

BODY SATISFACTION AND COUPLE'S DAILY SEXUAL FUNCTIONING

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By

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The undersigned, appointed by the dean of the Graduate School,

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**BODY SATISFACTION AND COUPLE'S DAILY SEXUAL FUNCTIONING**

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A candidate for the degree of Master of Arts,

And hereby certify that, in their opinion, it is worthy of acceptance.

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I want to thank my parents, for their incessant support and encouragement. I love you so much and I am forever grateful to you for your love and support.

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Running head: BODY SATISFACTION AND SEXUAL FUNCTIONING

Body satisfaction and couple's daily sexual functioning

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Abstract

Body satisfaction has been shown to have an important effect on the nature and quality of people's sexual experiences. However, past research has focused almost exclusively on women, and indeed no study has examined the role of both partners' body satisfaction or the effects of individual's satisfaction with partner's body attractiveness on sexual functioning. Moreover, almost all past studies have relied on cross-sectional self-report data; few have examined the effects of body satisfaction on day-to-day sexual experiences. To address these shortcomings, the current study used data from two daily studies to investigate the impacts of both partners' body satisfaction and satisfaction with partner's body on daily sexual functioning. Results showed a complex picture of effects that were often dependent on multiple factors. Satisfaction with partner's body attractiveness was showed to be a stronger predictor of individual's own sexual functioning than satisfaction of one's own body. In contrast, partner's satisfaction with his or her own body had negative effect on individual's sexual quality. Furthermore, woman's sexual functioning was more likely to be impacted by partner's satisfaction with her body as expected. And finally, couples had more frequent intercourse when both partners were matched on perceived body attractiveness but only individual who was satisfied with one's own body and partner's body experienced the lowest level of negative mood during sex. Theoretical and methodological implications for future research are discussed.

### Body satisfaction and couple's daily sexual functioning

Body satisfaction, or body image satisfaction, a multidimensional concept that includes thoughts, feelings, and attitudes related to one's own body (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), has been widely studied in western societies. Low body satisfaction has been associated with numerous negative mental and physical health outcomes such as low self-esteem, reduced social effectiveness, depression and eating disorders (e.g., Donaghue, 2009; Polivy & Herman, 2002; Ricciardelli & McCabe, 2003), as well as negative interpersonal outcomes, such as low marital and sexual satisfaction (Friedman, Dixon, Brownell, Whisman, & Wilfley, 1999; Gillen, Lefkowitz, & Shearer, 2006; Meltzer, & McNulty, 2010; Weaver, & Byers, 2006). Body satisfaction is particularly important for understanding the nature and quality of people's sexual experiences. Indeed lower body satisfaction has been linked to low sexual esteem, sexual desire, sexual arousal, and sexual satisfaction (Gillen, Lefkowitz, & Shearer, 2006; Meltzer, & McNulty, 2010; Weaver, & Byers, 2006).

Despite the importance of this issue, past research on body satisfaction and sexual experience suffers from several important limitations. Most of the previous research has focused on women's body image and satisfaction, and relied on cross-sectional study designs. In addition, almost all of this research has examined body satisfaction and its impact on individuals, thus ignoring the interpersonal context in which sexual behavior typically occurs. To address these issues, the current research used data from two dyadic diary studies of sexually involved couples to examine the impact of both partners'

satisfaction with their own body along with their partner's body on the quality and frequency of sexual experience.

### **A Definitional Note**

The term body satisfaction or perceived body attractiveness are typically used to refer to perceptions and attitudes individuals hold about specific features of their body, including its size, weight and shape (Rogan, 1999), although the terms are sometimes used more broadly to refer to an individual's perception of his or her overall physical attractiveness (e.g., Cash, Teriault, & Annis, 2004; Forand, Gunthert, German & Wenzel, 2010; Gillen, Lefkowitz, & Shearer, 2006). Facial attractiveness is a related but distinct construct (Currie & Little, 2009), with correlations between measures of body attractiveness and facial attractiveness ranging from .30 to .33 (Thornhill & Grammer, 1999). And finally both body and facial attractiveness shape global ratings of physical attractiveness (for a review see Currie & Little, 2009). Thus, although our primary interest is in perceived body attractiveness or body satisfaction, the literature does not always draw clear distinctions between global attractiveness, facial attractiveness, and body attractiveness. For this reason, we draw on literature that uses a range of measures, including measures of global attractiveness, facial attractiveness, and body attractiveness for generating our hypotheses.

In addition, we note that perceived body attractiveness, body image, body satisfaction, body esteem as well as the opposing terms, body image concern and body disturbance (Cash & Pruzinsky, 2004) tend to be used interchangeably to refer to an individual's subjective feelings about or perceptions of one's body. For the sake of clarity,

we use the terms body satisfaction or satisfaction with body attractiveness constantly in the current study.

Finally, the present study focuses on subjective rather than objective measures of physical attractiveness. Although research shows that subjective self-ratings need not be consistent with objective measures (e.g., body mass index, BMI), past research using both objective and subjective measures typically shows that subjective measures are the more consistent and potent predictors of sexual outcomes beyond the effect of actual body shape (e.g., Weaver & Byers, 2006), thus supporting our focus on subjective measures of body attractiveness.

### **Body Satisfaction and Well Being**

Body satisfaction is significantly influenced by culture, especially in Western cultures where physical attractiveness is highly prized. In affluent Western societies, for example, the ideal body among women is slim, whereas the ideal for men is slim and moderately muscular (e.g., Grogan, 1999). People who conform to these body ideals are considered as physically attractive, and those seen as physically attractive are viewed as “good” in a variety of ways. This phenomenon, known as the physical attractiveness stereotype (Eagley, Ashmore, Makhijani, & Longo, 1991), has been documented in numerous studies (for a review, see Langlois, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000). For example, physically attractive people are viewed as more intelligent, more responsive, more exciting, more outgoing and socially skilled, happier, more successful, and so on (Langlois et al., 2000; see also Feingold, 1992).

It is reasonable to expect that individuals who are exposed to such cultural stereotypes will internalize these physical attractiveness standards. Therefore, people who

believe that they conform to the attractiveness ideals will experience higher well-being, whereas those who are dissatisfied with their physical attractiveness will experience various adverse effects. Indeed, these adverse effects are well documented in the literature. For example, people with lower body satisfaction are more likely to experience low self-esteem, higher levels of negative affect, and higher rates of depression and eating disorders (e.g., Donaghue, 2009; Polivy & Herman, 2002; Ricciardelli & McCabe, 2003). In addition to these and other negative intrapersonal outcomes, body satisfaction profoundly shapes interpersonal outcomes. Previous research shows that people prefer the company of attractive individuals over their less attractive counterparts (Kenrick, Montello, Gutierrez, & Trost, 1993) and that they treat attractive (vs. unattractive) individuals more positively (Langlois et al., 2000). Attractive people are also consistently rated as more desirable dating partners (e.g., Regan & Berscheid, 1997; Stretch & Figley, 1980), and physical attractiveness is typically one of the most prized qualities in a future or ideal mate (Goodwin, 1990). Thus it is not surprising that people with higher body satisfaction describe themselves as more popular and active (Cash, 1990), have more frequent romantic encounters (Nezlek, 1999), and higher relationship satisfaction (Meltzer & McNulty, 2010).

### **Body Satisfaction and Sexual Experience**

#### **Theoretical Prediction and Empirical Evidence**

In light of the well-documented and pervasive effects of body satisfaction on interpersonal relationships, it is reasonable to expect that body satisfaction should also be linked to the quality of one's sexual experience. Indeed there are at least two good

reasons to expect that the influence of body satisfaction may be particularly strong in the sexual domain.

First, past research indicates that body exposure increases self-consciousness (Widerman, 2000), body shame (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998), and body dissatisfaction (Haimovitz, Lansky, & O'Reilly, 1993; Tiggemann, 2001), thus suggesting that body satisfaction concerns should be particularly salient during sexual activity. For example, Haimovitz, Lansky, and O'Reilly (1993) conducted a study in which women were asked to imagine themselves in each of four different situations that differed in the degree of body exposure and self-focus, and then to rate how they felt about their bodies. Results showed that body satisfaction decreased across the four imagined situations as a function of increasing body exposure and self-focus. Specifically, body satisfaction was lowest in the "Dressing Room" scenario -- trying on bathing suits in front of a mirror in the dressing room of a department store -- and the "Beach" scenario -- walking by a group of attractive men and women in a bathing suit at the beach -- and highest after imagining themselves at lunch with a female friend or getting dressed for school in one's own room. Similar results were obtained in a study by Frederickson and colleagues (1998) in which women were randomly assigned to try on either a swimsuit or sweater (high vs. low body exposure). Results showed that women who tried on the swimsuit (vs. the sweater) felt more shame and less satisfied with their body. Thus, although none of these studies directly examined sexual situations, it seems reasonable to infer that sexual situations in which one's body is typically fully exposed would serve to heighten self-consciousness, which in turn has been linked to lower sexual self-esteem and sexual assertiveness, greater sexual anxiety, and poorer sexual functioning (e.g.,

Dove & Wiederman, 2000; Sanchez & Kiefer, 2007; Weaver, & Byers, 2006; Wiederman, 2000; Yamamiya, Cash, & Thompson, 2006).

Second, according to evolutionary theory, physical attractiveness is a primary characteristic used to judge individuals' reproductive potential because it reflects fertility and femininity in women, dominance and masculinity in men, and health in both sexes (Buss, 1994). This suggests that people who view themselves as physically attractive (facial and body) should be more confident about their reproductive value and their desirability as a mate, which could in turn free them to engage in and enjoy sexual activities.

Consistent with these arguments, previous research has demonstrated that individuals who view their bodies as attractive report higher sexual esteem (Calogero & Thompson, 2009; Wiederman & Byers, 2006; Wiederman & Hurst, 1997, 1998) and sexual desire (Seal, Bradford, & Meston, 2009), have more frequent sexual experiences (Weeden & Sabini, 2007), and report higher sexual pleasure, more sexual orgasms (Sanchez & Kiefer, 2007), and higher sexual satisfaction (Ambwani & Strauss, 2007; Meltzer, & McNulty, 2010). People who are satisfied with their own body also report less sexual anxiety and fewer sexual problems (Weaver & Byers, 2006; Cash, The'riault, & Annis, 2004), as well as fewer risky sexual behaviors (Gillen, Lefkowitz, & Shearer, 2006; Littleton, Breitkopf, & Berenson, 2005). In sum, both theory and empirical research indicate that body satisfaction plays an important role in shaping one's sexual experience.

### **Gender Differences**

Although a growing body of literature suggests that body dissatisfaction has become increasingly common among men (Cafri, & Thompson, 2004; Hargreaves, & Tiggemann, 2009), few studies have investigated the association between low body satisfaction and sexual experience among men. The dearth of research on men's body satisfaction and sexual experience reflects the traditional view that a woman's appeal as a sexual partner is heavily dependent on her role as a visual stimulus for her male partner. In contrast, a man's appeal as a sexual partner may be based more on non-appearance-related characteristics, such as performance, attentiveness, and personality (Wiederman, 2002).

However, studies testing gender differences in the effects of body satisfaction on sexual experiences have yielded mixed results. On the one hand, several studies indicated that individuals' satisfaction with their own body influence women's sexual experiences more than men's. For example, Nezlek (1999) found that both men and women with higher body satisfaction rated their interactions with others as more intimate, but only women with high body satisfaction felt more confident when interacting with others. Using a qualitative interview protocol, Ambwani and Strauss (2007) reported similar results: Women were more likely than men to say that body satisfaction influenced their sexual relations.

Other studies, however, found either no differences between men and women, or more adverse effects among men. For instance, Sanchez and Kiefer (2007) reported that although women were significantly more likely to report appearance concerns across both sexual and non-sexual contexts, there was no gender difference in the extent to which body shame negatively predicted sexual outcomes. In contrast, Gillen and colleagues

(2006) found that body satisfaction had opposite influences on risky sexual behaviors among men and women: Men who evaluated their appearance more positively reported more lifetime sex partners and more risky (i.e., unprotected) sexual encounters, whereas women who evaluated their appearance more positively reported significantly fewer unprotected sexual encounters. Finally, Davison and McCabe (2005) found that body satisfaction was unrelated to psychological, social, and sexual functioning among all age X gender groups in a community sample of adults, except for middle-age men (30 to 50 years) among whom lower body satisfaction predicted problematic social and sexual functioning.

Thus, the small number of studies conducted to date has yielded inconclusive results on whether and, if so, how body satisfaction affects sexual experience among men and women differently.

### **A Dyadic Perspective**

Past research has focused almost exclusively on the effects of individuals' body satisfaction on their own sexual experience, what Kenny, Kashy & Cook (2006) call an "actor effect." Because of the predominant focus on an actor's own body satisfaction, little is known about how partner's body satisfaction influences the actor's sexual experience, or for that matter how individual's perceptions of the other's body attractiveness shapes sexual experience. Because romantic relationships are inherently dyadic in nature, researchers consistently emphasize the need to examine relationship characteristics, processes, and perceptions from the perspective of both partners. From this perspective, three additional effects can be identified (see Figure 1): the actor's satisfaction with partner's body attractiveness, the partner's satisfaction with his or her

own body attractiveness, and the partner's satisfaction with the actor's body attractiveness. According to Kenny and colleagues (2006), the first of these effects is (also) an actor effect, whereas the last two are  $\rightarrow$ partner effects."

### **Effects of Partner's Body Satisfaction on Actor's Sexual Functioning**

How a partner's body satisfaction affects the actor's own sexual experience is less clear, and may differ for men and women, as discussed more fully below. On the one hand, consistent with the previous findings regarding body satisfaction and sexual experiences, a partner who is satisfied with his or her own body is less likely to be distracted by body concerns during intimate moments, and may also behave more confidently and be a better lover, thus leading to actor's higher sexual quality. For example, Meltzer and McNulty (2010) examined the influence of wives' (but not husband's) body satisfaction on both husbands' and wife's relationship and sexual satisfaction. Of most relevance to the current discussion, they found that wives' perceptions of their own sexual attractiveness (a subscale of their body satisfaction measure) positively predicted husband's sexual satisfaction and frequency of sex. Similarly, Morrison and colleagues (2009) reported that higher levels of women's body dissatisfaction and drive for thinness predicted decreases in the male partner's relationship functioning over the subsequent two months. However, neither study examined how men's body satisfaction predicted their female partner's sexual and relationship functioning. Thus statistical tests of gender difference in partner effects of body satisfaction could not be conducted.

An alternative prediction, however, can be made based on Rusbult's Investment Model (Rusbult, Johnson, & Morrow, 1986). This model suggests that an individual who

views himself or herself as attractive will perceive more alternatives to the relationship, be less invested in the relationship and, by extension, less invested in pleasing his or her partner. Consistent with the Investment Model, the only study investigating the effects of both partners' body satisfaction found that partner's self-ratings of their own facial and bodily attractiveness negatively predicted actor's relationship quality and willingness to solve marital problems (Barelds & Dijkstra, 2009). However, gender differences were not examined, so we do not know whether this effect differed for men and women.

In sum, how one partner's body satisfaction influences the other partner's sexual experience is unclear due to conflicting theoretical predictions, the possibility of gender differences, and the dearth of empirical research.

### **Effects of Satisfaction with Partner's Body Attractiveness on Sexual Functioning**

As previously discussed, both men and women highly value a partner's physical attractiveness as a signal of reproductive fitness (e.g. Buss, 1994; Feingold, 1990). Consequently, to the extent that each partner perceives the other as physically attractive, both partners should experience stronger sexual desire, which could in turn lead to higher sexual satisfaction. Although no study has specifically tested this idea, two recent studies examined the effects of partner's perceptions of the other's physical attractiveness on relationship satisfaction. Results of both studies generally supported this idea (e.g., Barelds & Dijkstra, 2009; Morrison et al., 2009 ). For example, Barelds and Dijkstra (2009) found that an individual's perception of the partner's facial and body attractiveness positively predicted both his or her own marital satisfaction and willingness to work on relationship problems. Similar but weaker results were found for partner perceptions of the actor's attractiveness.

Although Barelds and Dijkstra (2009) did not examine gender differences in their study, evolutionary theory suggests that men relative to women value physical attractiveness as a more important attribute in an ideal mate (e.g., Li, Bailey, Kenrick, and Linsemeier, 2002). Thus, a man's perceptions of his partner's attractiveness may more strongly influence sexual outcomes than the woman's perceptions of her partner's attractiveness. Consistent with this idea, Morrison and colleagues (2009) found that men's dissatisfaction with their partner's body (e.g., desired change in partner's body) prospectively predicted decreases over a 2-month period not only in their own relationship satisfaction but in their partner as well. Women's dissatisfaction with their partners' bodies, however, did not predict either their own relationship satisfaction or their partners' relationship satisfaction. Thus consistent with evolutionary theory, their findings point to the importance of men's satisfaction with partners' attractiveness above and beyond women's satisfaction.

### **The Interactive Effects of Satisfaction with Self and Partner's Body**

Although previous studies have demonstrated that satisfaction with an individual's own body and his or her partner's body attractiveness are important for sexual functioning, a more intriguing question might be how satisfaction with one's own and partner's body interact to predict sexual functioning. Indeed, the implicit assumption of studies that examine main effects only is that the effects of one partner's attractiveness are independent of the other partner's attractiveness. In sexual relationships, however, there are strong theoretical reasons to expect that satisfaction with one's own body should interact with satisfaction with one's partner's body to impact sexual experience, although the form of this interaction is less clear.

Nevertheless, According to similarity or equity theories (Byrne, 1961; Walster et al., 1973), similarity or matching between partners' body attractiveness should lead to better relationship outcomes including the sexual functioning. Indeed, pervasive findings suggest that people tend to pair with partners matching their own attractiveness level (for review, see Takeuchi, 2006). For example, Jonason (2009) found that individuals who viewed themselves as physically attractive valued physical attractiveness more in their long-term romantic partners. Similarly, Legenbauer and colleagues (2009) found that individuals who were dissatisfied with their body tended to pair with less attractive individuals. According to similarity theories, these results imply that individuals with high levels of body dissatisfaction believe they cannot compete with other people who are in their opinion better looking and therefore look for less attractive partners from the start. Furthermore, for people who are dissatisfied with their own physical appearance, engaging in a sexual relationship with a less attractive partner might allow them to reduce insecurity or rejection anxiety and thus feel better about themselves, which in turn could lead to better sexual experiences. In short, predictions derived from similarity theory suggests that for people who are satisfied with their own body, satisfaction with the partner's body attractiveness should positively predict sexual functioning, whereas for those who are relatively dissatisfied with their body, satisfaction with partner's body attractiveness should negatively predict sexual functioning.

Alternatively, the evolutionary perspective suggests that the nature of this interaction should differ for men. As previously discussed, evolutionary theory argues that the physical attractiveness of a long-term mate is more important to men than women. Accordingly, satisfaction with partner's body may be beneficial to men regardless of their

own perceived body attractiveness. Thus, in contrast to similarity theory predictions, men might tolerate or even benefit from a situation in which the female partner is more attractive, whereas the reverse situation (male is more attractive than the female) should have adverse effects. Evolutionary theory, however, does not offer specific predictions for the effects of partner's physical attractiveness on women's sexual functioning.

Although no previous study has tested the implied three-way interaction (own body attractiveness X partner body attractiveness X gender), McNulty, Neff and Karney(2008) examined gender differences in the effect of the discrepancy between partners' physical attractiveness on marital satisfaction and marital interaction behavior. Consistent with the evolutionary perspective, results showed that both spouses behaved more positively in relationships in which wives were more attractive than their husbands, whereas both behaved more negatively in relationships in which husbands were more attractive than their wives.

### **Limitations of Previous Research**

Although the association between body satisfaction and sexual functioning is well established in previous research, there are several limitations and theoretical gaps that need to be addressed. First, previous research has focused primarily on women's body satisfaction and its impact on sexual experience, whereas the effects among men have been largely ignored despite recent evidence that men experience high levels of body dissatisfaction and that body dissatisfaction significantly influences men's sexual experience as well.

Second, most studies investigating body satisfaction and sexual experiences have relied on cross-sectional designs and self-report, retrospective data, making the literature

as a whole subject to important limitations. Chief among these are the inability to draw clear causal inferences about the direction of effects; potential inaccuracies and distortions owing to a host of well-documented random and systematic errors associated with retrospective self-reports (Schwarz, 1999); and possible inflation of associations due to mono-method bias.

At last, most previous research has been conducted among individuals, and no research has investigated the impact of partner's body satisfaction, or of partners' satisfaction with the other's body satisfaction, on sexual functioning among couples. Indeed we are aware of only three dyadic studies examining body satisfaction – and two of these did not examine sexual outcomes (Barelds & Dijkstra, 2009; Morrison et al., 2009), whereas the third one only tested the effects of wives' body satisfaction on her own and her husband's sexual satisfaction (Meltzer & McNulty, 2010).

### **Overview of the Current Study**

To address the limitations mentioned above, the current research employed an experience sampling methodology to examine how both partners satisfaction with their own bodies as well as satisfaction with the partner's body attractiveness predict the quality of daily sexual experiences. Dyadic data were collected from two diary studies including 144 couples. Participants' self-rated body satisfaction and satisfaction with partner's body attractiveness were assessed at the pretest session and daily sexual experiences were reported over periods ranging from one to four weeks. The Actor Partner Interdependence Model (see Kenny, Kashy, & Cook, 2006, for a review) was used to test the following hypotheses.

### **Hypotheses**

Figure 1 schematically summarizes the primary hypotheses that were tested in the present study. Sexual functioning was assessed by three different indicators of positive functioning: a measure of overall sexual quality, low negative mood during sexual events, and more frequent intercourse.

### **Hypothesized Main Effects and Gender Moderation**

**Effects of actor body satisfaction (Path A1).** In the present study, we expect that individuals with higher body satisfaction will experience better daily sexual functioning. In addition, we test gender moderation of this link. However, in light of the fact that past research has provided only mixed support for theoretical predictions regarding the nature and direction of gender differences, no a priori hypothesis is offered.

**Effects of partner body satisfaction (Path P1).** We also test the effect of partner's body satisfaction on the quality of actor's sexual experience, as well as possible gender moderation of this effect. However, given mixed theoretical expectations and an overall lack of empirical evidence, we do not offer specific hypotheses about the nature of these effects.

**Effects of satisfaction with partner's body attractiveness (Path A2 and P2).** We expect that an individual's satisfaction with his or her partner's body attractiveness should positively predict his or her own sexual functioning (Path A2), as well as his or her partner's sexual functioning (Path P2). In light of theoretical expectations and empirical evidence showing that men prize physical attractiveness in their partner more than women, we expect that men's sexual functioning will be more strongly influenced by satisfaction with the partner's body (M>F, Path A2), whereas women's sexual

functioning will be more strongly influenced by her partner's satisfaction with her body (F>M, Path P2).

### **Hypothesized Interactions among Body Satisfaction Measures**

Based on the similarity hypothesis, we expect that a match between one's own and one's partner's body attractiveness (whether examined within a person or across partners) should predict better sexual functioning. Specifically, we predict that satisfaction with partner's body attractiveness should positively predict sexual functioning among individuals who are satisfied with their own body, whereas it should negatively predict sexual functioning among those who are relatively dissatisfied with their own body. According to evolutionary theory, however, this effect should be qualified by gender such that the man's response to a mis-match in physical attractiveness depends on the direction of the mis-match: Men can tolerate and may even benefit from a situation in which the female partner is more attractive, whereas the reverse situation (male is more attractive than the female) should be associated with poorer functioning.

## **Method**

### **Overview of Study Design and Procedures**

Except for length of participation in the diary phase, the two studies were conducted in nearly identical manners. Couples were recruited from a large Midwestern university community through newspaper ads, flyers, and Introductory Psychology courses. Thus, at least one member of each couple was affiliated with the University (most were undergraduates). Both members were 18 years old or older, and all couple members were having sex with each other. In Diary Study 1, couples were randomly

assigned to participate in a 1, 2, 3, or 4 week diary period. In Study 2, couples participated for a period of 19 to 23 days, depending on constraints imposed by the academic calendar. Average length of participation was 16.5 days in Study 1 and 22.4 days in Study 2.

In both studies, couple members attended an initial session in which a battery of questions was completed on a laptop computer, the study protocol was explained, and sample questions from each diary assessment were reviewed. Couples returned several days later for individualized sessions where they were trained to use palm pilots, and given personalized passwords. To allay concerns about privacy of the data, couples were shown how a questionnaire--once completed--could not be re-opened by anyone. The importance of completing questionnaires individually without input from one's partner was stressed, as well as the need to respect the partner's privacy by not pressuring him/her to divulge answers to specific questions. Participants were then given a laminated instruction card that also included contact information in the event of a problem, and sent into the field with their palm pilots.

Of primary importance to the present study, participants completed a brief assessment (requiring about 5 min) as soon as possible after they had sexual intercourse, or any other sexual contact involving a partner that lasted 5 minutes or longer. Participants were contacted weekly to download data and address any issues or questions that had arisen in the interim.

Finally, at the end of the study, a debriefing session was held in which the palmtops were returned, possible protocol violations and potential solutions for these problems were explored, and a brief questionnaire was completed. Couples received a

combination of course credit and money (\$10/per person per wk) for their participation. In addition, bonus money and tickets for a cash prize drawing were allocated proportionally, on the basis of the percentage of possible assessments actually completed.

### **Sample**

A total of 67 and 82 couples participated in Studies 1 and 2, respectively. However, 3 couples were dropped from Study 1, and 2 from Study 2, leaving 64 and 80 couples, respectively. In all cases, couples were dropped because one or both members were missing key data from the event assessment of sexual experience.

Basic descriptive information about both samples is summarized in Table 1. As a quick perusal of Table 1 will show, participants across both studies were predominantly White, and about 21 years of age on average. Moreover, men were significantly older than women and also reported higher education level than women. In addition, most couple members had completed between 1 and 2 years of college. 74% of couples said they were “seriously dating,” and another 15% were married. Approximately 1/3 of the couples lived together. Finally, most couples had been together about two years.

### **Participation and Compliance with Study Protocol**

The predictor variables used in the present study come from the initial questionnaire, and the sexual outcome variables come from the sexual contact reports filled during the diary phase.

**Study 1.** Couples reported an average of 4.6 sexual episodes over the diary period ( $n = 593$  sexual episodes). Although compliance with event-contingent reporting protocols cannot be directly ascertained, a cross-tabulation of male and female partner reports showed that 82% of sexual episodes were reported by both partners, 12% by the

female only, and 6% by the male only. Although we cannot be certain about the number of instances where neither partner completed a report, these data nevertheless suggest excellent overall compliance. Indeed, data from the final debriefing session support this interpretation: 82% of the sample indicated that they completed a sexual contact form after every intercourse occasion.

**Study 2.** Couple members reported an average of 6.3 sexual episodes ( $n = 1005$ ) during the diary phase of the study. Similar to the percentages observed in Study 1, 84% of sexual episodes were reported by both partners, 12% were reported by the female partner only, and 4% were reported by the male partner only. Interestingly although these percentages are very similar to those obtained in Study 1, the percentage indicating that they filed a sex report every time they had sex was somewhat lower in Study 2 -- 70% vs. 82%. Regardless, the data from both studies indicate good to excellent overall compliance with the event-contingent protocol.

## **Measures**

As previously indicated, measures assessing demographics and body satisfaction were assessed in the initial session, while sexual functioning was assessed in the sexual event reports completed during the diary period. All measures were completed individually by both couple members, and all are scored so that higher scores equal more of the measured construct. Table 2 presents descriptive information, correlations, and reliability estimates (where appropriate) for the major study variables.

### **Initial measures.**

**Demographics.** Demographic variables, such as race, age, education level, occupation, were assessed in the initial questionnaire. In addition, participants also

answered questions about their relationship status, relationship duration, cohabitation status and parenthood status. (See Table 1 for more information). Because of the near-perfect correlations between male and female partner's age, education, and relationship, cohabitation, and parenting statuses, couple level variables were computed for each variable by averaging the two partners' reports. In addition, factor analysis showed that relationship status, cohabitation status, parenting status, and age all loaded on a single factor, suggesting that these life circumstances covary together. Thus a composite variable was formed by averaging the four couple-level variables to create an overall measure indicating the couple's "life stage." A higher life stage score indicates higher average age, more committed relationship status, and higher probabilities of cohabiting, and having at least one child.

***Body satisfaction.*** Although several body satisfaction measures exist with demonstrated validity and reliability, these measures have been developed and used mostly among female samples (e.g., Garner, Olmsted, & Polivy, 1983; Slade Dewey, Newton, Brodie, & Kiemle, 1990). In addition, these measures typically assess general appearance and facial attractiveness in addition to body attractiveness, thus leading to conceptual confusion, as previously discussed. To address these issues, we selected 3 items from two prominent self-esteem measures (Marsh & O'Neill's Self-Description Questionnaire III [SDQ-III], 1984; Peterson, Schulenberg, Abramowitz, Offer, & Jarcho's Self-Image Scale for Young Adolescents, 1984) that specifically focused on the body and were either equally appropriate for men and women or for which parallel gender-specific forms could be easily generated. The items were factor analyzed separately among men and women. Results showed that all items loaded on a single

factor among both gender groups, with loadings  $>.80$  among men and  $>.89$  among women. The items included: “My weight is about right-not too fat or too skinny;” “I am proud of my body;” and “I have a good figure/body build” for women and men, respectively. All items were rated on a 5-point scale where 1 = “Strongly disagree;” and 5 = “Strongly agree.” In the current sample, these items formed a highly reliable composite among both men ( $\alpha=.79$ ) and women ( $\alpha=.89$ ).

***Satisfaction with partner’s body attractiveness.*** The same three items used to assess one’s own body satisfaction were completed with reference to the partner. Specifically, participants rated their partner’s weight, body shape, and overall body satisfaction on the same 1 to 5 scale that they rated their own body. Results showed that all items loaded on a single factor among both gender groups, with loadings  $>.87$  among men and  $>.79$  among women. In the current sample, these items formed a highly reliable composite among both men ( $\alpha=.86$ ) and women ( $\alpha=.80$ ).

**Daily sexual report measures.**

Three aspects of sexual experience were assessed following each intercourse occasion.

***Overall sexual quality.*** Quality was assessed by a composite reflecting arousal and intimacy during sex, as well as overall satisfaction (physical and emotional) with the sexual experience. Arousal and intimacy were each assessed by 3 adjectives. Sample adjectives were “Aroused” and “In love;” respectively. Participants rated on a 5-point scale (1= “Not at all” and 5= “Very”) the extent to which each item described their experience. Factor analysis of the three measures showed that all measures loaded on the same factor with loadings  $>.74$  among both men and women. Thus for analytic purposes,

the average of these measures was used as an index of overall sexual quality. In the current sample, the three measures formed a highly reliable composite among both men (mean  $\alpha=.86$ ) and women (mean  $\alpha=.87$ ) across dairy period.

***Negative mood during sex.*** Negative mood was assessed by three items asking participants to rate the extent to which each mood-related adjective (alone/alienated, unhappy, sad) described their feelings while having sex. Items were rated on the same 1 to 5 scale as quality. This subscale also showed good reliability among both men (mean  $\alpha=.73$ ) and women (mean  $\alpha=.71$ ) across dairy phase.

***Intercourse frequency.*** Intercourse frequency was computed based on a single dichotomous variable asking participants to indicate whether they had intercourse (vaginal or anal) in each reported sexual episode. Because couple member reports were highly correlated ( $r = .93$ ), a single couple level variable was computed in which intercourse was assumed to have occurred (0 = no, 1 = yes) if either partner reported that the couple had sexual intercourse (vaginal or anal) that day. Intercourse was reported on 81.4% of all sexual reports.

### **Overview of Data Analyses**

The data from this study were structured hierarchically. Daily reports between couple members were matched on the actual day in which the events occurred (modeled at Level 1, L1), and were then nested under couples (modeled at Level 2, L2). Two-level structures are generally preferred over three-level structures (i.e., daily reports nested within individuals nested within couples) because they not only control for dependencies between couple members, but also enable the temporal matching of male and female partner reports (Laurenceau & Bolger, 2005).

A series of preliminary analyses was run to identify significant control variables for inclusion in the primary models predicting each of the three sexual outcomes. The set of potential control variables include all of those listed in Table 1. First, those variables that were significantly correlated with a given outcome were identified, and then these were entered simultaneously into a regression model predicting that outcome. All variables that were significant in the regression model were then retained for use in the primary analyses described below. In addition, the total number of participation days was controlled at L2 in models predicting the probability of intercourse because the likelihood of reporting behavioral occurrences has been shown to decline over time in some diary studies (Gillmore et al, 2001).

Hypotheses regarding the effects of both partners' body satisfaction and satisfaction with partner's body attractiveness on individuals' sexual quality and negative mood during sex were tested in the Actor Partner Interdependence Model (see Kenny, Kashy, & Cook, 2006, for a review) using the Mixed procedure in SPSS. The APIM tests actor and partner effects simultaneously, while also allowing for a direct test of gender differences in intercepts and gender interactions. Couple level outcome (i.e., intercourse probability) was tested in multilevel model using HLM (HLM 6: Linear & Nonlinear Modeling, Raudenbush, Bryk, Cheong, & Congdon, 2004). Male and female effects were examined instead of actor and partner effects. In addition, intercourse probability, a dichotomous outcome, was analyzed using Bernoulli estimation in HLM.

### **Testing Main Effect Hypotheses**

Main effect hypotheses test the between-subjects (or main) effects of body satisfaction and satisfaction with partner's body attractiveness on sexual functioning for both actor and partner.

**APIM models.** In APIM models, main effect hypotheses were tested in two ways. First, corresponding actor and partner main effects of each predictor were tested simultaneously in the same model. These analyses provide a comparison point for the majority of the findings in the literature, which have typically examined the effects of these predictors independent of other correlated factors. Thus, for example, variants of the following model were used to test the effects of body satisfaction (Level 2) on daily sexual functioning (Level 1):

$$\text{Sexual quality}_{jk} = \pi_{0jk} + \pi_{1jk} (\text{Actor Body Satisfaction}) + \pi_{2jk} (\text{Partner Body Satisfaction}) + \pi_{3jk} (\text{Gender}) + e_{jk}$$

(Eq.1)

where "Sexual quality" is the average level of sexual quality for person j of couple k;  $\pi_{0jk}$  is the predicted value of sexual quality for person j when all other variables in the model equal zero;  $\pi_{1jk}$ , and  $\pi_{2jk}$  are the partial within-person regression coefficients for actor body satisfaction and partner's body satisfaction;  $\pi_{3jk}$  is the partial regression coefficient for gender; and  $e_{jk}$  is a random residual component.

A second set of analyses was then run in which the effects of all four predictors were simultaneously estimated. Thus, for example, variants of the following model were used to test the effects of body satisfaction and satisfaction with partner's body (Level 2) on daily sexual functioning (Level 1):

$$\begin{aligned}
 \text{Sexual quality}_{jk} = & \pi_{0jk} + \pi_{1jk} (\text{Actor Body Satisfaction}) + \pi_{2jk} (\text{Actor's} \\
 & \text{Satisfaction with Partner Body Attractiveness}) + \pi_{3jk} (\text{Partner Body Satisfaction}) + \pi_{4jk} \\
 & (\text{Partner's Satisfaction with Actor Body Attractiveness}) + \pi_{5jk} (\text{Gender}) + e_{jk}
 \end{aligned}$$

(Eq.2)

where "Sexual quality" is average level of sexual quality for person j of couple k;  $\pi_{0jk}$  is the predicted value of sexual quality for person j when all other variables in the model equal zero;  $\pi_{1jk}$ , and  $\pi_{2jk}$  are the partial within-person regression coefficients for actor body satisfaction and actor's satisfaction with partner's body attractiveness respectively;  $\pi_{3jk}$  and  $\pi_{4jk}$  are the partial within-person regression coefficients for partner body satisfaction and partner's satisfaction with actor's body attractiveness respectively;  $\pi_{5jk}$  is the partial regression coefficient for gender; and  $e_{jk}$  is a random residual component.

Finally, gender interactions were tested in a parallel manner -- that is, by adding two gender X predictor interactions to Eq. 1, and four gender X predictor interactions to Eq. 2.

**HLM models.** Main hypotheses regarding the couple level outcome, intercourse probability, were examined in HLM following procedures described above for the APIM models, except that actor effect and partner effect were replaced by female and male effects, respectively. The significance of the gender differences in this model were examined following model comparison procedures. Specifically, the fit of a model in which the female and male partner effects were constrained to equality (e.g.,  $\pi_{1jk} = \pi_{2jk}$ , in Eq.3 below) was compared with an unconstrained model (e.g.,  $\pi_{1jk} \neq \pi_{2jk}$ , in Eq.3). If the more complex, unconstrained model provides a significantly better fit to the data than

the constrained model, it indicates that the female effect is significantly different from the male effect, and that the two effects should be reported separately. Otherwise, the more parsimonious constrained model was adopted and an average (across men and women) effect was reported.

$$\text{Intercourse Probability}_{jk} = \pi_{0_{jk}} + \pi_{1_{jk}} (\text{Female Body Satisfaction}) + \pi_{2_{jk}} (\text{Male Body Satisfaction}) + e_{jk}$$

(Eq. 3)

### Testing Interaction Hypotheses

A series of interaction models was estimated to test hypotheses about interactions among body satisfaction predictors. Specifically, in APIM models, actor body satisfaction X actor's satisfaction with partner's body and partner body satisfaction X partner's satisfaction with actor's body were tested simultaneously in the same models predicting actor's sexual experiences. A representative model predicting sexual quality was set up as follows:

$$\begin{aligned} \text{Sexual quality}_{jk} = & \pi_{0_{jk}} + \pi_{1_{jk}} (\text{Actor Body Satisfaction}) + \pi_{2_{jk}} (\text{Actor Satisfaction} \\ & \text{with Partner Body Attractiveness}) + \pi_{3_{jk}} (\text{Partner Body Satisfaction}) + \pi_{4_{jk}} (\text{Partner} \\ & \text{Satisfaction with Actor Body Attractiveness}) + \pi_{5_{jk}} (\text{Gender}) + \pi_{6_{jk}} (\text{Actor Body} \\ & \text{Satisfaction X Actor Satisfaction with Partner Body Attractiveness}) + \pi_{7_{jk}} (\text{Partner Body} \\ & \text{Satisfaction X Partner Satisfaction with Actor Body Attractiveness}) + e_{jk} \end{aligned}$$

(Eq. 4)

where "Sexual quality" is average level of sexual quality for person j of couple k;  $\pi_{0_{jk}}$  is the predicted value of sexual quality for person j when all other variables in the model equal zero;  $\pi_{1_{jk}}$ , and  $\pi_{2_{jk}}$  are the partial within-person regression coefficients for

actor body satisfaction and actor's satisfaction with partner's body attractiveness respectively;  $\pi_{3_{jk}}$  and  $\pi_{4_{jk}}$  are the partial within-person regression coefficients for partner body satisfaction and partner's satisfaction with actor's body attractiveness respectively;  $\pi_{5_{jk}}$  is the partial regression coefficient for gender;  $\pi_{6_{jk}}$  and  $\pi_{7_{jk}}$  are the partial within-person regression coefficients for the two interaction terms; and  $e_{jk}$  is a random residual component. Higher-order interactions involving gender were tested by adding two three-way gender interaction terms (e.g., actor's gender X actor body satisfaction X actor's satisfaction with partner's body and actor's gender X partner body satisfaction X partner's satisfaction with actor's body), along with the four two-way gender interactions needed to provide a valid test of the three-way interactions, into each model respectively.

Interaction hypotheses regarding the couple level outcome, intercourse probability, was examined in HLM by using exactly the same equation as in APIM models as shown (Eq. 4). In addition, the higher-order gender interactions were examined by model comparison procedure, as previously described.

Because the APIM has a large number of terms, trimmed models were developed which, according to Bryk and Raudenbush (1992), improves the stability of individual parameter estimates. Accordingly, after running the full models for all outcomes (as described above), non-significant terms were dropped and the models were re-estimated. Only effects that remained significant after removing non-significant terms are discussed in the results. In addition, because it is statistically difficult to detect interactions in field research (e.g., McClelland & Judd, 1993), the marginal significant interactions (i.e.,  $p < .10$ ) were also reported in the current study following McClelland and Judd's

recommendation that higher rates of Type I error should be accepted to increase statistical power in field research.

## Results

Before testing the main hypotheses, preliminary analyses were run to determine if the two samples were sufficiently similar to justify combining them into one overall sample, which would not only simplify the presentation of results but also increase the power of our analyses. Gender differences in the key study variables were also examined, as were potential confounding variables in the relation between body satisfaction and sexual experience. The final section presents results of the primary hypothesis testing.

### Preliminary Analyses

**Comparing the two samples.** As mentioned in the method section, Study 1 and Study 2 followed an identical protocol, except for length of participation in the diary phase. Thus, it is reasonable to think that associations among the key variables might not differ across the two studies. To the extent that this is true, data from the two studies can be combined to yield one larger data set.

To determine if combining data from the two studies is justified, two MANOVA tests and one ANCOVA test were run to examine the main effects of study (Study1 VS. Study 2) on the set of predictors (e.g., body satisfaction and satisfaction with partner's body), and the main effect of study and study X predictor interactions (i.e., two actor body satisfaction variables and two partner body satisfaction variables) on the set of two L1 outcome variables (e.g., sexual quality and negative mood during sex), as well as the main effect of study and study X predictor interactions (i.e., two female body satisfaction

variables and two male body satisfaction variables) on the couple level outcome variable (i.e., intercourse probability). As shown in Table 3, study had a significant main effect on the set of body satisfaction variables, which follow-up univariate analyses showed was due to the higher satisfaction with partner's body attractiveness reported by Study 2 participants relative to Study 1 participants. However, neither the main effect of study, nor the study X predictor interaction terms significantly predicted the set of outcome variables. In sum, the results from the MANOVA and ANCOVA tests suggest that Study 1 and Study 2 were virtually identical in terms of the associations between predictors and outcomes. Thus, it is reasonable and valid to combine the data from Study 1 and Study 2 in the following main analyses.

**Comparing gender difference in study variables.** Paired-samples t-tests were run to examine gender differences in the two predictors and two individual level sexual outcomes (e.g., sexual quality and negative mood during sex). As shown in Table 4, 3 of the 4 comparisons yielded a significant gender difference. Relative to men, women reported significantly lower levels of satisfaction with partner's body attractiveness, lower sexual quality and more intense negative moods during sex. However, all differences were small in magnitude ( $ds < .23$ ). In contrast, women and men did not show significant difference in satisfaction with their own body's attractiveness. Also of note, the correlation between men and women's reports of the quality of the same sexual experience and of negative moods experienced during those shared events were quite low,  $r's \leq .36$ .

**Selecting covariates for primary analyses.** As previously discussed, correlations between potential covariates (viz., see Table 1) and the set of dependent outcomes were

computed. Examining the correlations between these variables and the set of outcomes revealed three small, but significant correlations. Life stage (a composite of four variables, as previously described) was significantly related to sexual quality ( $r = .042, p = .088$ ) and negative mood during sex ( $r = -.074, p = .003$ ), indicating that people at later life stage have higher sexual quality and less intense negative moods during sex. In addition, years of completed education were negatively related to sexual quality ( $r = -.082, p < .001$ ), indicating that individuals with higher education level reported lower sexual quality. Based on these findings and following recommendations by Pedhazur (1997), only those covariates found to be significant in the correlational analyses were included as control variables in the primary analyses. Finally, gender was controlled in all analyses as it is the basis on which dyad members are distinguished.

### **Primary Analyses**

#### **Main effects and gender interactions.**

Results for main effects and gender interactions on sexual quality and negative mood during sex are summarized in Table 5. Parallel analyses were conducted for the couple level variable, intercourse probability, but no main effects were found. Moreover, although model comparisons revealed a significant gender X satisfaction with partner's body interaction predicting intercourse probability,  $\chi^2 (1, N=140) = 33.3, p < .001$ , estimating the effects separately revealed non-significant effects in the opposite direction for men ( $b = -.213, p = .112$ ) and women ( $b = .096, p = .362$ ). In other words, no significant main effect was found for couple level outcome and thus the results were not shown.

***Effects of body satisfaction.*** Main effects of actor body satisfaction on sexual functioning were partially in line with expectation. As shown in Table 5 and as expected, actor's body satisfaction positively predicted sexual quality and negatively predicted negative mood during sex, when estimated independent of satisfaction with partner's body attractiveness. However, when the effects of satisfaction with partner's body were controlled, these effects were no longer significant. In addition, no significant gender X actor body satisfaction interactive effects were found.

Interestingly, partner's body satisfaction negatively predicted actor's sexual quality, but only when partner's satisfaction with actor's body attractiveness was controlled. In other words, when controlling for the effects of all other predictors in the model, actors whose partner had high body satisfaction actually reported lower sexual quality. Finally, no significant gender interactions were found for partner's body satisfaction.

***Effects of satisfaction with partner's body attractiveness.*** Hypotheses regarding the main effect of satisfaction with partner's body attractiveness on sexual outcomes were generally supported. Higher satisfaction with partner's body attractiveness was significantly associated with higher sexual quality and less negative mood during sex, regardless of whether other predictors were controlled. Indeed, satisfaction with partner's body was a stronger predictor of an individual's own sexual functioning than the individual's satisfaction with his or her own body, especially for overall assessments of sexual quality. No gender interactions were found in terms of the actor effect of satisfaction with partner's body.

Finally, although there were significant positive effects of partner's satisfaction with actor's body attractiveness on actor's sexual quality, these effects were moderated by gender ( $b = -.237, p = .015$  and  $b = -.213, p = .028$ , controlling and not controlling, respectively, for actor and partner body satisfaction). In line with expectation, plotting this interaction (see Figure 2) showed that the female's sexual quality was enhanced when the male partner was satisfied with her body attractiveness ( $b = .251, p < .001$  and  $b = .218, p = .002$ , with and without additional controls), whereas the man's sexual quality was unrelated to female partner's satisfaction with his body attractiveness ( $b = .014, p = .829$  and  $b = .005, p = .950$ , with and without additional controls).

#### **Interaction effects.**

Results of the interaction tests are summarized in Table 6. As shown (1<sup>st</sup> row), satisfaction with own and partner's body attractiveness interacted to predict two of the three outcomes. Plotting these interactions revealed similar yet distinct patterns across two outcomes. As shown in Figure 3 (top panel), higher satisfaction with partner's body attractiveness was associated with significantly less negative mood during sex among people who were satisfied with their own bodies, but not among those who were dissatisfied. This pattern is partially consistent with the similarity hypothesis in that couples in which both individuals were satisfied with their bodies experienced better outcomes. However, in contrast to the similarity hypothesis, couples in which both members were dissatisfied with their bodies experienced outcomes that were indistinguishable from those in which only one partner was dissatisfied. This pattern suggests that individual experienced more negative mood if he or she dissatisfied with either one's own body or partner's body.

Plotting the other interaction (see Figure 3, bottom panel) revealed a similar pattern among those who were satisfied with their own body in that satisfaction with the partner's body was associated with better outcomes (i.e., higher probability of intercourse). However, the simple effect of satisfaction with the partner's body did not reach significance in either case. Among those who were dissatisfied with their own body, satisfaction with the partner's body was negatively (though again not significantly) associated with intercourse frequency. Finally, none of these interaction effects was moderated by gender.

As shown in Table 6 (middle panel), a single marginally significant higher-order gender X partner's body satisfaction X partner's satisfaction with actor's body ( $b = -.036$ ,  $p = .063$ ) was found. Decomposing the interaction revealed that partner's body satisfaction interacted with partner's satisfaction with the actor's body to (marginally) predict negative mood among women ( $b = -.027$ ,  $p = .088$ ), but not men ( $b = .010$ ,  $p = .420$ ). As shown in Figure 4, plotting the interaction among women revealed that women experienced the strongest negative moods when their male partner was highly satisfied with his own body but was dissatisfied with her body. Conversely, women experienced the least negative affect when her partner was satisfied with both his own body and her body. Levels of negative mood were intermediate and did not differ among women whose partner was relatively dissatisfied with his own body, regardless of his level of satisfaction with her body. No simple effect reached significance.

## Discussion

### Summary

The current study uses data from two dyadic diary studies to examine the main effects of body satisfaction and satisfaction with partner's body on sexual functioning, as well as interactions among these factors. In general, the results of the current study paint a complex picture of interdependent dyadic processes that as a whole challenge and extend the extant literature on body satisfaction and sexual functioning. Key findings are summarized below and in Figure 5.

First, in contrast to past research showing a consistent pattern of effects for an individual's own body satisfaction on sexual functioning, the present study indicates that body satisfaction is not a significant determinant of an individual's own sexual functioning when a dyadic perspective is taken. Although small but significant (positive) effects in line with past research were found when the effects of body satisfaction were independently estimated, these effects went away when satisfaction with the partner's body and the partner's perceptions were controlled.

Second, and a corollary to the first, our findings indicate that satisfaction with one's partner's body is a more important determinant of an individual's sexual quality than satisfaction with his or her own body. Indeed, individuals' satisfaction with the partner's body was a stronger predictor of sexual quality than satisfaction with own body, whether these effects were predicted independently or simultaneously.

Third, the present study also suggests that part of the reason an individual's own body satisfaction is not strongly linked to sexual functioning may be that its effect depends on how satisfied that individual is with his or her partner's body. As shown in Figure 5, this was true for both negative mood and sex frequency. In the former case, satisfaction with one's own body significantly predicted negative mood only among those

who were highly satisfied with their partner's body ( $b = -.029, p = .018$  vs.  $b = .001, p = .995$ ), whereas in the latter case, opposing (though non-significant) effects of body satisfaction were found on sexual frequency for those who perceived their partner's body as relatively more vs. less attractive (see interaction plot in bottom panel of Figure 3).

Fourth, consistent with predictions from Rusbult's Investment Model and with prior research (e.g., Barelds & Dijkstra, 2009), partner's body satisfaction exerted a negative effect on sexual quality for both women and men. Although two previous studies found that women's body satisfaction positively impacted their partner's relationship satisfaction (e.g., Meltzer & McNulty, 2010; Morison, Doss, & Perez, 2009), neither specifically examined sexual satisfaction or took into account the husband's perception of the wife's attractiveness. Consequently, these studies failed to take account of the possibility that the husband's perception of the wife's attractiveness, as opposed to the wife's attractiveness per se, positively affected his experience.

Finally, the current study found consistent evidence suggesting that the woman's subjective response to sexual experience is more strongly affected by her partner's satisfaction with her body than the reverse. As shown in the top and middle panels of Figure 5, this pattern was apparent for both sexual quality and negative mood: Male partner's satisfaction with the woman's body significantly positively predicted women's sexual quality, and interacted with satisfaction with his own body to predict women's negative mood. Moreover, plotting the two-way interaction among women revealed that women experienced the highest levels of negative mood when their partner was satisfied with his own body, but not with hers. In contrast, neither of these effects was significant among men.

**Implications for Theory and Research**

Results of the present study have a number of important theoretical and methodological implications. First, these results failed to conform to predictions from any single theoretical perspective. For example, Rusbult's Investment Model can help explain why partner's body satisfaction has a negative impact on actor's sexual quality: Individuals who are physically attractive should perceive more alternatives to the current relationship than their less attractive counterparts. Consequently, such individuals may be less motivated to please or focus on their partner, which in turn could lead to a poorer sexual experience for the partner. In contrast, similarity theory can help explain why couples have more frequent intercourse when both partners are matched on perceived body attractiveness: Comparability in attractiveness should be associated with more active sexual behaviors because both partners feel equally rewarded and satisfied in the current relationship. In contrast, dissimilarity in attractiveness should be associated with less frequent sex because the perceived discrepancy between partners' attractiveness may cause the more attractive partner to feel underbenefited and the less attractive partner to feel anxious about rejection. Finally, the finding that women are more strongly influenced by the partner's perception of her body than men are by the corresponding female partner's perception can be readily explained from a socialization or an evolutionary perspective, to the extent that women are more relationship and partner-focused due to socialization pressures, evolutionary pressures, or both. Thus, we conclude that an adequate understanding of the effects of body satisfaction on sexual functioning will require a theoretical eclecticism that is relatively uncommon in psychology.

Methodologically and theoretically, our results highlight the importance of adopting a dyadic perspective in examining the effects of body satisfaction on sexual experience. Indeed, as shown in the top panel of Figure 5, among the four actor and partner effects examined in the present study, the only effect that failed to exert a significant direct or main effect on the overall quality of men and women's sexual experience was the one strictly within-person, individual-level predictor included in our model – an individual's satisfaction with his or her own body. The fact that this variable has been the exclusive focus of the overwhelming majority of past research suggests that the literature as a whole has failed to grasp the inherently interdependent and dyadic nature of processes shaping the quality of men and women's sexual experience. This myopic focus on the effects of an individual's satisfaction with his or her own body to the exclusion of the individual's perceptions of the partner's body as well as the corresponding partner's perceptions has had several unfortunate consequences. Besides the obvious implication of having missed those factors that appear to be the most important contributors to the quality of an individual's overall sexual experience, our findings strongly suggest that the well-documented impact of body satisfaction on sexual experience is largely artifactual, owing to the positive correlation between an individual's satisfaction with their own and their partner's body (see Figure 5). In a related vein, our findings also show that body satisfaction has important implications for the frequency and quality of sexual experiences among both men and women. As shown in Figure 5, with the exception of partner's perception of actor's body, all effects were similar across men and women, thus making it difficult to justify the disproportionate attention this issue has received among women.

Results of the present study also highlight the value of examining multiple indicators of sexual experience. The three outcomes were not only relatively weakly correlated (see Table 2), but more important, distinct patterns of prediction were observed for each of the three outcomes. Moreover, integrating results across disparate outcomes reveals potentially important patterns that would otherwise be missed. For example, our findings indicate that although couples have more frequent intercourse when the individual's own level of body satisfaction matches the level of satisfaction with the partner's body (see Figure 3, bottom panel), these are not psychologically equivalent situations. Indeed, as shown in the top panel of Figure 3, matches based on a high level of body satisfaction are associated with the lowest levels of negative mood, whereas matches based on a low level of body satisfaction are associated with the highest levels of negative mood. The difference between the qualitative and quantitative result points to the paradoxical situation faced by individuals who are dissatisfied with their own body and partner's body: Sex, though relatively frequent, may not be that enjoyable. Such findings suggest that future research might benefit from investigating the consistencies, and more importantly, discrepancies between qualitative and quantitative results.

Finally, the present study highlights the potential utility of using event-level reports of sexual experience collected in the context of a daily diary design. Indeed, the fact that effects observed for an individual's own satisfaction with his or her body were relatively modest in magnitude even when estimated independently of partner perceptions (see Table 5) raises the possibility that estimates of the magnitude of this association derived from traditional cross-sectional, global reports are inflated due to various sources of shared bias, including retrospective self-report bias as well as other contemporaneous

or momentary influences. Indeed, the fact that measures of sexual functioning were obtained in near real-time and thus were not subject to the same biases as the body satisfaction measures may also account for the failure of the present study to replicate gender differences in the effects of body satisfaction on sexual functioning.

### **Strengths and Limitations**

To the best of our knowledge, the current study is the first using diary methods to examine the links between body satisfaction and sexual experience among couples. The present study, while not without its limitations, has a number of important strengths and advantages over past research. First, the inclusion of a daily diary methodology offers important methodological and statistical advantages over other methodologies. For one, diary reports provide more accurate assessment of the processes of interest than do alternative methods because the reports are close in time (within minutes or hours) to when the behavior or event occurs. The temporal proximity of reports reduces distortions in memory and inaccuracies in reporting, thus yielding greater accuracy in measurement of core constructs (Shiffman, 2000). In addition, electronic data collection also makes it easier to maintain confidentiality by use of passwords and programming that prevents respondents from going back to a previously completed report to change its contents.

Second, contrary to the majority of existing studies that used only women, our study included both couple members and their reports of their own body satisfaction and perception of partner's body attractiveness and sexual experiences. The study of the couple as a whole instead of just one member is vital to understanding dynamic, interpersonal processes like romantic relationships (Cooper, 2002). In part, this is because couple members, or individuals in any kind of relationship, are interdependent. As such,

actions of either individual affect both the self and the other. Furthermore, because the degree of interdependence is decidedly greater in close, romantic relationships compared to other interpersonal interactions, the importance of assessing romantic couples as wholes instead of as independent individuals is even greater. As such, the current study benefits from having both couple members because it allows us to not only examine the effects of individuals' own body satisfaction or their satisfaction with partners' body attractiveness on their own sexual experiences, but also to examine the similar effects of their partners.

Despite these many strengths, the proposed study also suffers from several limitations. First, diary designs pose extra burden on the participant compared with other less intrusive designs, which may lead to samples that are highly motivated to participate and thus differ from the population at large in ways that limit generalizability.

On a related note, the homogeneity of our sample represents another limitation. Our sample was overwhelmingly White, well educated, high functioning, and mostly college-aged. Thus, results of our study may not generalize well to other ethnic groups, or to less well educated or well functioning individuals. Also, most couples in our sample were unmarried or were relatively newly married. Thus, although participants were required to be in a committed relationship for at least six months and the average relationship duration is about two years in the current study, results may not generalize to individuals in more serious, longer-term relationships.

Finally, although we used daily method to assess individuals' sexual experiences, body satisfaction and perception of partner's body attractiveness are treated as stable personal traits in the current study and were only measured once in the initial

questionnaire. The lack of daily measures of body satisfaction restricts our ability to examine potential lagged effects of body satisfaction on sexual functioning, which would strengthen our ability to draw conclusions about the direction of causal flow between body satisfaction and sexual functioning. Furthermore, some previous studies suggest that self-consciousness during sex mediates the association between body satisfaction and sexual functioning (e.g., Steer & Tiggemann, 2008). Repeated measures of body concern and self-consciousness during sex would enable future studies to investigate possible mechanism underlying our findings.

### **Conclusions**

Taken together, the current study illuminates the influence of body satisfaction as well as the role of satisfaction with partner's body attractiveness on sexual functioning. At the same time, this research underscores the complexity of sexual functioning, and indicates that the daily processes underlying such experiences are multi-faceted, interrelated, and dependent on multiple factors. As each question is addressed, new questions arise, suggesting a great deal of promise for future research on body satisfaction within close relationships.

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Table 1  
*Description of Sample Demographics and Relationship Variables Broken Down by Gender*

	<u>Female</u>		<u>Male</u>		$t/\chi^2$	$r$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
<b><i>Personal</i></b>						
Race (Caucasian %)	.91	.29	.90	.31	.16	.45***
Age(Years)	20.54	4.46	21.28	4.95	-4.31***	.91***
Education	14.03	1.98	14.43	2.09	-2.81**	.66***
Job (yes %)	.58	.50	.53	.50	.51	.33***
Children (yes %)	.05	.22	.06	.23	.07	.79***
<b><i>Relationship</i></b>						
Relationship Status	2.28	0.78	2.35	0.76	-2.73**	.92***
Relationship Duration (in month)	25.13	28.24	25.04	28.29	.18	1.00***
Cohabitation (% yes)	.26	.44	.28	.45	-1.14	.88***

*Note.* N = 144 couples.  $t/\chi^2$  = significance of the mean difference between female and male reports (female – male).  $r$  = correlation between female and male reports. Education: ranges from 8-8<sup>th</sup> grade to 20-doctorate with 14 indicate college freshman. Relationship Status: 1-casual dating; 2-seriously dating; 3-engaged; 4-married.

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 2  
*Descriptive Statistics, Within-Person Correlations, and Within-Couple Correlations among Study Variables*

	Body Satisfaction	Perception of Partner's Attraction	Sexual Quality	Negative Mood	Intercourse Freq.
Body Satisfaction	.17*	.28**	.13*	-.08	.04
Perception of Partner's Attraction	--	.21*	.32*	-.08	.08
Sexual Quality	--	--	.36**	-.43**	-.00
Negative Mood	--	--	--	.12	.07
Intercourse Freq.	--	--	--	--	.93**
Mean	4.02	5.18	5.57	1.11	1.94
SD	1.25	.95	.77	.21	1.28
Skewness	-.39	-1.79	-.70	2.65	1.15
Kurtosis	-.45	4.26	.24	8.17	2.11
$\alpha$	.90	.83	.87	.79	N.A.

*Note.* Correlations along diagonal are correlations between men and women within couple and all other reliabilities are with-in person.  $\alpha$ , reliability was computed based on the whole sample. N.A., not applicable.

\*  $p < .05$ . \*\*  $p < .01$ .

Table 3  
*MANOVA and ANCOVA Results of Predicting Body Satisfaction Variables and Sexual Functioning Variables from Study Effect*

Effect	Hotelling's Trace	F-value	p-value	Effect size ( $\eta^2$ )
<u>Body Satisfaction and Satisfaction with Partner's</u>				
<u>Body</u>				
Study	.030	4.234	.015	.029
<u>Sexual Quality and Negative Mood during Sex</u>				
Study	.012	1.672	.190	.012
Study by A_ body satisfaction	.004	.505	.604	.004
Study by A_ satisfaction with partner body	.002	.247	.751	.002
Study by P_ body satisfaction	.002	.247	.781	.002
Study by P_ satisfaction with actor body	.014	1.909	.150	.014
<u>Intercourse Frequency</u>				
Study	.013	.200	.656	.001
Study by F_ body satisfaction	.001	.016	.899	.000
Study by F_ satisfaction with partner body	.048	.730	.395	.005
Study by M_ body satisfaction	.276	4.184	.043	.030
Study by M_ satisfaction with actor body	.041	.620	.432	.005

*Note.* Independent variables included in the model are listed under "Effect". Two body satisfaction variables were entered into the first model as dependent variables; individual sexual outcomes (sexual quality and negative mood) across the diary session were entered into the second model as dependent variables; and couple level sexual frequency across the diary session was entered into the third model as dependent variables and mean square value of each effect instead of the Hotelling's Trace were reported in this model.  $F$ -value<sup>c</sup>, value from  $F$  distribution;  $\eta^2$ , multivariate partial variance. A\_, actor effect; P\_, partner effect; F\_, female effect; M\_, male effect.

Table 4  
*Descriptive Information for Variables Used in This Study Broken Down by Gender*

Variables	Female		Male		t.	d.	r.
	M	SD	M	SD			
Body Satisfaction	3.92	1.33	4.11	1.15	-1.47	0.15	.17*
Satisfaction with Partner's Body	5.07	.96	5.29	.93	-2.23*	0.23	.21*
Sexual Quality	5.59	1.08	5.73	.90	-2.94**	0.14	.36**
Negative Mood during Sex	1.11	.37	1.06	.28	2.99**	0.15	.12

*Note.* N = 144 couples. t = significance of the mean difference between female and male reports. d = effect size of t-value. r = correlation between female and male reports.

\*  $p < .05$ . \*\*  $p < .01$ .

Table 5  
*Predicting Actor's Sexual Outcomes from Actor and Partner's Body Satisfaction Variables and Gender Interactions*

	Actor's outcomes			
	Sexual Quality		Negative Mood	
	<u>B</u>	<u>B<sup>a</sup></u>	<u>B</u>	<u>B<sup>a</sup></u>
<b>Actor Effect</b>				
Body satisfaction	.082*	.013	-.025*	-.009
Satisfaction with partner's body	.232***	.231***	-.023 <sup>+</sup>	-.021 <sup>+</sup>
<b>Partner Effect</b>				
Body satisfaction	-.021	-.103*	.004	.008
Satisfaction with actor's body	.094* <sup>G</sup>	.084 <sup>+</sup> <sup>G</sup>	-.005	-.003

*Note.* N = 144 couples. B – Standardized coefficients of each predictor; B<sup>a</sup> – Standardized coefficients of each predictor when other two predictors were controlled; <sup>G</sup> – Significantly moderated by gender. <sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*\*  $p < .001$

Table 6  
*Predicting Sexual Outcomes from Within-Person and Cross-Partner Interactions*

	Actor's Outcomes		Couple's
	Quality	Negative Mood	Intercourse Freq.
	<u>B</u>	<u>B</u>	<u>B</u>
<b>Actor Effect</b>			
Body satisfaction X Satisfaction with partner's body	.043	-.062 <sup>+</sup>	.134*
<b>Partner Effect</b>			
Body satisfaction X Satisfaction with actor's body	-.016	-.024 <sup>G</sup>	N.A.
<b>Cross-Partner Effect</b>			
Actor body satisfaction X Partner body satisfaction	-.057	.010	.121
Actor satisfaction with partner's body X Partner satisfaction with actor's body	-.005	-.061	.087

*Note.* N = 144 couples. B – Standardized coefficients of each predictor. <sup>G</sup> – Significantly moderated by gender. N.A., not applicable because model comparison results suggested no gender difference and an average (across men and women) effect was reported as actor effect.  
<sup>+</sup>  $p < .10$ . \*  $p < .05$

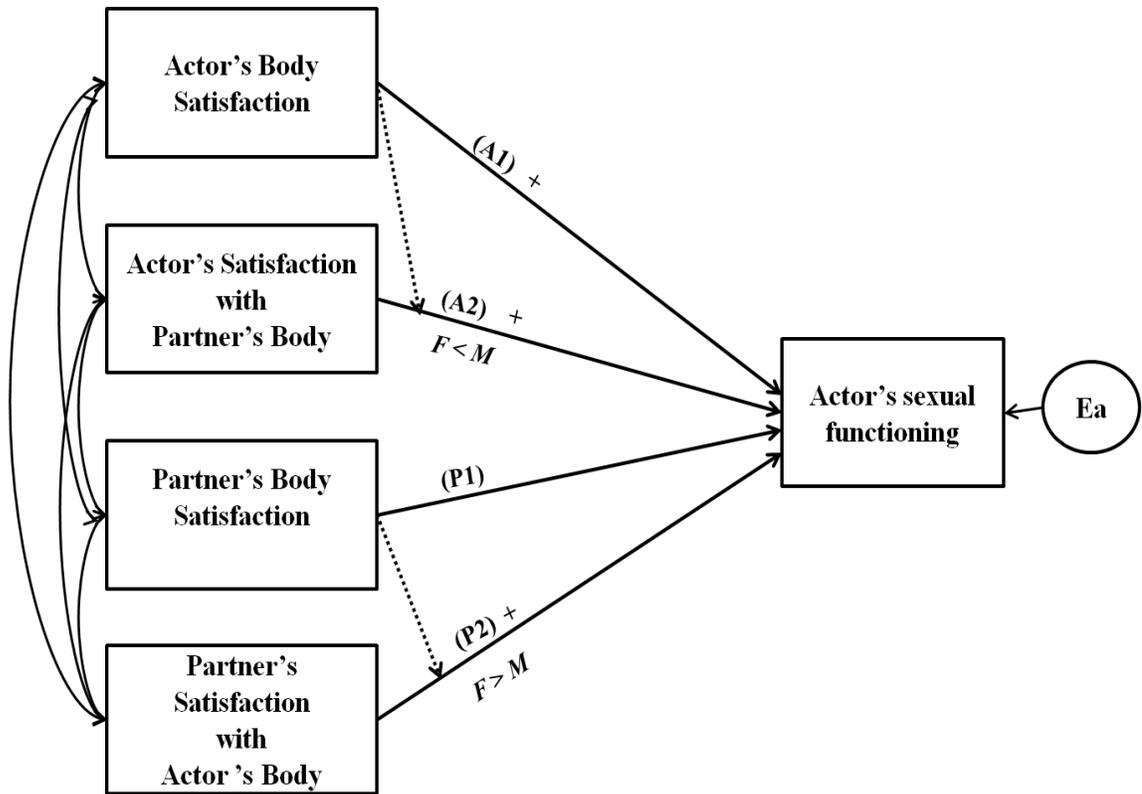


Figure 1. The hypothesized model of predicting sexual functioning from partners' body satisfaction and satisfaction with partner's body in APIM. Dash lines indicate interactions. A, actor effect. P, partner effect. F, female actor. M, male actor. +, positive prediction. -, negative prediction.

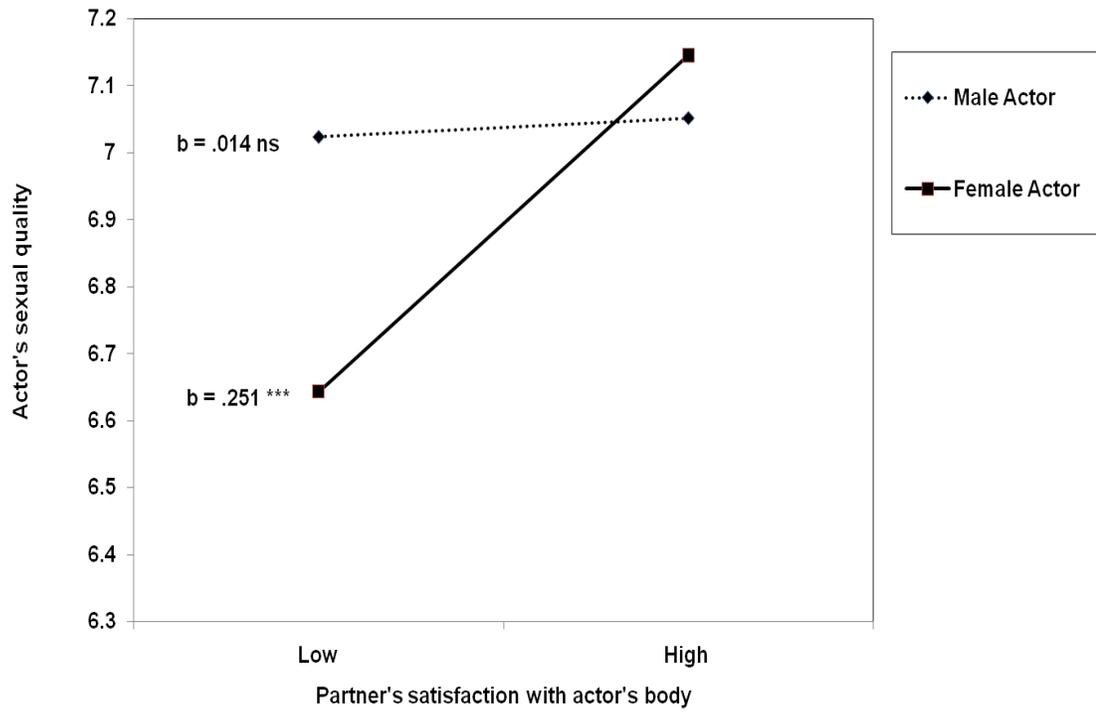


Figure 2. Gender interaction in the influence of partner's satisfaction with actor's body attractiveness on actor's sexual quality. ns, not significant; \*\*\*  $p < .001$ .

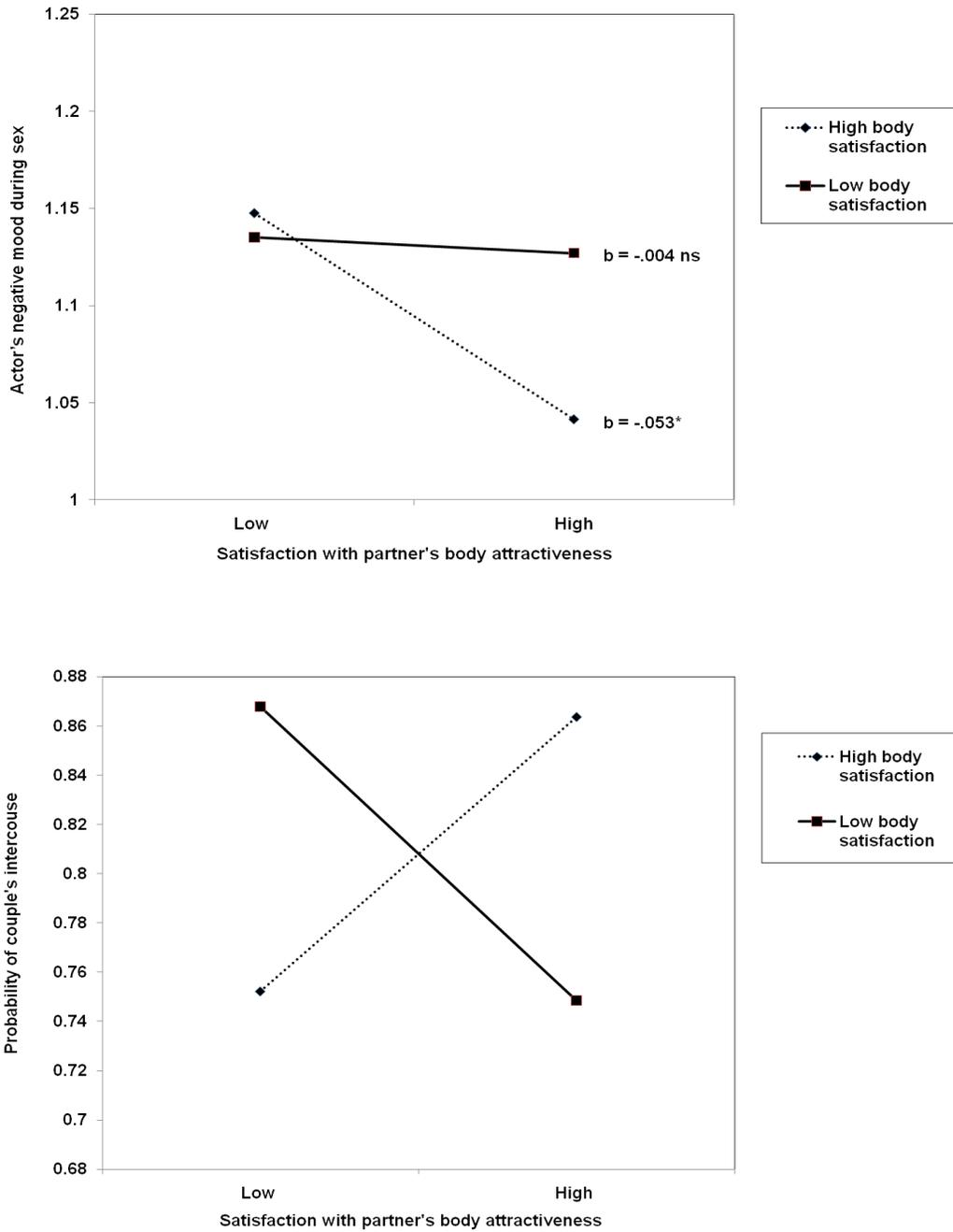


Figure 3. Actor's body satisfaction X actor's satisfaction with partner's body predicting actor's negative mood during sex and couple's intercourse probability. ns, not significant; \*  $p < .05$ .

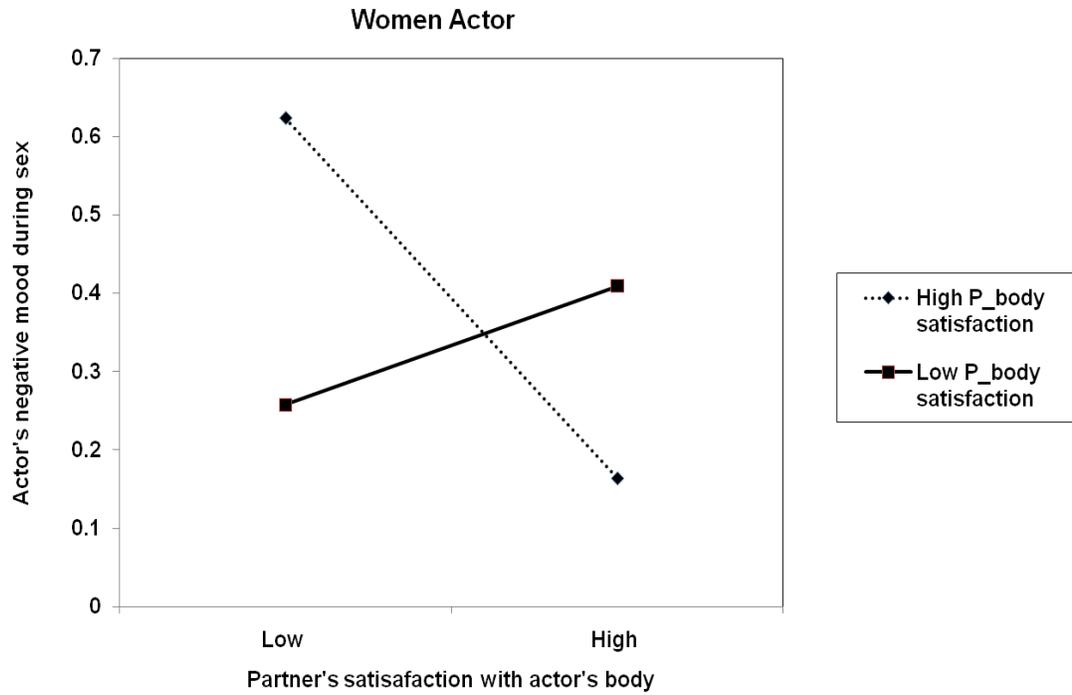


Figure 4. Gender difference in partner's body satisfaction X partner's satisfaction with actor's body predicting female actor's negative mood during sex.

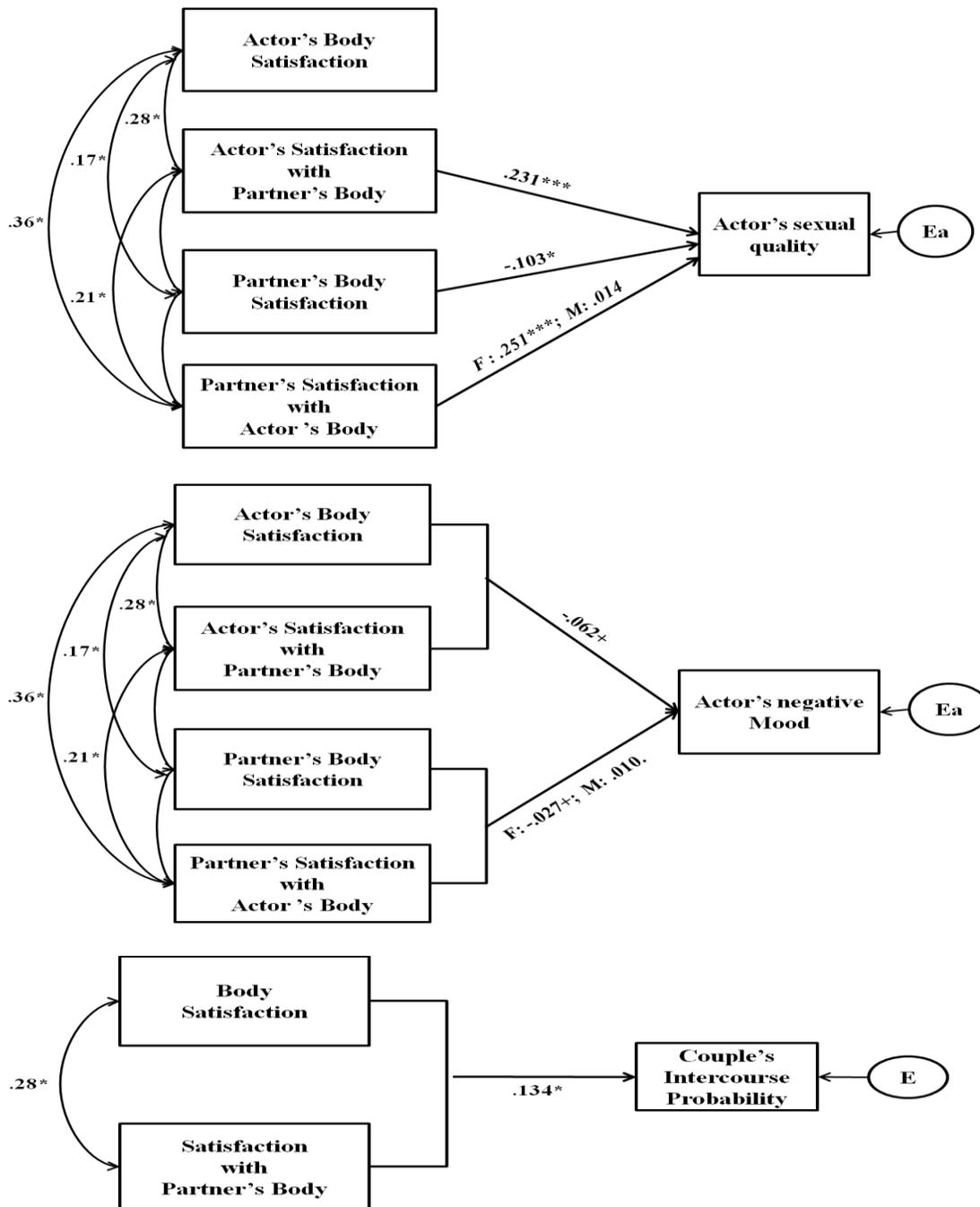


Figure 5. Schematic summary of models of predicting sexual functioning from body satisfaction, satisfaction with partner's body and interactions. Unstandardized coefficients were reported for gender effects whereas standardized coefficients were reported for other effects. Main effects coefficients were reported in the top figure, interactions coefficients were reported in the middle and bottom figures. Correlations were computed at individual level and the identical symmetric correlations were reported only once. F, female actor. M, male actor.  $^+ p < .10$ .  $^* p < .05$ .  $^{***} p < .001$ .

**Appendix A**

Body Satisfaction Items Included in the Current Study

*Self-Description Questionnaire III [SDQ-III] (Marsh & O'Neill, 1984) and Self-Image*

*Scale for Young Adolescents (Peterson, Schulenberg, Abramowitz, Offer, & Jarcho, 1984)*

- 1 I have a good body build (M).
- 2 I have a good figure (F).
- 3 My weight is about right -- not too fat or too skinny.
- 4 I am proud of my body.

**Appendix B**

Satisfaction with Partner's Body Attractiveness Items Included in the Current Study

1- Not at all; 5- Extremely;

- 1 My partner has a good body build (F).
- 2 My partner has a good figure (M).
- 3 My partner's weight is about right --not too fat or too skinny.
- 4 I am proud of my partner's body.

## Appendix C

### Daily Sexual Functioning Items

#### *Sexual Satisfaction*

1=not at all; 10= very much;

1. How satisfied were you overall with the PHYSICAL experience?
2. How satisfied were you overall with the EMOTIONAL experience?

#### *Sexual Mood*

1= not at all; 5=very much;

The next questions ask what you were feeling WHILE you were having sex with your partner.

1. Exited (Ar)
2. In love (In)
3. Alone/ Alienated (Neg)
4. Close to partner (In)
5. Unhappy (Neg)
6. Aroused (Ar)
7. Passionate (Ar)
8. Sad (Neg)
9. Affectionate/Tender (In)

Ar — Arousal subscale; In – Intimacy subscale; Neg – Negative Mood subscale.

#### *Sexual Frequency*

During this sexual experience did you have:

1. Vaginal intercourse

2. Anal intercourse
3. Both
4. Neither

## **VITA**

Ruixue Zhaoyang was born in Kunming, China, as the only child in her family. She went to the University of Nankai, Tianjin, in 2002 and obtained a B.S. in psychology in 2006 a M.A. in psychology in 2008. She came to the US to continue her study in social psychology in the University of Missouri-Columbia. She is currently a third year doctoral student in the Psychological Sciences Department and plans to get her Ph. D degree in social psychology in 2013. She enjoys travelling, hiking, music, outdoor sports and hanging out with friends.