

Women Like Being Valued for Sex, as Long as it is by a Committed Partner

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Abstract How do women respond to being valued for sex by their partners? Although research supporting objectification theory suggests that women's reactions to sexual valuation are primarily negative, a separate body of research indicates that women expend significant effort to enhance their sexual appeal. Evolutionary perspectives suggest that whether women are more or less satisfied with partners who value them for sex may depend on how committed those partners are. Being sexually valued by a relatively uncommitted partner may violate women's desire to avoid short-term sexual relationships and thus may be negatively associated with relationship satisfaction. In contrast, being sexually valued by a highly committed partner may positively influence women's relationship satisfaction because it signals to them that they have successfully attracted a long-term relationship partner. Two studies of newly married couples supported these predictions. In Study 1 ($N = 109$), husbands' sexual valuation was positively associated with marital satisfaction among wives who perceived that those husbands were highly committed, but negatively associated with marital satisfaction among wives who perceived that those husbands were relatively less committed. Study 2 ($N = 99$) revealed the same pattern for wives (but not husbands) using a likely manifestation of sexual valuation—engaging in frequent sex. These findings join others to demonstrate that interpersonal processes do not have universally positive or negative implications for relationships; rather, their implications depend on the context in which they occur, including contexts that were reproductively beneficial or costly throughout evolutionary history.

Keywords Sex · Intimate relationships · Commitment · Evolutionary psychology · Women · Marriage

Introduction

It is quite common for women to be valued for their sexuality by men. Beginning in grade school, young girls experience evaluative gazes, comments about their bodies, and sexually suggestive touches from their male peers (Murnen & Smolak, 2000). These behaviors increase in frequency and variety through adolescence (Bryant, 1993; Roscoe, Strouse, & Goodwin, 1994) and persist through college (Benson & Thompson, 1982; Hill & Silva, 2005) and into adulthood (Fitzgerald et al., 1988; Fredrickson & Roberts, 1997).

Given that sex is a defining feature of intimate relationships (Acker & Davis, 1992; Baumeister & Bratslavsky, 1999), it is not surprising that such sexual valuation also occurs in the context of women's intimate relationships. Indeed, not only do men report valuing sex and sexuality in a partner (Fletcher, Simpson, Thomas, & Giles, 1999), but sexual frequency and sexual attractiveness are positively associated with men's relationship satisfaction (McNulty & Fisher, 2008; Meltzer, McNulty, Jackson, & Karney, 2014a). Further, in some research, men explicitly report valuing their partner for her sexuality (Zurbriggen, Ramsey, & Jaworski, 2011).

How do women respond to being valued for sex by their intimate relationship partners? Research supporting objectification theory (Bartky, 1990; Fredrickson & Roberts, 1997; Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; Moradi & Huang, 2008; Myers & Crowther, 2008; Tolman, Impett, Tracy, & Michael, 2006; Tylka & Hill, 2004) suggests that women's responses to sexual valuation are primarily negative. Although objectification technically refers to valuing a woman more for the physical aspects of her body (e.g., appearance) than the functional aspects of her

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body (e.g., strength), some studies supporting this theory have specifically examined the implications of valuing women for their sexuality. For example, research indicates that receiving sexual comments and attention from men leads women to experience increased levels of body shame and body surveillance (Fairchild & Rudman, 2008). Likewise, merely anticipating sexual valuation from a man can lead women to experience increased levels of body shame and anxiety (Calogero, 2004). Based on this literature, one may conclude that women are likely to respond negatively to being sexually valued by their relationship partners.

However, a separate theory—the object of desire self-consciousness theory (Bogaert & Brotto, 2014)—posits that women can benefit, including developing adaptive sexual scripts and positive emotions, from being sexually valued by men. Consistent with this theory, women use a variety of cosmetics, accessories, and clothing to enhance their sexuality (Buss, 1988; Walters & Crawford, 1994). Further, nearly 1.7 million American women each year go to the extreme of undergoing costly and sometimes painful cosmetic surgical procedures to enhance their sexuality (American Society of Plastic Surgeons, 2014). Although heterosexual women may enhance their sex appeal for various reasons, one ultimate goal of such behaviors is attracting and maintaining relationships with desirable male partners (Hill, Rodeheffer, Griskevicius, Durante, & White, 2012; Leary, Tchividjian, & Kraxberger, 1994; Legenbauer et al., 2009; Meltzer & McNulty, 2015; Mori, Chaiken, & Pliner, 1987). Accordingly, the extent to which women are sexually valued by their intimate partners should signal that they have successfully attracted those partners, which should lead to feelings of contentment and satisfaction (e.g., see McNulty, Neff, & Karney, 2008; Meltzer & McNulty, 2010; Meltzer, McNulty, Novak, Butler, & Karney, 2011).

How can we reconcile these two bodies of research? One way is by considering the commitment level of the men doing the sexual valuing. Most research studies demonstrating the harmful effects of female sexual valuation have examined the implications of sexual valuation by male strangers and acquaintances—men who are not committed to a long-term relationship. Given that sexual valuation should signal a man's interest in pursuing a sexual relationship (see Bogaert & Brotto, 2014), sexual valuation in the absence of long-term commitment may create anxiety and other undesirable emotions because it violates women's preference to avoid casual sex and short-term relationships (Buss, 1989; Buss & Schmitt, 1993; Clark & Hatfield, 1989). Indeed, in a classic study, Clark and Hatfield (1989) demonstrated that 100 % of women *rejected* the offer of sex with a male stranger (see also Clark, 1990; Clark & Hatfield, 2003).

In contrast, research demonstrating that women seek sexual valuation in order to attract potential romantic relationship partners indicates that women do so in an effort to attract

partners who will be committed to long-term relationships. For example, Hill et al. (2012) demonstrated that women's increased motivation to attract a long-term partner predicted their motivation to purchase products that enhanced their sexuality. Accordingly, sexual valuation may lead to feelings of satisfaction and contentment only when it is aligned with its ultimate goal—that is, when it comes from men who are committed to long-term relationships.

The idea that women's responses to sexual valuation may depend on the commitment level of the partner can be understood from an evolutionary perspective. Parental investment theory (Trivers, 1972, 1985) posits that women tend to avoid short-term sexual encounters due to their high level of initial obligatory parental investment (i.e., at minimum, 9 months incubating the offspring). Such investment requires considerable time, effort, and energy, so women have evolved to prefer long-term committed relationships, which carry the large benefit of biparental care for offspring. Thus, the tendency for women to respond negatively to sexual valuation by male strangers and acquaintances may reflect adaptations that helped them avoid short-term sexual relationships. Ancestral women who tended to react positively to sexual valuation by strangers and otherwise uncommitted men would have been more likely to form short-term sexual relationships, which would have had negative consequences for themselves and their offspring (e.g., lack of additional resources for child rearing).

But women would not have benefitted from responding negatively to all sexual valuation. As noted earlier, sexual valuation by men should indicate a greater likelihood of sexual intercourse (see Bogaert & Brotto, 2014). Although sex in the context of uncommitted relationships may have been maladaptive for ancestral women, sex in the context of committed long-term relationships was essential for reproduction. Indeed, long-term relationships are beneficial to human reproduction not only because they allow for necessary biparental care (Trivers, 1972, 1985), but also because they allow for numerous acts of sexual intercourse with a partner, which was likely necessary for reproduction (Wilcox, Weinberg, & Baird, 1995). Thus, although women may have evolved to respond negatively to sexual valuation by men who were not committed to long-term relationships, they should have evolved to respond positively to sexual valuation by men who were committed to long-term relationships.

One recent line of research provides evidence consistent with this prediction. Meltzer and McNulty (2014) demonstrated that physical valuation by a committed male partner was positively associated with women's relationship satisfaction only when that partner valued them for their non-physical qualities and was committed; physical valuation was negatively associated with women's relationship satisfaction when that partner did not value them for their non-physical qualities or was not committed. To the extent that women perceive physical valuation as a precursor to sexual valuation, sexual valuation may have similar implications.

Overview of the Current Studies

We conducted two studies to examine the interactive effects of sexual valuation and perceived commitment on married women's relationship satisfaction. We examined effects on relationship satisfaction, in particular, because our predictions were derived from the idea that women are motivated to form and maintain reproductively advantageous relationships into the long term, and relationship satisfaction is one of the strongest predictors of forming and staying in a long-term relationship (Karney & Bradbury, 1995; Kelley & Thibaut, 1978; Rusbult, 1980; Stanley & Markman, 1992; for a related discussion, see Meltzer, McNulty, Jackson, & Karney, 2014b; Shackelford & Buss, 1997). We examined these effects among married women not because we expected the effect to be unique to married women but because using samples of married couples helps ensure participants are involved in long-term rather than short-term relationships (see Meltzer et al., 2014b). Although women generally prefer long-term relationships to short-term relationships, they do not universally avoid short-term relationships. In fact, several theoretical perspectives (Gangestad & Simpson, 2000; Pillsworth & Haselton, 2006) suggest that there were certain circumstances (e.g., ovulation) during which it would have been adaptive for ancestral women to seek out short-term sexual encounters. When women are specifically pursuing short-term relationships, their reactions to sexual valuation may not be moderated by commitment. Moreover, given that sexual frequency and sexual valuation decline drastically after the first year of marriage (see Call, Sprecher, & Schwartz, 1995; McNulty, Wenner, & Fisher, 2014), studying new marriages provides a way to maximize the possibility of capturing high levels of partner sexual valuation.

Study 1

In Study 1, newlywed husbands reported the extent to which they sexually valued their wives; wives reported the extent to which they believed their husbands were committed to long-term relationships with them and their own marital satisfaction. Analyses tested the hypothesis that wives' perceptions of their husbands' long-term commitment would moderate the link between their husbands' sexual valuation and their marital satisfaction.

Method

Participants

Participants were 113 first-married newlywed couples. All participants were recruited through invitations sent to eligible couples who had applied for marriage licenses in the county of the study location (in north Texas). A total of 389 couples responded to the invitation and were screened in a telephone

interview to ensure they met the following criteria, given the broader goals of the study: (1) they had been married for less than 4 months, and both partners could attend a laboratory session within the first 4 months of their marriage; (2) neither partner had been previously married; (3) they were at least 18 years of age; and (4) they spoke English (to ensure questionnaire comprehension). A total of 159 couples did not meet the eligibility criteria. Of the 113 couples who participated, four couples failed to provide complete and usable data; thus, the final sample consisted of 109 couples.

Husbands were 28.06 years old ($SD = 5.59$) and had completed 16.30 years of education ($SD = 2.74$), on average; 77 % were employed full time and 15 % were full-time students. The wives were 26.76 years old ($SD = 4.76$) and had completed 16.83 years of education ($SD = 2.81$), on average; 57 % were employed full time and 14 % were full-time students. The sample was quite diverse, relative to other samples (see Karney, Kreitz, & Sweeney, 2004). Fifty-two (44.8 %) husbands and 52 (44.8 %) wives identified as Caucasian; 30 (25.9 %) husbands and 27 (23.3 %) wives identified as African-American; 18 (15.5 %) husbands and 19 (16.4 %) wives identified as Latino/a; and 8 (7.4 %) husbands and 10 (9.3 %) wives identified as "Other" race.

Procedure

Following recruitment, couples completed a battery of questionnaires online at Qualtrics.com or through the mail. Husbands' questionnaires included measures of sexual valuation, body valuation, non-physical valuation, and marital satisfaction, and wives' questionnaires included a measure of perceived partner commitment and marital satisfaction. Both packets included additional questionnaires beyond the scope of the current study, as well as a letter instructing couples to complete their questionnaires independently. After completing these measures at home, couples attended a laboratory session where wives had their photographs taken and husbands rated the attractiveness of their wives in those photographs (to assess and control partner-perceived physical attractiveness), and where both spouses participated in tasks beyond the scope of the current analyses. Couples were paid \$100 for participating.

Measures

Husbands' Sexual Valuation In the absence of any existing measures of the extent to which husbands sexually value their wives, we developed a face-valid item to assess husbands' sexual valuation. Specifically, we asked husbands to answer the question: "Sex is important to many romantic relationships. On a scale of 0–100, where 0 = *our relationship is completely non-sexual* and 100 = *our relationship is nothing but sexual*, what number would you give your relationship?"—where higher scores indicated higher levels of partner sexual valuation.

Perceptions of Husbands' Commitment Given that our predictions focused on the different reactions women might have to sexual valuation from partners who they perceived as being more versus less committed to long-term relationships, we assessed women's perceptions of their partners' commitment to a long-term relationship using a modified version of the Commitment Inventory (Stanley & Markman, 1992). Whereas the original scale asked individuals about their own levels of commitment, we modified the 60 items to assess wives' perceptions of their husbands' commitment. Sample items included, "My partner wants to grow old with me" and "My partner may not want to be with me a few years from now" (reverse-scored). Wives indicated the extent to which they believed their husbands agreed with each statement on a 7-point scale, where 1 = *strongly disagree* and 7 = *strongly agree*. After reverse-scoring the necessary items, we averaged all items to form an index of wives' perceived partner commitment ($\alpha = .94$).

Marital Satisfaction We assessed wives' global relationship satisfaction using the Quality Marriage Index (QMI; Norton, 1983). As reported by Norton, the QMI is a desirable measure of marital evaluation because the items are reliable, valid, and sufficiently global, which provides conceptual independence from items that may be examined as possible correlates of marital satisfaction. Indeed, during instrument development, the average item–total correlation was .76, and the total score was related as expected to measures of commitment and partners' attitude similarity. This measure required wives to indicate the extent to which they agreed or disagreed with six general statements regarding the quality of their marriage. Five items required wives to respond according to a seven-point scale, whereas one item required wives to respond according to a 10-point scale. Thus, scores could range from 6 to 45, where higher scores reflect more positive marital satisfaction. Internal consistency of this measure was high ($\alpha = .93$).

Covariates Given that husbands' marital satisfaction tends to be strongly associated with wives' marital satisfaction (McNulty & Russell, 2010) and may also be linked to husbands' sexual valuation and the extent to which they are committed to the relationship, we assessed husbands' marital satisfaction (also using the QMI; $\alpha = .92$) and controlled it in a supplemental analysis. In addition, to ensure that any effects emerge independent of and were not further moderated by the extent to which husbands value their wives for their non-physical qualities, as were the effects of physical valuation reported by Meltzer and McNulty (2014), we assessed the extent to which husbands valued their wives for their non-physical qualities. Specifically, husbands reported the extent to which they valued their wives for their intelligence, fun, creativity, ambition, kindness, generosity, patience, career success, trustworthiness, ability to solve problems, humor, loyalty, and supportiveness, on a scale ranging from 0 to 100, where 0 = *not at all*

and 100 = *completely* ($\alpha = .85$). Responses were averaged to form an index of non-physical valuation. One husband did not provide usable data. Moreover, to ensure that any effects emerge independent of the extent to which husbands value their wives' appearance (see Meltzer & McNulty, 2014), we also assessed (1) the extent to which husbands valued their wives for their bodies and (2) husbands' perceptions of their wives' attractiveness and controlled these variables in a supplemental analysis. To assess body valuation, we asked husbands to answer the following question: "On a scale of 0–100, where 0 = *not at all* and 100 = *completely*, how much do you value your wife for her body?" To assess husbands' perceptions of physical attractiveness, when couples reported to the laboratory, we took four photographs of each wife (one of their head and shoulders, one of their profile, one of their full body while standing, and one of their full body while sitting) and husbands rated each photo for the extent to which they perceived their wife to be attractive on a 10-point scale, where 1 = *not at all attractive* and 10 = *extremely attractive*. These four ratings were averaged to form an index of the extent to which husbands valued their wives' physical attractiveness ($\alpha = .86$).

Results

Descriptive Statistics and Preliminary Analyses

Descriptive statistics and correlations are shown in Table 1. Both husbands and wives reported relatively high levels of marital satisfaction, on average. Second, wives also reported relatively high confidence that their husbands were committed to long-term relationships, on average. Nevertheless, the standard deviations indicated variability in reports of satisfaction and commitment. Third, husbands reported moderately high levels of sexual valuation, but there was substantial variability in those reports as well. Fourth, husbands' and wives' reports of marital satisfaction were positively associated with one another, confirming that husbands' marital satisfaction should be controlled. Fifth, not surprisingly, wives' perceptions of husbands' commitment were positively correlated with husbands' and wives' marital satisfaction. Finally, husbands perceived their wives as relatively high in attractiveness and reported moderately high levels of body valuation and non-physical valuation. Notably, all three of these ratings were positively associated with husbands' sexual valuation, suggesting they should be controlled in a supplementary analysis to demonstrate that any effects of sexual valuation emerge independently of husbands' valuation of wives' appearance.

Effects of Husbands' Sexual Valuation and Wives' Perceived Partner Commitment on Wives' Marital Satisfaction

We predicted that wives' perceived partner commitment would moderate the link between husbands' sexual valuation and wives' marital satisfaction. To test this prediction, we conducted two regression analyses—one in which we controlled husbands'

Table 1 Descriptive statistics and correlations for Study 1

	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
1. Husbands' sexual valuation	–							66.12 ^a	25.43
2. Wives' perceived commitment	–.03	–						5.61 ^b	0.67
3. Wives' marital satisfaction	–.07	.38***	–					41.58 ^c	4.47
4. Husbands' marital satisfaction	–.07	.33***	.51***	–				41.24 ^c	4.99
5. Husbands' non-physical valuation	.22*	.19 [†]	–.10	–.23*	–			90.18 ^a	40.55
6. Husbands' ratings of wives' attractiveness	.21*	.22	.11	.17 [†]	.23*	–		8.95 ^d	1.33
7. Husbands' body valuation	.37***	.18 [†]	–.10	–.08	.18*	.24*	–	72.13 ^a	28.26

N = 109

[†] $p < .10$; * $p < .05$; *** $p < .001$

^a Scores can range from 0 to 100

^b Scores can range from 1 to 7

^c Scores can range from 6 to 45

^d Scores can range from 1 to 10

satisfaction and one in which we did not. Specifically, we regressed wives' marital satisfaction onto the mean-centered score of husbands' sexual valuation, the mean-centered score of wives' perceived commitment, and the Sexual Valuation \times Partner Commitment interaction, not controlling (Model 1) and controlling (Model 2) for the mean-centered score of husbands' marital satisfaction. Results are shown in Table 2. As can be seen, the Sexual Valuation \times Partner Commitment interaction emerged as significant in Model 1 and marginally significant in Model 2.

To view the nature of the 2-way interaction (Model 1), we decomposed it by plotting the predicted means for individuals 1 *SD* above and below the mean on each variable involved in the interaction (see Fig. 1). To determine the statistical significance of each of these simple slopes, we followed the recommendations and instructions described by Preacher, Curran, and Bauer (2006) to use the Johnson–Neyman method (Johnson & Neyman, 1936) to identify the regions of significance of the simple effects of husbands' sexual valuation—i.e., the exact levels of wives' perceived commitment at which husbands' sexual valuation was associated with wives' marital satisfaction. Consistent with predictions, husbands' sexual valuation was negatively associated with marital satisfaction among women who perceived that their husbands were more than 0.42 *SDs* less committed than the mean, but positively associated with satisfaction among women who perceived that their partners were more than 1.47 *SDs* more committed than the mean.

We also conducted several additional analyses to examine the robustness of this interactive effect. Two subsequent analyses revealed that the two-way interaction in Model 1 (1) remained significant when we controlled the mean-centered score of husbands' non-physical valuation and the Non-Physical Valuation \times Sexual Valuation interaction, $b = 0.06$, $SE = 0.03$, $t(102) = 2.31$, $p = .014$, effect size $r = .22$, and (2) emerged as marginally significant when we controlled the mean-centered scores of husbands' body valuation and ratings of wives' attractiveness and the

Table 2 Study 1: Associations of husbands' sexual valuation and wives' perceived partner commitment on wives' marital satisfaction

	Marital satisfaction		
	<i>b</i>	<i>SE</i>	Effect size <i>r</i>
Model 1 ^a			
Intercept	41.61	0.39	
Husbands' sexual valuation (SV)	–0.01	0.02	.08
Wives' perceived partner commitment (C)	2.36***	0.59	.36
SV \times C	0.06*	0.02	.23
Model 2 ^b			
Intercept	41.60	0.36	
Husbands' marital satisfaction	0.36***	0.08	.42
Husbands' sexual valuation (SV)	–0.01	0.01	.06
Wives' perceived partner commitment (C)	1.52**	0.57	.25
SV \times C	0.04 [†]	0.02	.19

Effect size $r = \sqrt{\frac{f^2}{f^2 + df}}$

[†] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

^a *dfs* = 105

^b *dfs* = 104

Body Valuation \times Partner Commitment and Attractiveness \times Partner Commitment interactions, $b = 0.05$, $SE = 0.03$, $t(99) = 1.67$, $p = .099$, effect size $r = .17$, indicating that the extent to which husbands' sexual valuation and wives' perceptions of husbands' commitment predicted wives' satisfaction was independent of the extent to which those husbands valued their wives for their non-physical qualities, bodies, and physical attractiveness. Moreover, two subsequent tests of the Non-Physical Valuation \times Partner Commitment interaction in Model 1 revealed that the effects of non-physical valuation for women's marital satisfaction did not depend on wives' perceptions of their husbands' com-

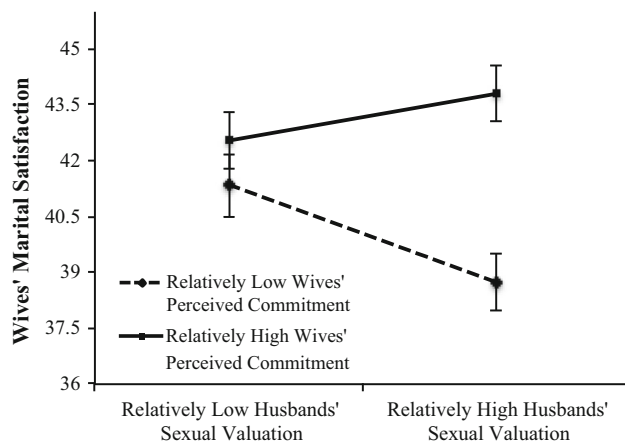


Fig. 1 Study 1: Interactive effects of husbands' sexual valuation and wives' perceived partner commitment on wives' marital satisfaction

mitment, $b = -0.01$, $SE = 0.02$, $t(104) = 0.52$, and the Sexual Valuation \times Partner Commitment interaction remained significant even with this interaction in the model, $b = 0.06$, $SE = 0.03$, $t(102) = 2.36$, $p = 0.02$, effect size $r = .23$, suggesting that the positive effects of partner valuation in the context of a committed relationship were unique to sex and could not be generalized to non-physical qualities. In addition, a test of the Non-Physical Valuation \times Sexual Valuation \times Partner Commitment interaction in Model 1 (and all relevant main effects and two-way interactions) indicated the extent to which husbands' sexual valuation and wives' perceptions of husbands' commitment predicted wives' satisfaction was not further moderated by the extent to which husbands also valued their wives for their non-physical qualities, $b = -0.00$, $SE = 0.00$, $t(100) = -0.41$. Finally, adding a test of the Sexual Valuation \times Partner Commitment \times Race (where $0 = \text{White}$ and $1 = \text{non-White}$) interaction to Model 1 (and all relevant main effects and two-way interactions) indicated this effect was not further moderated by wives' race, $b = 0.00$, $SE = 0.05$, $t(101) = 0.04$.

Discussion

Study 1 provided evidence that wives' perceptions of their husbands' long-term commitment moderated the association between those husbands' sexual valuation and wives' marital satisfaction. Wives who perceived that their husbands were relatively less committed were less satisfied with their marriages to the extent that those husbands valued them for sex; wives who perceived that their husbands were relatively more committed, in contrast, were more satisfied with their marriages to the extent that those husbands valued them for sex. Importantly, this interactive effect of husbands' sexual valuation and wives' perceived commitment emerged independently of the extent to which those husbands were satisfied and also valued their wives for their physical appearance and non-physical qualities, suggesting it was due to valuing wives

for sex specifically, rather than valuing them for their appearance more generally.

Study 2

We attempted to extend these findings in two important ways. First, we examined whether the interactive effects of sexual valuation and perceived commitment on women's relationship satisfaction translated into interactive effects of couples' sexual behavior and perceived commitment on women's relationship satisfaction. The proximate and ultimate causes that guided the hypothesis were based on the notion that (1) sexual valuation would have these interactive implications because it would result in frequent sex and (2) frequent sex would have been adaptive in the context of a committed relationship but maladaptive in the context of a less committed relationship. Accordingly, one way to provide some evidence for this perspective, and an important way to extend these findings, was to examine whether the frequency with which couples engaged in sex within their relationships had similar implications for women's relationship satisfaction. That is, frequent sex with committed long-term partners may be positively associated with women's relationship satisfaction, whereas frequent sex with relatively less committed partners may be negatively associated with women's relationship satisfaction. Such an interaction would explain why sexual frequency sometimes fails to exert main effects on women's relationship satisfaction (e.g., McNulty & Fisher, 2008).

Second, we also examined potential sex differences in this interactive effect. The evolutionary perspectives that suggest an interactive effect of partner sexual valuation and perceived partner commitment on women's relationship satisfaction do not necessarily suggest such an interactive effect should emerge among men. Given that ancestral men did not face the same disadvantages associated with short-term mating, they may not experience negative implications of sexual valuation even when they perceive that their partners are relatively low in commitment. Although we did not assess wives' reports of the extent to which they valued their husbands for sex in Study 1, which prevented us from testing this sex difference, we were able to examine the implications of couples' sexual frequency and husbands' perceptions of wives' commitment for husbands' marital satisfaction in Study 2.

Method

Participants

Participants were drawn from a study of 108 newlywed couples. We recruited couples for the broader study using three methods. First, we sent letters to eligible couples who had applied for marriage licenses in counties near the study location (in north-west Florida). Second, we placed fliers around the university and

town in which the study was conducted. Third, we placed an advertisement on Facebook that specifically targeted engaged couples living in the town in which the study was conducted. A total of 194 couples responded to the solicitations and were screened for eligibility in an initial telephone interview. Given broader goals of the study, inclusion required that (1) the couple had been married less than 3 months and both partners could attend a laboratory session within the first 3 months of their marriage, (2) each partner was at least 18 years of age, and (3) each partner spoke English and had completed at least 10 years of education (to ensure comprehension of the questionnaires). Thirteen couples did not meet the eligibility criteria. Of the 108 couples who participated, neither member of 9 couples reported their sexual frequency, leaving a final sample of 99 couples.

Husbands were, on average, 33.07 years old ($SD = 10.46$); 57.1 % had earned a Bachelor's degree and 25.5 % had earned a graduate degree; 69.4 % were employed full time and 19.4 % were full-time students. Husbands' mean income was \$31,114 ($SD = 25,853$). Wives were, on average, 31.03 years old ($SD = 8.74$); 69.4 % had earned a Bachelor's degree and 29.6 % had earned a graduate degree; 65.3 % were employed full time and 19.4 % were full-time students. Wives' mean income was \$33,340 ($SD = 54,575$) per year. Though this sample was not as diverse as the one used in Study 2, it was also relatively diverse. The majority of husbands were White (74.4 %), although a substantial proportion comprised Black/African American (15.3 %); the remainder were Latino (3.1 %), American Indian/Alaska Native (1.0 %), Asian (1.0 %), biracial/multiple races (2.0 %), or 'other race' (3.1 %). The majority of wives were also White (76.5 %), although a substantial proportion comprised Black/African American (13.3 %); the remainder were Latina (4.1 %), Asian (1.0 %), or biracial/multiple races (5.1 %).

Procedure

Couples completed a battery of questionnaires online at Qualtrics.com or through the mail and subsequently attended a laboratory session that involved tasks beyond the scope of the current analyses (e.g., implicit and behavioral measures). The questionnaires included measures of sexual frequency, perceptions of partner commitment, and marital satisfaction. Couples were paid \$100 for completing the questionnaires and attending the session.

Measures

Perceptions of Partners' Commitment We assessed wives' and husbands' perceptions of their partners' long-term commitment using the same revised version of the Commitment Inventory (Stanley & Markman, 1992) used in Study 1. Internal

consistency was once again high (for wives, $\alpha = .93$; for husbands, $\alpha = .91$).

Frequency of Sexual Intercourse We asked both members of the couples to provide a numerical estimate of the number of times they had engaged in sexual intercourse with their spouse over the prior 4 months. Given that we had data on the same behavior reported by both members of the couple, we averaged the reports in an attempt to increase the validity of the estimate ($r = .70$). Results were virtually identical when each spouse's reports were used instead.

Marital Satisfaction To ensure that any effects of sexual valuation are not unique to a single measure of marital satisfaction, we assessed marital satisfaction using two measures. The first measure was the same measure used in Study 1, the QMI (Norton, 1983). The other measure was a version of the Semantic Differential (SMD; Osgood, Suci, & Tannenbaum, 1957), in which couples rated their perceptions of their relationship on 7-point scales between 15 pairs of opposing adjectives (e.g., "Dissatisfied–Satisfied"). Thus, scores could range from 15 to 105, where higher scores reflect more positive marital satisfaction. One husband failed to complete the SMD. Internal consistency of both measures was high (for wives' QMI, $\alpha = .88$; for wives' SMD, $\alpha = .92$; for husbands' QMI, $\alpha = .92$; for husbands' SMD, $\alpha = .94$).

Results

Descriptive Statistics and Preliminary Analyses

Descriptive statistics and correlations are shown in Table 3. As in Study 1, both husbands and wives reported relatively high levels of marital satisfaction, on average. Second, both husbands and wives reported relatively high confidence that their partners were committed to long-term relationships, on average. Nevertheless, the standard deviations indicated variability in reports of satisfaction and commitment. Third, couples reported having sex an average of almost 32 times over the prior 4 months, or approximately once every 4 days. Nevertheless, there was substantial variability in those reports as well. Fourth, as would be expected, the two measures of marital satisfaction were positively associated with one another among both husbands and wives. Fifth, as in Study 1, husbands' and wives' reports of marital satisfaction were positively associated with one another, again highlighting the need to examine whether any effects hold controlling partner satisfaction. In addition, husbands' and wives' perceptions of partner commitment were positively correlated with their own reports of marital satisfaction on both measures. Finally, sexual frequency was unrelated to both partners' satisfaction and perceptions of partner commitment, on average.

Table 3 Descriptive statistics and correlations for Study 2

	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
1. Sexual frequency	–							31.06	22.14
2. Wives' perceived commitment	.02	–						5.26 ^a	0.80
3. Wives' marital satisfaction (QMI)	–.12	.56***	–					42.29 ^b	4.10
4. Wives' marital satisfaction (SMD)	–.04	.57***	.88***	–				95.92 ^c	9.62
5. Husbands' perceived commitment	–.06	.35***	.40***	.37***	–			5.33 ^a	0.60
6. Husbands' marital satisfaction (QMI)	–.10	.33**	.63***	.60***	.51***	–		42.14 ^b	4.83
7. Husbands' marital satisfaction (SMD)	–.15	.26*	.52***	.52***	.48***	.84***	–	95.48 ^c	10.68

N = 99 for all variables except husbands' SMD, in which *N* = 98

QMI Quality Marriage Index measure, *SMD* Semantic Differential measure

* $p < .05$; ** $p < .01$; *** $p < .001$

^a Scores can range from 1 to 7

^b Scores can range from 6 to 45

^c Scores can range from 15 to 105

Effects of Sexual Frequency and Wives' Perceived Partner Commitment on Wives' Marital Satisfaction

We first attempted to replicate the findings of Study 1, using sexual frequency as an extension of sexual valuation. We predicted that wives' perceived partner commitment would moderate the link between couples' reports of sexual frequency and wives' marital satisfaction. To test this prediction, we conducted four regression analyses—two for each measure of wives' marital satisfaction, one of which controlled partner satisfaction and one of which did not. Specifically, we regressed wives' marital satisfaction onto the mean-centered score of couples' reports of sexual frequency, the mean-centered score of wives' perceived partner commitment, and the Sexual Frequency \times Partner Commitment interaction, not controlling (Model 1) and controlling (Model 2) for the corresponding mean-centered score of husbands' marital satisfaction. Results are shown in the top half of Table 4. As can be seen, the Sexual Frequency \times Partner Commitment interaction emerged as significant in all four analyses.

To view the nature of the 2-way interaction (Model 1), we decomposed it by plotting the predicted means for individuals 1 *SD* above and below the mean on each variable involved in the interaction (see Fig. 2, Panel A). Given that the effects were virtually identical for both measures of wives' marital satisfaction, and given that we presented the effects on the QMI in Study 1, we only present figures for the SMD measure for the sake of brevity. To determine the statistical significance of each simple slope, we once again followed the recommendations and instructions described by Preacher et al. (2006) to use the Johnson–Neyman method (Johnson & Neyman, 1936) to identify the regions of significance of the simple effects of husbands' sexual valuation. Consistent with predictions, sexual frequency was negatively associated with marital satisfaction among women who perceived that their husbands were relatively low in commitment (more than 0.09 *SDs* below the mean for the QMI; more than

0.48 *SDs* below the mean for the SMD), but positively associated with satisfaction among women who perceived that their partners were relatively high in commitment (more than 0.94 *SDs* above the mean for the QMI; more than 0.91 *SDs* above the mean for the SMD).

Of note, adding a test of the Sexual Valuation \times Partner Commitment \times Race (where 0 = White and 1 = non-White) interaction to Model 1 (and all relevant main effects and two-way interactions) indicated that the predicted Sexual Valuation \times Partner Commitment interaction effect was significantly stronger among non-White participants on the QMI, $b = 0.12$, $SE = .03$, $t(91) = 3.48$, $p = .001$, effect size $r = .34$, but not on the SMD, $b = 0.10$, $SE = 0.09$, $t(91) = 1.13$. In the absence of any theoretical reason to expect such a difference, and given that this interaction was not significant in Study 1 and was only significant using one of the marital satisfaction measures in this study, we attribute this trend to the fact that the variability in marital satisfaction was substantially less constrained among non-White participants (for QMI, $SD = 6.79$; for SMD, $SD = 14.32$) compared to White participants (for QMI, $SD = 2.66$; for SMD, $SD = 6.93$).

Effects of Sexual Frequency and Husbands' Perceived Partner Commitment on Husbands' Marital Satisfaction

Next, we examined whether similar effects emerged among husbands, expecting any implications of sexual frequency for husbands' marital satisfaction to not depend on husbands' perceptions of their wives' commitment. To examine this interactive effect, we conducted four regression analyses similar to the ones described in the previous section—two for each measure of husbands' marital satisfaction, once again controlling and not controlling partner satisfaction. Specifically, we regressed husbands' marital satisfaction onto the mean-centered score of couples' reports of sexual frequency, the mean-centered score of husbands' perceived partner commitment, and the Sexual Frequency

Table 4 Study 2: Interactive effects of sexual frequency and perceived partner commitment on marital satisfaction

	Wives' QMI			Wives' SMD		
	<i>b</i>	<i>SE</i>	<i>Effect size r</i>	<i>b</i>	<i>SE</i>	<i>Effect size r</i>
Model 1^a						
Intercept	42.27***	0.31		95.88***	0.76	
Sexual frequency (SF)	−0.02	0.01	.16	−0.02	0.04	.05
Wives' perceived commitment (C)	2.38***	0.41	.51	5.79***	1.01	.51
SF × C	0.07***	0.02	.41	0.13**	0.04	.33
Model 2^b						
Intercept	42.27***	0.31		95.88***	0.76	
Husbands' marital satisfaction	0.36	0.06	.51	0.33	0.07	.44
Sexual frequency (SF)	−0.01	0.01	.11	0.01	0.03	.03
Wives' perceived commitment (C)	1.84***	0.37	.46	4.86***	0.94	.47
SF × C	0.04**	0.01	.32	0.10**	0.03	.28
	Husbands' QMI			Husbands' SMD		
	<i>b</i>	<i>SE</i>	<i>Effect size r</i>	<i>b</i>	<i>SE</i>	<i>Effect size r</i>
Model 1^a						
Intercept	42.20	0.41		95.52	0.95	
Sexual frequency (SF)	−0.01	0.02	.07	−0.06	0.04	.13
Husbands' perceived commitment (C)	3.58***	0.72	.46	7.78***	1.66	.44
SF × C	0.08**	0.03	.28	0.08	0.06	.13
Model 2^b						
Intercept	42.14	0.36		95.42	0.89	
Wives' marital satisfaction	0.59***	0.11	.48	0.48***	0.11	.42
Sexual frequency (SF)	−0.00	0.02	.02	−0.06	0.04	.15
Husbands' perceived commitment (C)	2.53***	0.66	.25	5.90***	1.58	.36
SF × C	0.00	0.03	.01	−0.05	0.06	.08

$$\text{Effect size } r = \sqrt{\frac{r^2}{r^2 + df}}$$

QMI Quality Marriage Index measure, SMD Semantic Differential

** $p < .01$; *** $p < .001$

^a $dfs = 95$

^b $dfs = 94$

× Partner Commitment interaction, not controlling (Model 1) and controlling (Model 2) for the corresponding mean-centered score of wives' marital satisfaction. Results are shown in the bottom half of Table 4. As can be seen, consistent with prior work, sexual frequency was unrelated to husbands' satisfaction on average (e.g., McNulty et al., 2014). Interestingly, when wives' marital satisfaction was not controlled, the interaction between sexual frequency and perceived partner commitment was significant for the QMI and trending toward significance on the SMD. Importantly, however, once wives' marital satisfaction was controlled, the Sexual Frequency × Partner Commitment interaction was reduced to virtually 0 for the QMI and reversed directions for the SMD, indicating that the significant interactive effect that emerged for husbands in the uncontrolled analysis was driven by wives' satisfaction. This nonsignificant effect that emerged controlling for

wives' satisfaction is depicted in Fig. 2, Panel B. Again for the sake of brevity, we only present the results for husbands' SMD.

Sex-Differentiated Effects of Sexual Frequency and Perceived Partner Commitment on Marital Satisfaction

Finally, we tested whether the significant Sexual Frequency × Partner Commitment interaction that emerged among wives was significantly different from the nonsignificant Sexual Frequency × Partner Commitment interaction that emerged among husbands. We tested this sex difference for each measure of marital satisfaction in the first level of a two-level model with no random effects using the Hierarchical Linear Modeling 7.01 program (HLM; Bryk, Raudenbush, & Congdon, 2004). Specifically, we followed a procedure outlined by Raudenbush, Brennan, and Barnett (1995) to

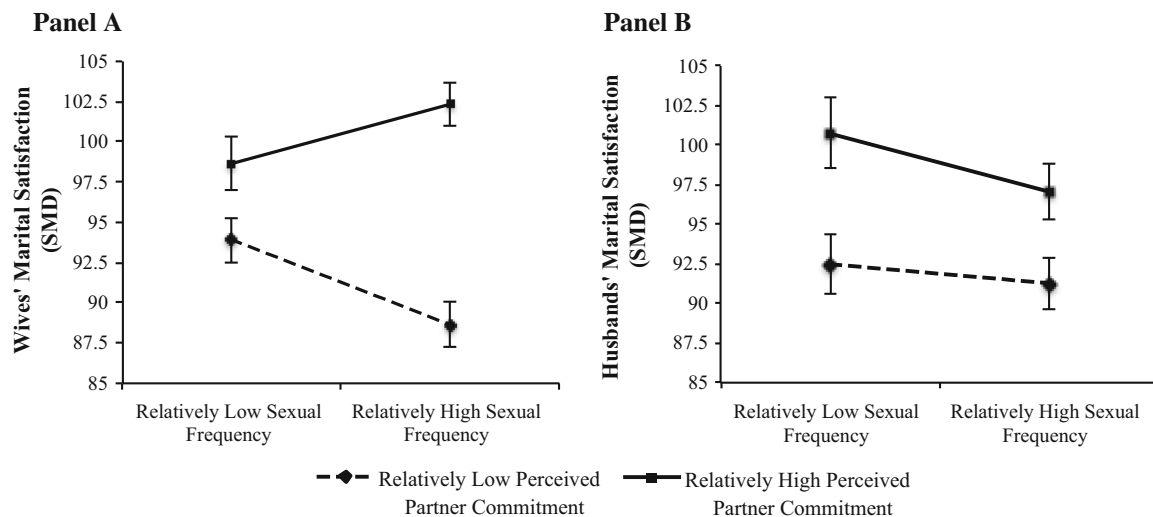


Fig. 2 Study 2: Interactive effects of sexual frequency and perceived partner commitment on marital satisfaction. The effect of wives' SMD in Study 2 is depicted in *Panel A*; the effect of husbands' SMD in Study 2 is depicted in *Panel B*. SMD Semantic Differential measure

estimate each partner's parameters separately but simultaneously and directly compared the strength of wives' and husbands' key two-way interactions (using the hypothesis testing option available in HLM), controlling for each corresponding mean-centered score of partner marital satisfaction. Those analyses indicated that wives' significant interactive effect was marginally stronger than husbands' nonsignificant interactive effect on the SMD, $\chi^2(1) = 3.47, p = .059$, and stronger, but not significantly so, on the QMI, $\chi^2(1) = 0.74$. Given this difference, we conducted four additional analyses to examine sex differences in the two simple effects of sexual frequency—one test of each simple effect for each measure of marital satisfaction. These analyses revealed a significant sex difference in the simple effect of sexual valuation among spouses who perceive their partners as relatively high in commitment on the SMD, such that sexual valuation was more positively associated with marital satisfaction among women compared to men, $\chi^2(1) = 4.33, p = .035$. This difference was not significant on the QMI, $\chi^2(1) = 0.62$. Further, there were no differences between men and women in their reactions to sexual frequency in the context of a relationship with a relatively less committed partner on either the SMD $\chi^2(1) = 0.29$, or the QMI, $\chi^2(1) = 0.82$, suggesting any differences between men and women in their reactions to frequent sex lies in the context of relationships with partners who are relatively high in commitment.

General Discussion

Women are frequently valued for their sexuality, a valuation that carries over into their intimate relationships. In contrast to a robust body of research addressing the implications of sexual valuation by strangers and acquaintances, the current research examined the implications of valuing women for their sexuality for women's

satisfaction with their intimate relationships (cf. Meltzer & McNulty, 2014; Zurbriggen et al., 2011). Two studies provided consistent evidence that the direction of the association between partner sexual valuation and women's marital satisfaction depends on women's perceptions of their partners' commitment. In Study 1, sexual valuation was positively associated with women's satisfaction when they perceived their husbands were highly committed to a long-term relationship, but negatively associated with women's satisfaction when they perceived their husbands were relatively less committed. In Study 2, sexual valuation in the form of increased sexual activity was positively associated with women's satisfaction when they believed their husbands were highly committed to a long-term relationship, but negatively associated with women's satisfaction when they believed their husbands were relatively less committed. Notably, consistent with the idea that women's nuanced reactions to sexual valuation are rooted in their evolved tendencies to avoid short-term sexual encounters, husbands did not display the same pattern as wives (Study 2), and there was some evidence that these effects were different across men and women. In fact, sexual frequency was unrelated to men's marital satisfaction regardless of partner commitment. Although several studies have documented positive associations between sexual frequency and men's relationship satisfaction (Call et al., 1995; Christopher & Sprecher, 2000; Donnelly, 1993; McNulty & Fisher, 2008), at least one recent description of two longitudinal studies of 207 couples also revealed no significant association between sexual frequency and marital satisfaction for men (or women) (McNulty et al., 2014).

It should be noted, however, that even the husbands in these samples who were relatively low in sexual valuation did not necessarily fail to value their wives for sex; likewise, even the wives who perceived their husbands were relatively low in commitment did not necessarily perceive those husbands as uncommitted. The

husbands in both samples reported average sexual valuation scores that fell above the midpoint of the scale on average, and the wives in both samples perceived their husbands as falling above the midpoint on commitment on average. Thus, even those relatively low on each variable demonstrated moderate levels of each construct. It is possible that a different pattern of effects may emerge in a more distressed sample of long-term couples composed of women who perceive their partners as less committed on average and men who do not value those women for sex on average. Future research may benefit by attempting to replicate these effects using samples with lower levels of perceived commitment and partner sexual valuation.

Implications and Future Directions

These findings reconcile research suggesting that women's reactions to sexual valuation are primarily negative (e.g., Calogero, 2004; Fairchild & Rudman, 2008) with other research suggesting women purposefully accentuate their sexuality in order to attract men (Buss, 1988; Walters & Crawford, 1994). Both bodies of work appear to be valid, but they reflect associations that emerge in different contexts. Consistent with research in support of objectification theory, women in the present research responded negatively to sexual valuation by partners relatively low in commitment. Indeed, the large majority of prior work on objectification that has examined the implications of sexual valuation has done so in the context of valuation by strangers and acquaintances who are likely perceived as uncommitted to long-term relationships (e.g., Fredrickson & Roberts, 1997; Fredrickson et al., 1998; Moradi & Huang, 2008; Myers & Crowther, 2008; Tolman et al., 2006; Tylka & Hill, 2004). Extending this prior work on strangers, the current research demonstrated that women's reactions to sexual valuation can be similarly negative in the context of intimate relationships characterized by relatively low commitment. But the nuanced perspective that guided the current research also revealed that women's reactions to sexual valuation can also be quite different in the context of long-term relationships characterized by high levels of commitment. When partner sexual valuation occurred in these relationships, it was associated with higher levels of relationship satisfaction. Though in opposite directions, both effects make sense from an evolutionary perspective. For women, experiencing sexual valuation and frequent sex in the context of relatively low levels of partner commitment would have produced significant reproductive costs throughout evolutionary history; thus, it makes sense that women would respond negatively to it. But experiencing sexual valuation and frequent sex in the context of relatively high levels of partner commitment would have produced significant reproductive benefits throughout evolutionary history; thus, it makes sense that women would respond positively to it.

Of course, as noted earlier, it is important to highlight that sexual valuation and objectification are distinct constructs. As defined in the current research, sexual valuation involves increased

sexual desire in the context of a committed relationship (see also Bogaert & Brotto, 2014). In contrast, objectification, as defined by Fredrickson and Roberts (1997), involves valuing a woman more for the physical aspects of a woman's body (e.g., appearance) than for the functional aspects of her body (e.g., strength). We did, of course, demonstrate in Study 1 that the interactive effect of sexual valuation and commitment was not further moderated by husbands' non-physical valuation, suggesting that high sexual valuation by a partner is positively associated with women's relationship satisfaction even when non-physical valuation by that partner is low, as long as that partner is committed. Nevertheless, other research (Meltzer & McNulty, 2014) demonstrates that such non-physical valuation is crucial—that is, women in that research were more satisfied with their relationships to the extent that their partners valued them for their physical appearance, only when those partners were committed *and* valued them for other attributes. To more definitively examine whether the effects of objectification, as defined in objectification theory, are similarly moderated by partner commitment, future research needs to estimate the interactive effects of commitment and traditional objectification measures on women's relationship satisfaction.

The current findings also have implications for research on intimate relationships more generally by demonstrating the value of applying evolutionary perspectives to understanding the processes that unfold in established relationships. Indeed, such perspectives led us to generate and test hypotheses that helped reconcile disparate literatures regarding the implications of sexual valuation for women. Although early research from evolutionary psychology focused on romantic attraction and mate selection (e.g., Buss, 1989, 1995; Buss, Shackelford, Kirkpatrick, & Larsen, 2001), which are undoubtedly important interpersonal processes, more recent research (e.g., Maner, Gailliot, & Miller, 2009; Maner, Rouby, & Gonzaga, 2008; McNulty et al., 2008) suggests that evolved mechanisms contribute to the maintenance of long-term committed partnerships as well. For example, Meltzer et al. (2014a, 2014b) recently demonstrated that studying marriages can uncover the implications of sex differences in preferences for partner physical attractiveness for relationship satisfaction. Future research may benefit by examining the implications of other evolved adaptations for established relationships.

Finally, future research may benefit from examining potential *intrapersonal* implications for women of long-term partner sexual valuation. For example, in line with Leary and colleagues' sociometer theory (Leary & Baumeister, 2000; Leary & Downs, 1995; Leary, Haupt, Strausser, & Chokel, 1998), which argues that individuals' self-esteem reflects an evolved mechanism that gauges the quality of their interpersonal relationships, women who are sexually valued by an intimate partner may feel accepted and thus experience increased levels of self-esteem compared to women who are not sexually valued. Further, given that partner sexual valuation may lead women to feel that their partners are accepting them for their bodies, women who are sexually valued

by intimate partners may experience increased body esteem, whereas women who are not sexually valued by intimate partners may experience decreased body esteem (for a similar discussion, see Meltzer & McNulty, 2010). Future research may benefit by examining whether such effects emerge independent from or in interaction with commitment.

Strengths and Limitations

We would be remiss if we did not acknowledge several factors that limit interpretations of the current findings until they can be replicated and extended. First, although we controlled for potential confounds, the current studies utilized cross-sectional, correlational data making it difficult to draw causal conclusions. Future research may benefit by examining the interpersonal effects of partner sexual valuation using longitudinal or experimental data. For example, by experimentally manipulating the extent to which women perceive their partners to sexually value them (versus value them for other non-sexual qualities), future research may address the causal ambiguities of the current findings by (1) demonstrating that increased partner sexual valuation *causes* increased relationship satisfaction among women with relatively more committed partners (but not among women with relatively less committed partners) and (2) ruling out potential confounds.

Second, we did not assess which partner initiated the sex assessed in Study 2, and sexual initiation may play an additional role in these effects. Nevertheless, this issue does not undermine the current results because women are likely to perceive both self-initiated and partner-initiated sex as a form of sexual valuation, as long as the partner-initiated sex is consensual.

Third, the current research did not consider additional potentially important moderators of the key association. For example, consistent with an evolutionary perspective, the implications of sexual valuation and commitment for women's relationship satisfaction may be further moderated by their partners' genetic fitness and status. That is, women with genetically fit, high-status partners may be more likely to experience higher levels of satisfaction from increased sexual valuation and sexual frequency in the context of a committed relationship compared to women with less genetically fit, low-status partners. Alternatively, even sexual valuation by a partner relatively low in commitment may be positively associated with women's satisfaction if that partner is relatively high in genetic fitness. Future research may benefit from examining such interactive effects.

Finally, these studies examined only heterosexual newlywed couples who reported relatively high levels of sexual valuation, sexual frequency, perceived commitment, and relationship satisfaction on average, and thus generalizations to other populations should be made with caution. For example, although women in relatively new marriages were satisfied with the extent to which

their committed husbands sexually valued them, it is unclear whether similar effects would occur among older couples or homosexual couples, particularly given that the predictions were based on an evolutionary logic and derived from assumptions regarding which relationships would have been most adaptive for reproduction (for a similar discussion, see Meltzer et al., 2014b). Likewise, as noted earlier, it is unclear whether similar effects would occur among couples who are oriented toward the long-term yet characterized by lower levels of commitment and relationship satisfaction. Future research may benefit from addressing the effects of partner sexual valuation in other populations of couples.

Nevertheless, these weaknesses need to be considered in light of several strengths of the current research that enhance our confidence in the results reported here. First, given that the conceptually similar effects replicated across two studies and held controlling for several potential confounds, they do not seem to reflect Type I errors or associations due to those covariates. Second, Study 2 demonstrated that similar effects did not emerge among men who perceived their partners to be relatively high in commitment, providing some support for the theoretical mechanisms driving these predictions. Finally, both studies used participants who responded based on their actual marriages, rather than hypothetical, laboratory-based, or prior relationships. In other words, the outcome measure, marital satisfaction, was both real and consequential.

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