., & Thelen, M. (1997). Validation of the fear of intimacy scale with a lesbian and gay male population. *Journal of Personal and Social Relationships*, *14*, 707–716.
- Hazan, C., Zeifman, D., & Middleton, K. (1994, July). *Adult romantic attachment, affection, and sex*. Paper presented at the 7th International Conference on Personal Relationships, Groningen, The Netherlands.
- Impett, E. A., & Peplau, L. A. (2002). Why some women consent to unwanted sex with a dating partner: Insight from attachment theory. *Psychology of Women Quarterly*, *26*, 360–370.
- Kishton, J. M., & Widaman, K. F. (1994). Unidimensional versus domain representative parceling of questionnaire items: An empirical example. *Educational and Psychological Measurement*, *54*, 757–765.
- Laumann, E. O., Gagnon, J. H., Michael, R. T., & Michaels, S. (2000). *The social organization of sexuality: Sexual practices in the United States*. Chicago: University of Chicago Press.
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, *9*, 151–173.
- MacKinnon, D. P., Krull, J. L., & Lockwood, J. M. (2000). Equivalence of the mediation, confounding, and suppression effect. *Prevention Science*, *1*, 173–181.
- Mauder, R. G., Panzer, A., Viljuer, M., Owen, J., Human, S., & Hunter, J. J. (2006). Physicians' difficulty with emergency department patients is related to patients' attachment style. *Social Science and Medicine*, *63*, 552–562.
- Mikulincer, M. (1998). Attachment working models and the sense of trust: An exploration of interaction goals and affect regulation. *Journal of Personality and Social Psychology*, *74*, 1209–1224.
- Mikulincer, M., & Nachshon, O. (1991). Attachment styles and patterns of self-disclosure. *Journal of Personality and Social Psychology*, *61*, 213–331.
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 35, pp. 53–152). San Diego, CA: Academic Press.
- Mikulincer, M., & Shaver, P. R. (in press). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford.
- Mohr, J. J. (1999). Same-sex romantic attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 378–394). New York: Guilford.

- Mohr, J. J., & Fassinger, R. E. (2003). Self-acceptance and self-disclosure of sexual orientation in lesbian, gay, and bisexual adults: An attachment perspective. *Journal of Counseling Psychology, 50*, 482–495.
- Muthén, L. K., & Muthén, B. O. (2003). *Mplus user's guide* (3rd ed.). Los Angeles: Author.
- Nofle, E. E., & Shaver, P. R. (2006). Attachment dimensions and the big five personality traits: Associations and comparative ability to predict relationship quality. *Journal of Research in Personality, 40*, 179–208.
- Ognibene, T. C., & Collins, N. L. (1998). Adult attachment styles, perceived social support and coping strategies. *Journal of Social and Personal Relationships, 15*, 323–345.
- Pistole, M. C. (1993). Attachment relationships: Self-disclosure and trust. *Journal of Mental Health Counseling, 15*, 94–106.
- Ridge, S. R., & Feeney, J. A. (1998). Relationship history and relationship attitudes in gay males and lesbians: Attachment style and gender differences. *Australian and New Zealand Journal of Psychiatry, 32*, 848–859.
- Roberts, N., & Noller, P. (1998). The associations between adult attachment and couple violence. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 317–350). New York: Guilford.
- Schachner, D. A., & Shaver, P. R. (2002). Attachment style and human mate poaching. *New Review of Social Psychology, 1*, 122–129.
- Schachner, D. A., Shaver, P. R., & Mikulincer, M. (2005). Interpersonal sensitivity in the context of attachment relationships. *Journal of Nonverbal Behavior, 29*, 141–169.
- Shi, L. (2003). The association between adult attachment styles and conflict resolution in romantic relationships. *American Journal of Family Therapy, 31*, 143–157.
- Simpson, J. A., Campbell, L., & Weisberg, Y. J. (2006). Daily perceptions of conflict and support in romantic relationships: The ups and downs of anxiously attached individuals. In M. Mikulincer & G. Goodman (Eds.), *Dynamics of romantic love: Attachment, caregiving, and sex* (pp. 216–239). New York: Guilford.
- Sprecher, S., & Cate, R. M. (2004). Sexual satisfaction and sexual expression as predictors of relationship satisfaction and stability. In J. H. Harvey, A. Wenzel, & S. Sprecher (Eds.), *Handbook of sexuality in close relationships* (pp. 235–256). Mahwah, NJ: Erlbaum.
- Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhardt (Ed.), *Sociological methodology 1982* (pp. 290–312). San Francisco: Jossey-Bass.
- Thompson, R. A. (1999). Early attachment and later development. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 265–286). New York: Guilford.
- Tracy, J. L., Shaver, P. R., Albino, A. W., & Cooper, M. L. (2003). Attachment styles and adolescent sexuality. In P. Florsheim (Ed.), *Adolescent romance and sexual behavior: Theory, research, and practical implications* (pp. 137–159). Mahwah, NJ: Erlbaum.
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38*, 1–10.
- Vrij, A., Paterson, B., Nunkoosing, K., Soukara, S., & Oosterwegel, A. (2003). Perceived advantages and disadvantages of secrets disclosure. *Personality and Individual Differences, 35*, 593–602.
- Weinfield, N. S., Sroufe, L. A., Egeland, B., & Carlson, E. A. (1999). The nature of individual differences in infant-caregiver attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 68–111). New York: Guilford.