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Sexual Communal Strength Partially Mediates the Associations between Mate Retention Behaviors and Relationship Satisfaction

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ABSTRACT

Mate retention behaviors are associated with several aspects of romantic relationships, but different categories of mate retention behaviors have divergent associations with relationship satisfaction. The present studies examined whether sexual communal strength – which refers to the motivation to meet the sexual needs of one's partner – mediated the associations that benefit-provisioning and cost-inflicting mate retention behaviors had with relationship satisfaction. We investigated the associations that mate retention behaviors had with relationship satisfaction through sexual communal strength using men's self-reports (Study 1) and women's partner-reports (Study 2). We found that sexual communal strength partially mediated the associations that mate retention behaviors had with relationship satisfaction in both studies. Benefit-provisioning mate retention behaviors had a *positive* indirect association with relationship satisfaction through sexual communal strength in both studies, whereas cost-inflicting mate retention behaviors had a *negative* indirect association with relationship satisfaction through sexual communal strength in Study 1 but not in Study 2. We explore the reasons why sexual communal strength may play an important role in the connections that mate retention behaviors have with relationship satisfaction.

The long-term retention of romantic partners is arguably as consequential for reproductive success as the initial acquisition of these partners. The successful retention of romantic partners may be especially important for individuals pursuing long-term mating strategies who have invested considerable time and resources in their relationships. The ubiquitous nature of infidelity and divorce across cultures suggests that ancestral humans most likely faced recurrent adaptive problems surrounding mate retention (Buss & Shackelford, 1997). It appears that the strategies used by individuals to maintain their romantic relationships play an important role in shaping these relationships but their precise impact often depends on the kinds of mate retention behaviors that are employed (e.g., Buss, 1988; Miner, Shackelford et al., 2009; Shackelford, Goetz, & Buss, 2005).

A number of specific tactics that individuals use to keep their partners from leaving relationships have been identified, ranging from the provisioning of gifts to the use of physical violence (Buss, 1988; Buss & Shackelford, 1997). More specifically, these mate retention behaviors have been categorized into *benefit-provisioning* and *cost-inflicting* (Miner, Shackelford et al., 2009; Shackelford, Goetz, & Buss, 2005). Benefit-provisioning behaviors include providing one's partner with sexual favors and monetary gifts in an effort to reduce the likelihood of desertion or infidelity by increasing the partner's self-esteem and relationship satisfaction. In contrast, cost-inflicting behaviors include verbally insulting or emotionally manipulating one's partner in an effort to decrease the

partner's self-esteem, thereby decreasing the likelihood of partner infidelity or relationship desertion. Although benefit-provisioning and cost-inflicting behaviors are distinct strategies for maintaining romantic relationships, these two mate retention strategies are often positively correlated with each other (e.g., Shackelford, Goetz, Buss, Euler et al., 2005).

Mate retention behaviors ostensibly function to prevent desertion and infidelity but certain kinds of mate retention behaviors may lead to relationship disharmony (e.g., the use of verbal insults). The existing literature highlights the importance of distinguishing between benefit-provisioning and cost-inflicting mate retention behaviors for understanding their consequences for romantic relationships. Davis et al. (2018) found that suspicious jealousy was related to the use of cost-inflicting mate retention behaviors, and the use of mate retention behaviors, in general, has been associated with partner-directed violence (Kaighobadi et al., 2009). Additionally, individuals with higher mate value (Miner, Starratt et al., 2009) and higher self-esteem (Holden et al., 2018) perform more benefit-provisioning behaviors, whereas those with lower self-esteem perform more cost-inflicting behaviors (Holden et al., 2014). However, Holden et al. (2018) also found that participants who derived self-esteem from their relationships used more of both categories of mate retention behaviors. Taken together, the existing literature suggests that mate retention behaviors are associated with an array of outcomes in romantic relationships. Nevertheless, the associations that mate retention behaviors have with partner-directed violence (Kaighobadi et al., 2009)

and relationship-derived self-esteem (Holden et al., 2018) suggest a complicated picture of benefit-provisioning and cost-inflicting mate retention behaviors.

The distinction between benefit-provisioning and cost-inflicting behaviors is important because benefit-provisioning mate retention behaviors tend to be *positively* associated with relationship satisfaction, whereas cost-inflicting mate retention behaviors tend to be *negatively* associated with relationship satisfaction (e.g., Biermann et al., 2021; Nascimento & Little, 2020). Benefit-provisioning mate retention behaviors reflect efforts to demonstrate one's value as a romantic partner. Those who adopt a benefit-provisioning strategy may provide their partner with benefits such as gifts or words of affirmation, which may explain why the employment of these behaviors is connected with higher levels of relationship satisfaction. Specifically, benefit-provisioning behaviors may increase relationship satisfaction by signaling one's commitment to their romantic partner. In contrast, cost-inflicting mate retention behaviors involve the use of aversive strategies (e.g., verbal insults may make the partner perceive themselves as less attractive to other potential mates) to prevent a partner's desertion from the relationship by limiting the options they perceive as available to them. The aversive nature of cost-inflicting mate retention behaviors may explain the negative associations between the use of these particular mate retention behaviors and relationship satisfaction.

Previous research has investigated the associations between mate retention behaviors and sexual satisfaction. For example, Pham et al. (2015) found that men's benefit-provisioning mate retention behaviors mediated the relationship between their agreeableness and their provisioning of oral sex to their romantic partners. Pham et al. (2015) argued that men's use of oral sex is encompassed by a general, benefit-provisioning mate retention strategy. However, oral sex is only one aspect of sexual satisfaction, and sexual satisfaction is only one aspect of the sexual domain of romantic relationships. Other sexual dimensions of romantic relationships, and their associations with mate retention behaviors, require empirical investigation. A number of recent studies have explored *sexual communal strength*, which refers to the motivation of an individual to meet the sexual needs of their partner (Muise et al., 2013). Sexual communal strength has been found to be associated with sexual satisfaction, sexual desire, commitment, and overall relationship satisfaction (Day et al., 2015; Muise et al., 2017). Individuals higher in sexual communal strength are more willing to engage in sex with their partner on days when their own level of sexual desire is low (Day et al., 2015), and display more consistent levels of sexual desire over time (Muise et al., 2013). To our knowledge, no study has investigated sexual communal strength from an evolutionary perspective. The correlation between sexual communal strength and relationship satisfaction suggests that some men may be motivated to increase their partner's relationship satisfaction by provisioning her with sexual favors. Such behaviors may be indicative of a benefit-provisioning mate retention strategy. Because benefit-provisioning mate retention behaviors are also associated with relationship satisfaction, it is possible that sexual communal strength mediates the relationship between benefit-provisioning behaviors and relationship satisfaction.

Specifically, it may be that men who are more oriented toward a benefit-provisioning mate retention strategy also incorporate greater attention to their partner's sexual satisfaction, and thereby increase their partner's overall relationship satisfaction.

Overview and Hypotheses

Previous research has shown both mate retention behaviors (Conroy-Beam et al., 2016) and sexual communal strength (Muise et al., 2017) to be associated with relationship satisfaction. The provisioning of sexual favors to one's partner is one of the items included among benefit-provisioning mate retention behaviors and is considered to be an expression of sexual communal strength. Thus, concern for a partner's sexual satisfaction may be best conceptualized as a consequence of a general, benefit-provisioning mate retention strategy. Because a benefit-provisioning mate retention strategy is aimed at increasing a partner's relationship satisfaction, and because sexual satisfaction is associated with overall relationship satisfaction (Day et al., 2015), there is reason to suspect that men's sexual communal strength may be part of a general, benefit-provisioning strategy, and that sexual communal strength may mediate the association that benefit-provisioning mate retention behaviors have with relationship satisfaction. In other words, men who are more oriented toward a benefit-provisioning mate retention strategy may seek to increase their partner's relationship satisfaction by increasing their partner's sexual satisfaction. Following this line of reasoning, we formed the following hypotheses:

Hypothesis 1: Men's use of benefit-provisioning mate retention behaviors will be positively associated with their own sexual communal strength which will, in turn, be positively associated with their relationship satisfaction.

Hypothesis 2: Men's use of cost-inflicting mate retention behaviors will be negatively associated with relationship satisfaction. This hypothesis is consistent with the results of previous studies which have found a negative association between cost-inflicting mate retention behaviors and relationship satisfaction (e.g., Nascimento & Little, 2020).

We did not have clear predictions regarding the associations that cost-inflicting mate retention behaviors would have with sexual communal strength or whether sexual communal strength would mediate the association that cost-inflicting mate retention behaviors had with relationship satisfaction. Despite our lack of clear predictions, we examined these associations for exploratory purposes.

We examined our hypotheses across two studies. Study 1 focused on men's self-reported performance of mate retention behaviors, their concern for their partner's sexual satisfaction, and their own satisfaction with their current romantic relationship. The goal of Study 2 was to replicate and extend the results of Study 1 by focusing on women's perceptions of their male partner's mate retention behaviors, their perceptions of their male partner's concern for their sexual satisfaction, and their own satisfaction with their current romantic relationship. Men

and women sometimes have discordant perspectives of their romantic relationships (e.g., Dobash et al., 1998), so focusing on the separate perspectives of men and women across our two studies allowed us to investigate whether similar patterns of results emerged for both men and women. For example, collecting reports from both men and women allowed us to determine whether the sexual communal strength of men is as closely linked to their own relationship satisfaction as it is to the relationship satisfaction reported by their female partners.

Study 1

The purpose of Study 1 was to investigate the associations between men's mate retention behaviors, their sexual communal strength, and their relationship satisfaction. We expected sexual communal strength to mediate the associations between men's mate retention behaviors and their relationship satisfaction.

Method

Participants

The data reported in Study 1 were collected as part of a larger project concerning whether erectile dysfunction is associated with jealousy and partner-directed violence. Part of that larger project has been reported elsewhere (e.g., Study 1 of Vance et al., 2021), but the analyses reported in the current study were specifically conducted to test novel hypotheses developed for this research. Participants were 299 men from the United States who were recruited via Amazon's Mechanical Turk (MTurk) and participated in exchange for financial compensation (\$2.00 USD). Participants were required to be heterosexual men between the ages of 18 and 45 years who were currently in a romantic relationship of at least 6 months duration. We restricted our age range to men who were between the ages of 18 and 45 years because these data were collected as part of a larger project intended to examine issues surrounding erectile dysfunction in men during their prime reproductive years. Data were excluded for 114 participants: 43 participants were excluded for reporting a sexual orientation other than "heterosexual" (assessed via self-report questionnaire), 2 participants were excluded for reporting they were not currently in a romantic relationship, 19 participants were excluded for reporting they were currently in a romantic relationship for less than 6 months, 2 participants were excluded for reporting they were over 45 years of age, 29 participants were excluded for being univariate outliers based on z-score values of ± 2.68 , and 19 participants were excluded for completing the survey in less than 10 minutes, which suggested that they did not complete the survey with care (the average completion time was 27.18 minutes [$SD = 13.76$ minutes]; see Curran, 2016, for a review of methods for detecting careless or inattentive responding). We also examined the data for multivariate outliers assessed by Mahalanobis distance (De Maesschalck et al., 2000) and inconsistent responding as assessed by inter-item standard deviation (Marjanovic et al., 2015) but no additional participants were excluded for those reasons. The final sample consisted of 185 heterosexual men with a mean age of

30.44 years ($SD = 5.07$) and a racial/ethnic composition as follows: 65.4% White, 13.0% Black, 7.0% Latino, 4.3% Asian, 7.6% Native American, and 2.7% Multiracial. Participants reported involvement in a romantic relationship lasting an average of 36.85 months ($SD = 45.44$).

Measures

Mate Retention Behaviors. Mate retention behaviors were measured using the Mate Retention Inventory-Short Form (MRI-SF; Buss et al., 2008). The MRI-SF assesses two categories of mate retention: *benefit-provisioning behaviors* (16 items; e.g., "Bought my partner an expensive gift" [$\alpha = 0.83$]) and *cost-inflicting behaviors* (22 items; "Called to make sure my partner was where they said they would be" [$\alpha = 0.97$]). Participants were asked to report how frequently they had engaged in each behavior in the past year using a scale ranging from 0 (*Never performed this act*) to 3 (*Often performed this act*).

Sexual Communal Strength. The Sexual Communal Strength Scale (Muise & Impett, 2019) was used to measure the extent to which men were concerned about their female partner's sexual satisfaction (6 items; e.g., "How high a priority for you is meeting the sexual needs of your partner?" [$\alpha = 0.78$]). Participants were asked to respond to each question on a scale that ranged from 0 (*Not at all*) to 10 (*Extremely*).

Relationship Satisfaction. The Relationship Satisfaction Scale (Fletcher et al., 2000) was used to measure the extent to which men were satisfied with their romantic relationship (4 items; e.g., "How committed are you to your partner?" [$\alpha = 0.85$]). Participants were asked to respond to each question on a scale that ranged from 1 (*Not at all*) to 9 (*Extremely*).

Data Analysis

We conducted bivariate correlations to examine the associations between men's self-reported performance of benefit-provisioning and cost-inflicting mate retention behaviors, sexual communal strength, and relationship satisfaction. Our hypotheses were consistent with an indirect effects model such that the associations that benefit-provisioning and cost-inflicting mate retention behaviors had with relationship satisfaction were partially explained by sexual communal strength. This led us to conduct mediation analyses using model four of the PROCESS macro developed by Hayes (2017) which uses a bootstrap resampling procedure that was repeated 10,000 times to generate a 95% bootstrap confidence interval (CI) for each direct and indirect association. More specifically, each category of mate retention behaviors served as the predictor for relationship satisfaction in its own model while controlling for the other category of mate retention behaviors (e.g., we controlled for cost-inflicting mate retention behaviors when conducting the analysis for benefit-provisioning mate retention behaviors). This approach allowed us to examine the unique direct and indirect associations that both categories of mate retention behaviors had with relationship satisfaction.

Table 1. Study 1 (Men's self-reports): intercorrelations and descriptive statistics.

	1	2	3	4
1. Benefit-Provisioning	—			
2. Cost-Inflicting	.66***	—		
3. Sexual Communal Strength	.19*	-.19*	—	
4. Relationship Satisfaction	.16*	-.20**	.50***	—
Mean	1.73	1.19	7.71	7.49
Standard Deviation	0.49	0.81	1.12	1.29

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

Results

The means, standard deviations, and intercorrelations among the variables are presented in Table 1. Benefit-provisioning mate retention behaviors had a large positive correlation with cost-inflicting mate retention behaviors and small positive correlations with sexual communal strength and relationship satisfaction. Cost-inflicting mate retention behaviors had small negative correlations with sexual communal strength and relationship satisfaction. Sexual communal strength had a large positive correlation with relationship satisfaction.

The results of the mediation analyses are presented together in Figure 1. These analyses revealed that benefit-provisioning mate retention behaviors had a medium positive association with sexual communal strength ($a_1 = 0.49$, $SE = 0.08$, $t = 6.20$, $p < .001$, $CI_{95\%} [0.33, 0.64]$), whereas cost-inflicting mate retention behaviors had a medium negative association with sexual communal strength ($a_2 = -0.46$, $SE = 0.07$, $t = -6.21$, $p = .001$, $CI_{95\%} [-0.60, -0.31]$). In turn, sexual communal strength had a medium positive association with relationship satisfaction ($b = 0.40$, $SE = 0.07$, $t = 5.35$, $p < .001$, $CI_{95\%} [0.25, 0.54]$). Benefit-provisioning mate retention behaviors had a positive indirect association with relationship satisfaction through sexual communal strength ($a_1 b = 0.19$, $SE = 0.05$, $z = 4.02$, $p < .001$, $CI_{95\%} [0.10, 0.31]$), whereas cost-inflicting mate retention behaviors had a negative indirect association with relationship satisfaction through sexual communal strength ($a_2 b = -0.18$, $SE = 0.05$, $z = -4.02$, $p < .001$, $CI_{95\%} [-0.28, -0.09]$).

Discussion

The results of Study 1 revealed that benefit-provisioning mate retention behaviors had a positive association with relationship satisfaction that was partially mediated by sexual communal strength, whereas cost-inflicting mate retention behaviors had a negative association with relationship satisfaction that was also partially mediated by sexual communal strength. These results suggest that men who perform more benefit-provisioning mate retention behaviors also show greater concern for their partner's sexual satisfaction which, in turn, is associated with greater overall relationship satisfaction. In essence, sexual communal strength may function as something akin to a particular form of benefit-provisioning mate retention behavior. This pattern may indicate that men who are more inclined to employ benefit-provisioning mate retention strategies may seek to enhance their partner's sexual satisfaction which may be beneficial for their own relationship satisfaction. It may be that, by attending to their partner's sexual satisfaction and increasing their relationship satisfaction, men set up a reciprocal cycle wherein their partners are more likely to engage in behaviors (e.g., attending to the male partner's sexual desires) that increase men's relationships satisfaction.

In contrast, men who perform more cost-inflicting mate retention behaviors show less concern for their partner's sexual satisfaction which, in turn, is associated with less overall relationship satisfaction. These results are consistent with previous research showing that benefit-provisioning and cost-inflicting mate retention behaviors have divergent associations with relationship satisfaction (Nascimento & Little, 2020; Salkicevic et al., 2014). One possibility is that men's increased use of cost-inflicting behaviors causes relationship disharmony and mutual distrust, which results in fewer opportunities to attend to the female partner's sexual satisfaction. Another possibility is that men who are more likely to adopt a cost-inflicting mate retention strategy are inherently less concerned with their partner's sexual satisfaction.

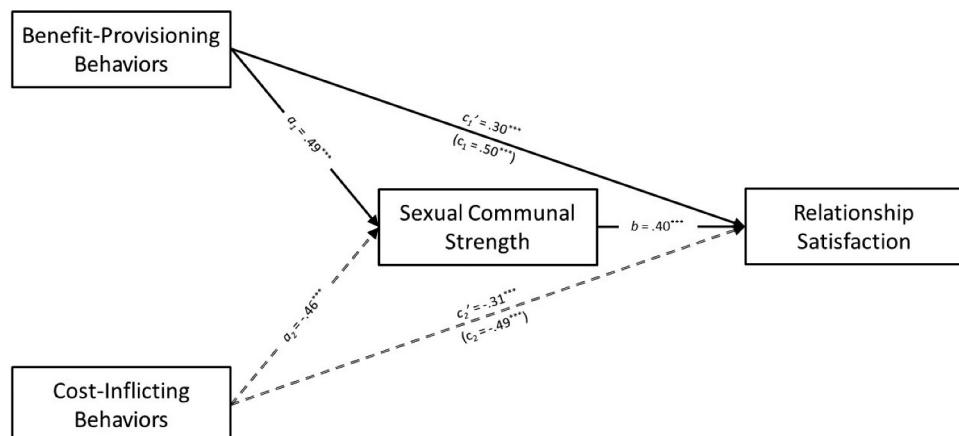


Figure 1. Study 1 (Men's self-reports): the results of the mediation analyses with sexual communal strength mediating the associations that benefit-provisioning and cost-inflicting mate retention had with relationship satisfaction. The significant positive associations are indicated by solid black arrows and the significant negative associations are indicated by dashed black arrows. * $p < .05$; ** $p < .01$; *** $p < .001$.

Study 2

The purpose of Study 2 was to replicate and extend the results of Study 1 using women's partner-reports. The examination of women's reports of their partner's behavior may provide useful insights regarding the connections between men's mate retention behaviors and relationship satisfaction. Previous research has documented that women provide more accurate reports of the frequency of certain relationship behaviors (e.g., Dobash et al., 1998). As a result, studies investigating romantic relationships have sometimes attempted to mitigate biased self-reports by collecting data from both men and women (e.g., Goetz & Shackelford, 2009; Shackelford, Goetz, Buss, Euler et al., 2005). We collected data from women in Study 2 to determine whether the associations we observed in Study 1 would emerge from their perspective.

Method

Participants

As in Study 1, the data reported in Study 2 were collected as part of a larger project concerning whether erectile dysfunction was associated with jealousy and partner-directed violence. Part of that larger project has been reported elsewhere (e.g., Study 2 of Vance et al., 2021). The analyses reported in the current study, however, were specifically conducted to test novel hypotheses for this research. Participants were 236 women from the United States who were recruited via MTurk and participated in exchange for financial compensation (\$2.00 USD). Participants were required to be heterosexual women between the ages of 18 and 45 years currently in a romantic relationship of at least 6 months duration. We restricted our age range to women who were between the ages of 18 and 45 years because these data were collected as part of a larger project intended to examine issues surrounding erectile dysfunction for couples during their prime reproductive years. Data were excluded for 91 participants: 47 participants were excluded for reporting a sexual orientation other than "heterosexual" (assessed via self-report questionnaire), 12 participants were excluded for not completing the survey, 2 participants were excluded for reporting they were not currently in a romantic relationship, 8 participants were excluded for reporting they were currently in a romantic relationship for less than 6 months, 4 participants were excluded for being univariate outliers based on z-score values of ± 2.68 , 3 participants were excluded for inconsistent responding as assessed by inter-item standard deviation (Marjanovic et al., 2015) and 15 participants were excluded for completing the survey in less than 10 minutes, which suggested that they did not complete the survey with care (the average completion time was 27.69 minutes [$SD = 14.94$ minutes]). We also examined the data for multivariate outliers as assessed by Mahalanobis distance but no additional participants were excluded for this reason. The final sample consisted of 145 heterosexual women with a mean age of 30.30 years ($SD = 4.68$) and a racial/ethnic composition as follows:

80.7% White, 11.7% Black, 1.4% Latina, 2.1% Asian, 2.1% Native American, and 2.1% Multiracial. Participants reported involvement in a romantic relationship lasting an average of 50.78 months ($SD = 49.70$).

Measures

Mate Retention Behaviors. A modified version of the MRI-SF from Study 1 was used to assess perceptions of the male partner's *benefit-provisioning behaviors* ($\alpha = 0.88$) and *cost-inflicting behaviors* ($\alpha = 0.97$) over the past year. The modifications involved directing participants to consider the mate retention behaviors of their male partner rather than their own behaviors. For example, the item "Called to make sure my partner was where they said they would be" was replaced with "Called to make sure I was where I said I would be." Participants were asked to report how frequently their partner had engaged in each behavior in the past year using a scale ranging from 0 (Never performed this act) to 3 (Often performed this act).

Sexual Communal Strength. The partner-report items from the Sexual Communal Strength Scale (Muise & Impett, 2019) were used to measure women's perceptions of their partner's concern for their own sexual satisfaction (6 items; e.g., "How high a priority for your partner is meeting your sexual needs?" [$\alpha = 0.71$]). Participants were asked to respond to each question on a scale that ranged from 0 (Not at all) to 10 (Extremely).

Relationship Satisfaction. The Relationship Satisfaction Scale (Fletcher et al., 2000) was used to measure the extent to which women were satisfied with their romantic relationship (4 items; e.g., "How committed are you to your partner?" [$\alpha = 0.82$]). Participants were asked to respond to each question on a scale that ranged from 1 (Not at all) to 9 (Extremely).

Data Analysis

We conducted bivariate correlations to examine the associations between women's reports of their partner's performance of benefit-provisioning and cost-inflicting mate retention behaviors, their partner's sexual communal strength, and women's self-reported relationship satisfaction. As in Study 1, we conducted mediation analyses to determine whether sexual communal strength mediated the associations that benefit-provisioning and cost-inflicting mate retention behaviors had with relationship satisfaction. Although the results of our bivariate correlations revealed that benefit-provisioning mate retention behavior was not significantly correlated with relationship satisfaction, we proceeded with the mediation analyses because it is possible that benefit-provisioning could have an indirect association with relationship satisfaction through sexual communal strength even in the absence of a significant correlation between benefit-provisioning and relationship satisfaction (see Hayes, 2009, or Zhao et al., 2010, for extended discussions of this issue).

Results

The means, standard deviations, and intercorrelations among the study variables are presented in Table 2. Benefit-provisioning mate retention behaviors had a large positive

Table 2. Study 2 (Women's partner-reports): intercorrelations and descriptive statistics.

	1	2	3	4
1. Benefit-Provisioning	—			
2. Cost-Inflicting	.66***	—		
3. Sexual Communal Strength	.16*	.04	—	
4. Relationship Satisfaction	-.01	-.32***	.44***	—
Mean	1.55	1.00	7.57	7.62
Standard Deviation	0.59	0.86	1.61	1.19

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

correlation with cost-inflicting mate retention behaviors and a small positive correlation with sexual communal strength. However, benefit-provisioning behaviors were not correlated with relationship satisfaction. Cost-inflicting mate retention behaviors were not correlated with sexual communal strength, but had a medium negative correlation with relationship satisfaction. Sexual communal strength had a medium positive correlation with relationship satisfaction.

The results of the mediation analyses are presented together in Figure 2. These analyses revealed that benefit-provisioning mate retention behaviors had a small positive association with sexual communal strength ($a_1 = 0.23$, $SE = 0.10$, $t = 2.19$, $p = .030$, $CI_{95\%} [0.02, 0.43]$), whereas cost-inflicting mate retention behaviors were not associated with sexual communal strength ($a_2 = -0.11$, $SE = 0.10$, $t = -1.07$, $p = .288$, $CI_{95\%} [-0.30, 0.09]$). In turn, sexual communal strength had a medium positive association with relationship satisfaction ($b = 0.47$, $SE = 0.08$, $t = 6.04$, $p < .001$, $CI_{95\%} [0.31, 0.62]$). Benefit-provisioning mate retention behaviors had a positive indirect association with relationship satisfaction through sexual communal strength ($a_1 b = 0.10$, $SE = 0.05$, $z = 2.04$, $p = .042$, $CI_{95\%} [0.01, 0.22]$), whereas sexual communal strength did not mediate the association that cost-inflicting mate retention behaviors had with relationship satisfaction ($a_2 b = -0.05$, $SE = 0.05$, $z = -1.04$, $p = .300$, $CI_{95\%} [-0.14, 0.04]$).

Discussion

The results of Study 2 were largely consistent with those of Study 1 but there were some differences that emerged. Similar to Study 1, benefit-provisioning mate retention behaviors had a positive association with relationship satisfaction that was partially mediated by sexual communal strength. These results support our expectation that men who employ benefit-provisioning mate retention strategies may be invested in satisfying their partner's sexual desires in order to enhance their partner's satisfaction with the relationship. As in Study 1, this pattern is consistent with the possibility that sexual communal strength may serve as a specific form of benefit-provisioning that is intimately linked with relationship satisfaction.

The negative association that cost-inflicting mate retention behaviors had with relationship satisfaction was also similar to Study 1. However, it is important to note that sexual communal strength did not mediate the association that cost-inflicting mate retention behaviors had with relationship satisfaction as it did in Study 1. The absence of a significant mediation is, in part, due to the fact that cost-inflicting mate retention behaviors were not associated with sexual communal strength. This shows that women who perceive their partners as performing more cost-inflicting mate retention behaviors do not necessarily perceive their partners to be disinterested in their sexual satisfaction. One potential explanation for this pattern is that women may have difficulty perceiving the "actual" level of sexual communal strength of their male partners given the nature of the variable. That is, it may be difficult for women to determine whether the same male partner who employs an array of cost-inflicting strategies such as verbal insults targeted at her could also be concerned about her sexual pleasure.

These results suggest that women who perceive their partners as performing more benefit-provisioning mate retention behaviors also perceive their partners as being more concerned with their own sexual satisfaction which, in turn, is associated with greater overall relationship satisfaction. In contrast,

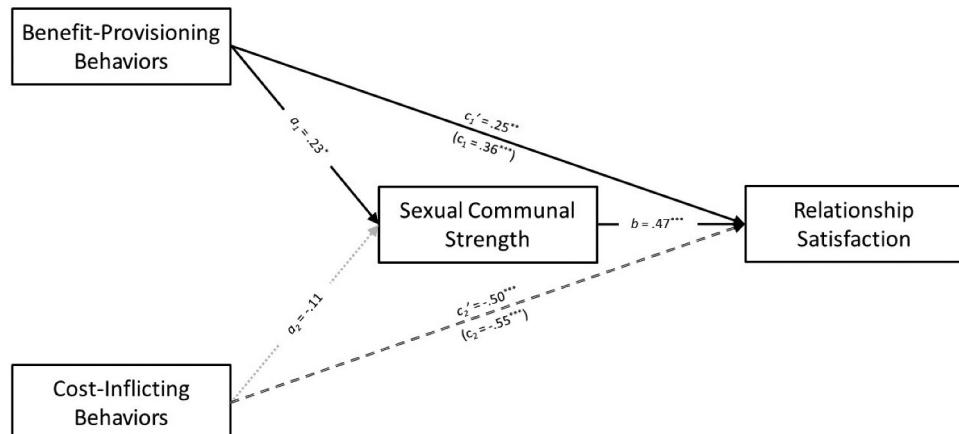


Figure 2. Study 2 (Women's partner-reports): the results of the mediation analyses with sexual communal strength mediating the associations that benefit-provisioning and cost-inflicting mate retention had with relationship satisfaction. The significant positive associations are indicated by solid black arrows, whereas the significant negative association is indicated by a dashed black arrow and the nonsignificant association is indicated by a dotted gray line. * $p < .05$; ** $p < .01$; *** $p < .001$.

women who perceive their partners as performing more cost-inflicting mate retention behaviors report lower levels of relationship satisfaction but this association is not explained by the perceived sexual communal strength of their male partner. One possibility is that adopting a benefit-provisioning mate retention strategy may also foster the tendency to be attentive to the sexual satisfaction of their partner, whereas the adoption of a cost-inflicting mate retention strategy has a much weaker impact on sexual communal strength. This may explain why sexual communal strength partially explains the association between benefit-provisioning mate retention and relationship satisfaction as well as why sexual communal strength has a less consistent role in the connection between cost-inflicting mate retention behaviors and lower levels of relationship satisfaction.

General Discussion

The goal of the present studies was to investigate the associations that benefit-provisioning and cost-inflicting mate retention behaviors had with relationship satisfaction through sexual communal strength across two studies using men's self-reports (Study 1) and women's partner reports (Study 2). The results of the present studies revealed that sexual communal strength partially mediated the positive indirect association that benefit-provisioning mate retention behaviors had with relationship satisfaction. Specifically, men who reported using more benefit-provisioning mate retention behaviors were more concerned with their partner's sexual satisfaction and, in turn, were more satisfied in their relationships. Women's reports of their male partner's use of benefit-provisioning mate retention behaviors was positively associated with their perceptions of their partner's sexual communal strength, which was, in turn, associated with their own relationship satisfaction. This pattern of results is interesting because it suggests that men who employ benefit-provisioning mate retention strategies may be invested in satisfying their partner's sexual desires in order to demonstrate their value as a romantic partner. In turn, this attentiveness to the sexual desires of their female partners has benefits for the level of relationship satisfaction that is reported by themselves and their female partners. These associations are also consistent with previous research which has observed associations between benefit-provisioning mate retention and relationship satisfaction (e.g., Biermann et al., 2021; Nascimento & Little, 2020) and associations between sexual satisfaction and relationship satisfaction (e.g., Day et al., 2015; Muise et al., 2017). The association between benefit-provisioning mate retention behaviors, sexual communal strength, and relationship satisfaction may indicate that the provisioning of sexual favors, and concern for the female partner's sexual satisfaction are important components of a broader benefit-provisioning mate retention strategy. The hypothesized function of a benefit-provisioning mate retention strategy is to reduce the likelihood of the female partner's infidelity or desertion via increased relationship satisfaction (Buss, 1988), so the results of the present studies suggest that the provisioning of sexual favors and concern for the female partner's sexual satisfaction may be particularly effective tactics for men who

want to increase the relationship satisfaction levels of their female partners in an effort to reduce the likelihood of her infidelity or desertion.

In Study 2, women whose partners used more benefit-provisioning mate retention behaviors were also more concerned with their female partner's sexual satisfaction, and these women also self-reported greater overall relationship satisfaction. The pattern of associations for Study 2 is unsurprising given that women's sexual satisfaction has been shown to be related to their overall relationship satisfaction. The results of Study 1 suggest that men who attend to their partner's sexual satisfaction may thereby increase their own overall relationship satisfaction. One possible explanation may be that when a woman's partner is more attentive to her sexual needs, she is, in turn, more attentive to her male partner's sexual needs, which increases his overall relationship satisfaction. As past research has established a relationship between sexual satisfaction and relationship satisfaction (Day et al., 2015), it may be the case that men and women who seek to improve their relationship satisfaction do so by meeting their partner's sexual needs. Additionally, women whose partners adopt a benefit-provisioning mate retention strategy may feel compelled to reciprocate those benefit-provisioning behaviors, leading to greater overall relationship satisfaction for both partners. Of course, it is also possible that women are the ones initiating this reciprocal cycle, first attending to their partner's sexual needs, prompting the performance of more benefit-provisioning behaviors by the male partner, and resulting in greater relationship satisfaction for the female partner.

In Study 1, cost-inflicting mate retention behaviors had a negative association with sexual communal strength which, in turn, had a positive association with relationship satisfaction. Specifically, men who reported more cost-inflicting mate retention behaviors were less concerned with their partner's sexual satisfaction and, consequently, were less satisfied in their relationships. One potential explanation for this pattern of results is that men who adopt a cost-inflicting mate retention strategy have less concern for their partner's sexual satisfaction and, as a result, their female partners show little concern for their sexual needs, which leads to lower relationship satisfaction for men. Past research has observed that men of lower mate value than their partners employ more cost-inflicting mate retention behaviors, possibly as a way to prevent their partner from deserting the relationship for a preferable mate (Salkicevic et al., 2014). A similar explanation may apply to the results of the present studies, with men of lower mate value being less able or less willing to meet their partner's sexual desires, and employing more cost-inflicting behaviors to prevent their partner's desertion from the relationship.

Although we made no specific predictions regarding the associations that cost-inflicting mate retention behaviors would have with sexual communal strength, it is notable that sexual communal strength did not mediate the relationship between cost-inflicting behaviors and relationship satisfaction for women. One potential explanation may lie in the large positive association between benefit-provisioning and cost-inflicting mate retention behaviors. Men who perform more

benefit-provisioning mate retention behaviors also perform more cost-inflicting behaviors (Holden et al., 2018), and if, as our results suggest, men who perform more benefit-provisioning behaviors are more concerned with their partner's sexual needs, this association may negate any effect of a cost-inflicting strategy on men's sexual communal strength. It may be that, at least according to women's experiences, men's use of cost-inflicting behaviors has no bearing on their concern for their female partner's sexual needs. Another explanation may be that women's perceptions of their partner's use of cost-inflicting behaviors differs from their partner's self-reported use of such behaviors. Previous research has shown that men sometimes underreport their use of negative partner-directed behaviors, whereas women provide more accurate reports (Dobash et al., 1998).

The present study also identified several direct associations. Specifically, benefit-provisioning mate retention behaviors had a positive association with sexual communal strength across both studies, and cost-inflicting mate retention behaviors had a negative association with relationship satisfaction across both studies. In Study 1, both benefit-provisioning and cost-inflicting behaviors were directly related to sexual communal strength and relationship satisfaction. In Study 2, however, benefit-provisioning mate retention behaviors were associated with sexual communal strength but not relationship satisfaction, whereas the opposite was true for cost-inflicting mate retention behaviors. That benefit-provisioning behaviors predicted sexual communal strength across both studies is consistent with the results of Pham et al. (2015), who found that benefit-provisioning behaviors mediated the relationship between men's agreeableness and their provisioning of oral sex to their female partners. Additionally, our analyses revealed that, when controlling for sexual communal strength, benefit-provisioning behaviors were positively associated with relationship satisfaction across both studies, and cost-inflicting mate retention behaviors were negatively associated with relationship satisfaction across both studies. These patterns of results suggest that, even when men's concern for their partner's sexual needs is held constant, men who perform more benefit-provisioning behaviors (e.g., giving their partners gifts) and fewer cost-inflicting behaviors (e.g., calling to confirm their partner's whereabouts) are more satisfied with their relationship. Nevertheless, future research may wish to continue investigating the nature of the relationships between mate retention behaviors, sexual communal strength, and relationship satisfaction. In particular, future research might investigate why women's perceptions of their partner's benefit-provisioning mate retention behaviors are not predictive of their own relationship satisfaction, or why women's perceptions of their partner's cost-inflicting mate retention behaviors are not predictive of their partner's sexual communal strength.

To our knowledge, the present studies are the first to investigate sexual communal strength guided heuristically by an evolutionary perspective, and to measure the associations that mate retention behaviors have with sexual communal strength. From an evolutionary perspective, sexual communal strength may be best understood as a particular expression of a broader set of benefit-provisioning behaviors that men may use in an

effort to increase their partner's relationship satisfaction, thereby reducing the likelihood of her desertion or infidelity. Indeed, the positive association between sexual communal strength and relationship satisfaction across both studies supports this role of sexual communal strength. These results may have important implications for educational and counseling efforts. For example, relationship counselors may focus on a couple's concern for each other's sexual satisfaction as a way to improve overall relationship satisfaction.

Limitations and Future Directions

The current studies include several limitations, and the results should be interpreted with these limitations in mind. First, our results were based on independent reports from men and women, rather than in-pair, dyadic data from men and their romantic partners. Although there are advantages to collecting independent reports, men and women sometimes have divergent perspectives on aspects of their romantic relationships. Whereas the current studies are capable of comparing the reports of men and women about their separate romantic relationships, dyadic data would allow for these comparisons to be made within the same relationships. A dyadic approach to investigating these variables would also reveal whether associations exist between men's self-reported behaviors, and women's self-reported and partner reported experiences. For example, a dyadic approach could determine whether men's self-reported performance of benefit-provisioning mate retention behaviors is associated with women's self-reported relationship satisfaction. Future studies may also wish to investigate whether the same patterns of results emerge using women's mate retention behaviors, partner-directed sexual communal strength, and relationship satisfaction.

A second limitation is that our sample sizes were modest and we relied on convenience samples recruited through MTurk. Researchers have expressed concerns about the quality of data collected from MTurk in recent years (e.g., Chmielewski & Kucker, 2020; Hauser et al., 2018; Kennedy et al., 2020). We screened the data using various criteria (e.g., excluding univariate and multivariate outliers, inconsistent responders, and participants who completed the study in less than 10 minutes) but it would have been useful to have incorporated other indicators of fraudulent or inattentive responding (e.g., directed-response items such as "Select '2' as your response if you are reading this item"). It would be beneficial for future research to replicate and extend the present results using larger and more diverse samples that are recruited through means other than MTurk.

A third limitation is that we are unable to determine the direction of causality between mate retention behaviors, sexual communal strength, and relationship satisfaction due to the correlational nature of the present studies. The model that we adopted for our analyses was based on the assumption that the connections mate retention behaviors had with relationship satisfaction would be explained, at least in part, by sexual communal strength and the results from the present studies were consistent with this hypothesis. However, these results do

not necessarily demonstrate the causal pattern implied by mediation because other causal patterns might exist between these variables. For example, greater relationship satisfaction may lead men to use more benefit-provisioning mate retention behaviors, whereas lower relationship satisfaction may lead to greater frequency of cost-inflicting mate retention behaviors. In fact, when it has been investigated, mate retention behaviors have often been analyzed as outcome variables, rather than as predictor variables (e.g., Barbaro et al., 2019; Buss, 1988). Thus, mate retention behaviors may be ill-suited to predict other romantic relationship outcomes. Future research should attempt to gain a clearer understanding of the causal links between these variables by using experimental designs or longitudinal studies.

Conclusion

The results of the current studies show that benefit-provisioning mate retention behaviors had a positive indirect association with relationship satisfaction through sexual communal strength across two studies that used men's self-reports and women's partner-reports. In contrast, cost-inflicting mate retention behaviors had a negative indirect association with relationship satisfaction through sexual communal strength in Study 1 (men's self-reports) but not in Study 2 (women's partner reports). These results suggest that benefit-provisioning and cost-inflicting mate retention behaviors have divergent associations with relationship satisfaction that are explained, at least in part, by sexual communal strength.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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