

**Perceived partner responsiveness moderates the associations between sexual talk and
sexual and relationship well-being in long-term couples**

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May 2019

The Journal of Sex Research

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Abstract

Sexual communication promotes sexual and relationship well-being. Previous research has frequently neglected couples' communication that occurs exclusively *during sexual activity*, and that is specific to that sexual interaction (i.e., sexual talk). We examined associations between individualistic and mutualistic (i.e., self- and other-focused) sexual talk and sexual and relationship well-being, and the potential moderating role of perceived partner responsiveness to sexual talk (PPR). An MTurk community sample of 303 individuals (171 female) in committed relationships completed online measures assessing sexual satisfaction, sexual functioning, sexual distress, relationship satisfaction, sexual talk, and PPR. Greater mutualistic talk was associated with higher female sexual functioning whereas greater individualistic talk was associated with lower relationship satisfaction. *At higher levels of PPR*, using more mutualistic talk was associated with less sexual distress and more individualistic talk was associated with greater sexual satisfaction. *At lower levels of PPR*, more mutualistic talk was associated with more sexual distress and more individualistic talk was linked to poorer sexual satisfaction. PPR may help buffer against the negative associations between self-focused (i.e., individualistic) sexual talk and sexual and relationship well-being whereas other-focused (i.e., mutualistic) sexual talk may be beneficial for sexual and relationship well-being, unless a partner is perceived as very unresponsive.

Introduction

Couples in committed romantic relationships typically experience declines in sexual well-being (i.e., sexual satisfaction, sexual functioning, and sexual distress) over time, beginning as soon as after their first year together, and regardless of relationship status (e.g., dating, cohabitating, married; Klusmann, 2002; Liu, 2003; McNulty & Widman, 2013; Rosen, Heiman, Long, Fisher, & Sand, 2016; Schmiedeberg & Schroder, 2016). Similarly, longitudinal studies have shown that couples experience declines in relationship satisfaction (i.e., relationship satisfaction, commitment, intimacy, trust, passion, love; Fletcher, Simpson, & Thomas, 2000) over time, irrespective of age or gender (e.g., Birditt, Hope, Brown, & Orbuch, 2012; Kamp Dush, Taylor, & Kroeger, 2008). Sexual well-being and relationship satisfaction each contribute uniquely to better mental and physical health (Robles, Slatcher, Trombello, & McGinn, 2014; Røsand, Slinning, Eberhard-Gran, Roysamb, & Tambs, 2012; Rosen & Bachmann, 2008). In fact, a review by Diamond and Huebner (2012) demonstrated that sexual well-being is protective for long-term physical health, and a meta-analysis by Holt-Lunstad, Smith, and Layton (2010) found that strong social relationships are more important to morbidity and mortality than other physical health indicators (e.g., smoking, obesity, and physical activity).

While sexual well-being and relationship satisfaction are positively related, they are distinct constructs. Recent evidence suggests that they can follow unique trajectories over the course of a relationship, and can at times be predicted by different variables (McNulty, Wenner, & Fisher, 2016; Montesi, Fauber, Gordon, & Heimberg, 2010; Schmiedeberg & Schroder, 2016). Given that sexual well-being and relationship satisfaction are vital components of quality of life (Impett, Muise, & Peragine, 2014), it is important to examine factors that may help couples in

committed relationships, who often experience declines in these areas, maintain or enhance these aspects of their lives.

Prior research has emphasized the importance of interpersonal factors, such as attachment style, dyadic empathy, communal motivation, and affection, for promoting well-being in sexual and romantic relationships (e.g., Debrot, Meuwly, Muise, Impett, & Schoebi, 2017; Impett, Muise, & Rosen, 2015; Mark, Vowels, & Murray, 2018; Rosen, Mooney, & Muise, 2017). In particular, couples' sexual communication has been shown to be associated with greater sexual well-being and relationship satisfaction (e.g., Brown & Weigel, 2018; Byers, 2005, 2011; MacNeil & Byers, 2005; Merwin, O'Sullivan, & Rosen, 2017; Rancourt, Rosen, Bergeron, & Nealis, 2016). It is theorized that sexual communication facilitates more mutually satisfying sexual scripts, thereby leading to greater sexual and relationship well-being (e.g., Byers, 2011). However, little is known about sexual communication that occurs *during* sexual interactions and how this may be associated with couples' sexual and relationship outcomes. The present study addresses this gap by examining the associations between sexual talk (i.e., communication *during* sexual activity) and sexual satisfaction, sexual functioning, sexual distress, and relationship satisfaction in romantic relationships.

Sexual Communication

Sexual communication refers to verbal and non-verbal interactions concerning sexual matters (e.g., sharing sexual preferences or disclosing sexual problems to a partner or facial expressions that reflect pleasure; Babin, 2012; Brogan, Fiore, & Wrench, 2009; Mark & Jozkowski, 2013; Merwin et al., 2017; Rehman, Rellini, & Fallis, 2011). Most sexual communication literature has focused on the role of verbal sexual communication (e.g., discussing sexual matters such as condom use, sexual initiation, sexual preferences, etc.; Greene

& Faulkner, 2005; Vannier & O'Sullivan, 2011). Cross-sectional dyadic studies have found that more open verbal sexual communication is related to greater sexual and relationship satisfaction in community samples, and less sexual distress in couples where the woman experiences pain during intercourse (Coffelt & Hess, 2014; Greene & Faulkner, 2005; MacNeil & Byers, 2005, 2009; Pazmany, Bergeron, Verhaeghe, Van Oudenhove, & Enzlin, 2015).

Theories of sexual communication posit that greater sexual communication enhances sexual and relationship well-being by fostering mutually satisfying sexual scripts (i.e., a couples' sexual routine or shared set of expectations about their sexual relationship; Gauvin & Pukall, 2018) and by enhancing intimacy (MacNeil & Byers, 2005, 2009; Mark & Jozkowski, 2013; Montesi et al., 2010; Rehman et al., 2011). Specifically, MacNeil and Byers (2005, 2009; see also Cupach & Metts, 1991) proposed that sexual communication contributes to couples' sexual satisfaction through two pathways. Through the expressive pathway, sexual communication enhances feelings of intimacy thereby leading to greater sexual satisfaction. Via the instrumental pathway, sexual communication allows partners to better understand each other's sexual preferences, leading to greater sexual satisfaction. This theoretical model is empirically supported in long-term couples (MacNeil & Byers, 2005, 2009), and has been extended to understand the associations between sexual communication and greater sexual functioning and relationship satisfaction through similar mechanisms (e.g., Merwin et al., 2017; Rancourt et al., 2016). Prior work using MacNeil and Byers' (2009) two-pathway model of sexual communication has typically used a measure of sexual communication that did not specify when the sexual communication occurred; however it is generally assumed that this communication occurred *outside* of sexual activity. Although the two-pathway model has not yet been applied to couples' communication that occurs *exclusively during* sexual activity and that is specific to the

sexual activity itself (i.e., their sexual talk), it is possible that the model may extend to this type of sexual communication.

Sexual Talk

Couples' discussions around sexual topics can be fraught with fears of being vulnerable, misunderstood, or even rejected (Rehman et al., 2011). Indeed, Rehman, Lizdek, Fallis, Sutherland, and Goodnight (2017) found that couples experienced higher levels of anxiety in advance of discussing sexual topics, compared to non-sexual topics. Moreover, Babin (2012) found that married individuals reported higher levels of apprehension about engaging in sexual communication compared to those in committed dating relationships, and that greater apprehension was associated with less verbal sexual communication with a partner. Such findings suggest that sexual communication is more difficult than other types of relationship communication, and that couples in longer-term relationships may be especially vulnerable to challenges in engaging in sexual communication. Moreover, Ménard and Offman (2009) argued that general sexual communication (e.g., discussing one's sexual likes and dislikes outside of a sexual interaction) is different from actively requesting one's preferences *during* sexual activity, which comes with greater interpersonal risk (i.e., rejection). Studies have found that communicating more about pleasure *during* sex was associated with greater sexual satisfaction (Babin, 2012; Blunt-Vinti, Jozkowski, & Hunt, 2018; Brogan et al., 2009).

To our knowledge, very few studies have examined sexual communication that *specifically* occurs during sexual interactions and is specific to the interaction (i.e., sexual talk; e.g., Blunt-Vinti et al., 2018; Jonason, Betteridge, & Kneebone, 2016), and to date, only one study has examined the *content* of couples' sexual talk (Jonason et al., 2016). Using both qualitative and quantitative methods the authors identified eight unique sexual talk themes, and a

factor analysis revealed that these loaded into two subscales: *Individualistic* talk is self-focused and relates to one's own sexual experience and pleasure (i.e., statements of dominance, submission, and sexual ownership, and talking about sexual fantasies), whereas *mutualistic* talk is other-focused and relates to sharing the sexual experience with one's partner (i.e., short exclamations of sexual pleasure, instructional statements, positive feedback, and statements of intimacy/bonding). Engaging in more mutualistic talk was associated with greater sexual and relationship satisfaction, whereas engaging in more individualistic talk was associated with greater sexual—but not relationship—satisfaction. The authors suggested that the self-focused nature of individualistic talk may prioritize the sexual enjoyment of the speaker above that of their partner, thereby leading to greater sexual—but not necessarily relationship—satisfaction (Jonason et al., 2016).

While informative, Jonason et al. (2016) did not require participants to be in a current romantic relationship, nor did they ask if participants were currently (or had ever been) sexually active. Thus, their findings may not be representative of individuals who are in committed, sexually active, romantic relationships—that is, those who are at higher risk of declines in sexual well-being and relationship satisfaction. Further, Jonason et al. (2016) neglected other aspects of sexual well-being, including sexual functioning and sexual distress. Sexual satisfaction is the subjective evaluation of the positive and negative aspects of one's sexual activity and the subsequent affective response to this evaluation (Lawrance & Byers, 1992). In contrast, sexual functioning refers to the intra-individual experience of sexual desire, arousal, orgasm, and pain, whereas sexual distress refers to negative emotions (e.g., worry, frustration, and anxiety) experienced in relation to one's sexual relationship (Derogatis, Clayton, Lewis-D'Agostino, Wunderlich, & Fu, 2008; Meston & Derogatis, 2002; Rosen et al., 2000; Rosen et al., 1997).

Sexual satisfaction, sexual functioning, and sexual distress are distinct constructs such that they can exhibit different patterns of change over time (Stephenson & Meston, 2010), and an individual can report high or low levels in one of these areas, without necessarily experiencing corresponding changes in one of the other components (e.g., Stephenson & Meston, 2015). Given that the World Health Organization (WHO) emphasizes that sexual well-being is not simply the absence of sexual dysfunction (WHO, 2015), but also the presence of positive sexual functioning, it is important to assess multiple aspects of sexual well-being. Finally, since sexual talk typically happens in a partnered context, the perception of how a partner responds to sexual talk might have important implications.

Perceived Partner Responsiveness

Perceived partner responsiveness—the extent to which a person perceives their partner’s verbal and non-verbal responses to be accepting, understanding, validating, and caring—is thought to be a key component to lasting and satisfying romantic relationships (Reis, 2012). The associations between perceived partner responsiveness and greater relationship well-being have been attributed to physical and emotional factors such as a reduced stress response (e.g., Slatcher, Selcuk, & Ong, 2015) and greater feelings of intimacy in the relationship (e.g., Otto, Laurenceau, Siegel, & Belcher, 2015). In longitudinal, daily diary, and experimental studies, it has been shown to be a robust predictor of greater sexual satisfaction and functioning, lower sexual distress, and greater relationship satisfaction among couples (Birnbaum & Reis, 2012; Birnbaum et al., 2016; Bois et al., 2016; Muise & Impett, 2015). Following from this work, perceived partner responsiveness to sexual talk may play a key role in the associations between sexual talk and sexual and relationship outcomes, especially given the heightened sense of

vulnerability and fear of rejection that communicating during sex may evoke (Ménard & Offman, 2009).

When perceived partner responsiveness to sexual talk is greater (e.g., a partner is perceived as more accepting, validating, caring, and understanding in response to sexual talk), then individuals may experience more intimacy, individual or shared pleasure through mutual sexual scripts, and the couple may be better able to meet each other's sexual needs. Under such circumstances, sexual talk may be associated with greater sexual well-being and relationship satisfaction, compared to when a partner is perceived to be less responsive to sexual talk. Indeed, when a partner is viewed as less responsive to sexual talk (e.g., they ignore or invalidate) this may be associated with feelings of rejection, lower intimacy, and prevent the couple from meeting each other's sexual needs—and thus be associated with lower sexual well-being and relationship satisfaction. In other words, the positive associations between sexual talk and sexual well-being and relationship satisfaction may be strengthened when a partner is perceived as *more responsive*, but when a partner is perceived as *less responsive* this may weaken the beneficial effects. Understanding the conditions under which sexual talk may be more or less beneficial would provide further nuance to our understanding of the role of sexual communication in the sexual and relationship well-being of individuals in committed relationships.

Current Study

In a cross-sectional study of individuals in committed, sexually active, romantic relationships, we examined the associations between mutualistic and individualistic sexual talk and sexual satisfaction, functioning, and distress, and relationship satisfaction, as well as the moderating role of perceived partner responsiveness to sexual talk. Based on theories of sexual communication and perceived partner responsiveness, as well as prior research, we hypothesized

that (1) when an individual perceived their partner as *more responsive* to sexual talk, using more mutualistic sexual talk would be associated with greater sexual satisfaction and functioning, lower sexual distress, and greater relationship satisfaction, compared to using less mutualistic talk, (2) when an individual perceived their partner as *less responsive* to sexual talk, using more mutualistic sexual talk would be associated with poorer sexual satisfaction and functioning, greater sexual distress, but not poorer relationship satisfaction, compared to using less mutualistic talk, (3) when an individual perceived their partner as *more responsive* to sexual talk, using more individualistic sexual talk would be associated with greater sexual satisfaction and functioning, lower sexual distress, but not greater relationship satisfaction, compared to using less individualistic talk, (4) when an individual perceived their partner as *less responsive* to sexual talk, using more individualistic sexual talk would be associated with poorer sexual satisfaction and functioning, lower sexual distress, and poorer relationship satisfaction, compared to using less individualistic talk.

Method

Participants. The final sample included 303 participants (171 female, 131 male, 1 intersex). The inclusion criteria were as follows: (1) in a sexual and romantic relationship and living with their partner; (2) sexually active with their partner (engaged in manual stimulation, oral sex, or intercourse) at least once in the previous four weeks; (3) 18 years of age or older; and (4) comfortable reading and understanding in English. Using effect sizes from previous research (Jonason et al., 2016), an a-priori power analysis conducted using G*Power indicated that we would need a sample of 266 individuals to provide sufficient power for the planned hierarchical moderated regression analyses (Faul, Erdfelder, Buchner, & Lang, 2009).

Of 361 potential participants (i.e., individuals who expressed interest in the study), 28 (7.76%) did not go on to complete the survey because they were deemed ineligible. Of the 333 eligible participants, 19 (5.71%) were excluded for failing one or more attention checks in the survey, 6 (1.80%) were excluded because of unreliable data (i.e., indicated that we should not use their data, said they were ‘unsure’ if we should use their data, or indicated that the data they provided were only ‘somewhat accurate’). A final 5 (1.50%) participants were removed because they were missing more than 20% of data on one or more of the core study measures, resulting in the final sample size of 303.

Procedure. Participants were recruited through an advertisement on Amazon Mechanical Turk (MTurk), an online recruitment source. The study was advertised as a survey about sexual experiences and communication within romantic relationships. Prior research has indicated that participants recruited through MTurk provide valid data and are more demographically diverse than both U.S. university samples and standard Internet samples (Chandler & Shapiro, 2016; Mortensen & Hughes, 2018). Interested participants followed a link to complete an online eligibility screening questionnaire through Qualtrics Research Suite, a secure online survey program. Eligible participants provided their informed consent online and completed a demographics questionnaire as well as standardized measures assessing their sexual satisfaction, sexual functioning, sexual distress, and relationship satisfaction. Participants also completed measures of their own sexual talk, and of perceived partner responsiveness to their own sexual talk. Following recommendations for enhancing the validity of online data collection, two attention-check questions were embedded within study measures to verify that participant’s attention was engaged during the study (Thomas & Clifford, 2017). Additionally, at the end of the study, participants were asked to rate the accuracy of their own data on a scale of 1 (*not at all*

accurate) to 5 (*extremely accurate*), and to indicate whether we should use their data (*yes* or *no* or *unsure*). Participants were compensated for completing the study with a payment of \$1.40, in line with MTurk standards for compensation (Mason & Suir, 2012), and received a list of online resources about sexual health and problems, mental health, and relationships. The study was approved by our institutional research ethics board.

Measures

Demographics. Information on participants' age, ethnicity, sex, gender, sexual orientation, education, income, and relationship characteristics (i.e., partner's gender, relationship status and duration) were collected through self-report questions. Participants were provided with the following response options for sex: *male, female, intersex*, and the following response options for own and partner's gender: *male, female, trans-identify as male, trans-identify as female, other (specify if you wish)*.

Sexual Talk. The sexual talk during sexual activity measure (SexTalk; Jonason et al., 2016) was used to assess participant's general use of individualistic and mutualistic talk during sexual activity. The measure contains 16 items assessing four types of individualistic talk (statements which are sexually dominant or submissive, messages of 'sexual ownership', and talking about sexual fantasies) and four types of mutualistic talk (short exclamations of excitement or pleasure, positive feedback or compliments, instructive statements, and messages that strengthen the intimate/emotional bond with one's partner). An exploratory factor analysis (EFA) supported the two factor structure of the measure (Jonason et al., 2016). Participants report on the frequency with which they engage in each type of sexual talk, and how exciting they find it to say each type of sexual talk with their current romantic partner during sexual activity on a 5-point Likert scale ranging from 1 (*Never or Not at all*) to 5 (*All the time or*

Extremely). Jonason et al. (2016) found that scores for frequency of use and excitement had good-to-excellent internal consistency and averaged the scores to eliminate redundancy and reduce Type I error inflation. We found that frequency of use and excitement to say were indeed highly correlated in our sample (mutualistic talk: $r = .85, p < .01$; individualistic talk: $r = .87, p < .01$) and therefore followed the same procedure as Jonason et al. (2016). Each subscale score could therefore range from 4 to 20, and higher scores indicated more frequent use of and excitement from saying sexual talk.

Given that the SexTalk measure is still novel, we conducted an EFA with our sample according to the best practices of Sakaluk and Short (2017). We conducted all analyses in SPSS and used O'Connor's (2000) SPSS syntax for parallel analysis. Common factors were extracted using maximum likelihood estimation, and promax (i.e., oblique) rotation to achieve simple structure and estimate correlations between common factors. We determined how many factors to retain by conducting parallel analysis, using nested-model comparisons, and examining descriptive measures of model fit. The parallel analysis revealed that factor solutions containing 1 or 2 common factors explained more of the variance in the scale items than randomly simulated factors, and thus were plausible factor solutions. We subsequently extracted factor solutions of 1 and 2 common factors for further examination, anticipating that the 2-factor solution may be best given the results of the parallel analysis. The solution entailing only a single common factor had a poor model fit, $\chi^2(20) = 175.203, p < .001, RMSEA = .156, NNFI = .80$ (Little, 2013). A two-factor solution, alternatively, had an acceptable model fit, $\chi^2(13) = 43.803, p < .001, RMSEA = .086, NNFI = .939$ (Little, 2013), and was a significant improvement compared to the one-factor solution, $\Delta \chi^2(7) = 131.4, p < .0001$. As this two-factor model was congruent with prior theory on the distinctions between individualistic and mutualistic sexual

talk (Jonason et al., 2016), we selected it as the final model for the Sexual Talk scale.¹ Items 1, 2, 5, and 8 formed the mutualistic sexual talk factor, whereas items 3, 4, 6, and 7 formed the individualistic sexual talk factor. All rotated factor loadings and communalities for the final two-factor solution are presented in Table 1 of the Online Supplemental Materials (see Data Analyses section below for details). Mutualistic and individualistic sexual talk were positively correlated ($r = .68$). The internal consistency of the sexual talk measure in the present sample was $\alpha = .80$ for the mutualistic subscale and $\alpha = .82$ for the individualistic subscale.

Perceived Partner Responsiveness to Sexual Talk. To assess perceived partner responsiveness (PPR) to sexual talk, we administered a well-validated measure of PPR (Laurenceau, Barrett, & Rovine, 2005), adapted to the context of sexual talk. The measure consists of 4 items asking participants to rate how understanding, validating, caring, and accepting they perceived their current partner to be to their own sexual talk (e.g., *When you use sexual talk with your partner during sexual activity, how much do you feel your partner accepts you as you are?*) on a 7-point Likert scale ranging from 1 (*Not at all*) to 7 (*Very much*). Total scores could therefore range from 4 to 28, and higher scores indicated greater PPR to sexual talk.

We initially developed and included an additional 5 behaviourally-oriented PPR items but a preliminary EFA (see Table 2 of the Online Supplemental Materials) and previous literature supported the decision to only use the 4 pre-existing items that were adapted to be

¹ While a 3-factor model would have excellent fit, it was not used because the parallel analysis results showed that the eigenvalue for the real data (.1138) was smaller than that from the randomly generated data set (95th percentile = .1581). Sakaluk and Short (2017) encourage researchers to retain the number of factors that have eigenvalues from their real data that are larger than those from the randomly generated data set. The rationale is that factors should be retained only if they account for more meaningful variance than random statistical noise (Sakaluk & Short, 2017). Additionally, the 3rd factor would only have 1 item in it (item 4: submissive), and a factor with fewer than 3 items is generally weak and unstable (Costello & Osborne, 2005).

specific to sexual talk. A second EFA found that a single-factor solution was the best fit (see Table 3 of the Online Supplemental Materials) for this 4 item measure of PPR to sexual talk. The internal consistency in the present sample was $\alpha = .93$.

Sexual Satisfaction. To assess sexual satisfaction, the Global Measure of Sexual Satisfaction Questionnaire (GMSEX; a subscale of the Interpersonal Exchange Model of Sexual Satisfaction Questionnaire; Lawrance & Byers, 1998) was used. Participants were asked to select on a 7-point bipolar scale what best describes their overall sexual relationship with their current partner using five word pairs, such as ‘Pleasant’ to ‘Unpleasant.’ The GMSEX provides a summed score ranging from 5 to 35 with higher scores indicating higher levels of sexual satisfaction. The GMSEX has excellent reliability and validity (Lawrance & Byers, 1998). The internal consistency in the present sample was $\alpha = .97$.

Sexual Functioning. The well-validated Female Sexual Function Index (FSFI; Rosen et al., 2000) and the Index of Erectile Function (IIEF; Rosen et al., 1997) were used to assess sexual functioning for self-identified female and male participants, respectively. Individuals self-identifying as intersex were provided with an additional question to assess which, if any, sexual functioning measure they would prefer to complete. The FSFI assesses six domains of female sexual functioning: desire, lubrication, orgasm, pain, arousal, and satisfaction. This measure consists of 19 items that participants respond to on a 5- or 6-point Likert scale. Total scores can range from 2 to 36, and higher scores indicate better sexual functioning (Rosen et al., 2000). The IIEF consists of 15 items that assess five domains of male sexual functioning: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. Items are rated on 5- or 6-point Likert scales and total scores can range from 5 to 75, with higher scores indicating better sexual functioning (Rosen et al., 1997). To reduce overlap with the measure of

sexual satisfaction (GMSEX) the sexual satisfaction subscales were removed from both the FSFI and IIEF. With the sexual satisfaction subscales removed the internal consistency in the present sample was $\alpha = 0.94$ (FSFI) and $\alpha = 0.88$ (IIEF).

Sexual Distress. The Female Sexual Distress Scale-Revised (FSDS-R; Derogatis et al., 2008) was used to assess sexual distress in all participants as it was recently validated for men (Santos-Iglesias, Mohamed, Danko, & Walker, 2018). The FSDS-R consists of 13 items (e.g., *How often do you feel stressed about sex?*) that are rated on a 5-point Likert scale from 0 (*never*) to 4 (*always*), and total scores can range from 0 to 52, with higher scores indicating greater sexual distress. The Cronbach's alpha in the current study was .96.

Relationship Satisfaction. The relationship satisfaction subscale of the Perceived Relationship Quality Components (PRQC; Fletcher et al., 2000) was used to measure satisfaction with the overall intimate relationship. This subscale has strong psychometric properties and consists of three items that participants respond to on a 7-point Likert scale, from 1 (*not at all*) to 7 (*extremely*). Total subscale scores can range from 3 to 21, and higher scores indicate greater relationship satisfaction. Fletcher et al. (2000) state that the PRQC subscales have the advantage of being brief, reliable, valid, and sufficient when measuring relationship quality components, such as relationship satisfaction. The internal consistency in the present sample was .95.

Data Analyses. Online Supplemental Material (including data, associated syntax, and supplemental tables) can be found on the Open Science Framework (OSF) page: https://osf.io/tj76w/?view_only=026ca06a1a51464d927563b45180fb6c.² Data were analyzed using SPSS (version 24.0). Of the 303 participants in this study, minimal data were missing for each measure (< 0.6% at the item-level) and data were missing completely at random (Scheffer,

² Data file is password protected and to be used for research purposes only. Please contact the corresponding author for access.

2002), as indicated by a non-significant Little's (1988) MCAR test, $\chi^2 = 835.34, p = .568$.

Expectation maximization was therefore used to impute item-level missing data. Pearson's and point biserial correlations were conducted to examine intercorrelations among study variables, and to evaluate potential sociodemographic covariates (i.e., age, relationship duration, years of schooling, annual household income). No sociodemographic variables were correlated with outcome variables at $r \geq .30$ (Table 4 of Online Supplemental Materials). Thus, no sociodemographic variables were included as covariates in the primary analyses (Frigon & Laurencelle, 1993).

Four hierarchical moderated linear regressions were conducted; that is, separate models were conducted for sexual satisfaction, sexual functioning, sexual distress, and relationship satisfaction. Different measures were used for sexual functioning depending on self-identified sex, thus the results for self-identified female and male participants were examined separately. The one self-identified intersex participant in our final sample chose to complete the female sexual functioning measure and was therefore included in analyses with the self-identified female participants. The predictors and moderator were grand mean centered prior to analyses. The centered scores of sexual talk (individualistic and mutualistic) and perceived partner responsiveness to sexual talk were entered in Step 1, the individualistic x perceived partner responsiveness, mutualistic x perceived partner responsiveness, and mutualistic x individualistic interactions in Step 2, and the individualistic x mutualistic x perceived partner responsiveness interaction term in Step 3. Although we did not have specific hypotheses, for comprehensiveness we included in our models the 2-way interaction between individualistic and mutualistic talk as well as the 3-way interaction between individualistic talk, mutualistic talk, and perceived partner responsiveness. None of these 2 or 3-way interactions were significant in any of the models. All

condition indices were less than 30, suggesting that multicollinearity was not a concern (Hair, Black, Babin, Anderson, & Tatham, 2006).

All significant interactions were followed up with simple slopes analyses and the Johnson-Neyman (J-N) technique (Carden, Holtzman, & Strube, 2017). Simple slopes analyses involve choosing values for the moderator that are +/- 1 standard deviation (*SD*), and therefore only yield information for these somewhat arbitrary points (Carden et al., 2017). When the moderator is continuous, a more nuanced approach is the J-N technique. The J-N technique solves for the values of the moderator for which the association between the predictor and the dependent variable becomes significant—thereby adding further specificity for interpreting the results (Carden et al., 2017). We therefore tested the simple effects at one *SD* above and below the mean of the moderator as high versus low levels of PPR in the moderated regression analysis, and then the J-N technique was performed using the SPSS PROCESS version 3 macro (Hayes, 2017) to identify the regions of significance across all levels of the moderator values. Microsoft Office Excel Workbook CAHOST (Carden et al., 2017) was used to create the J-N plots. Finally, we tested whether gender moderated any of the observed effects using the PROCESS macro.

Results

Descriptive characteristics for the sociodemographic variables of this sample are reported in Table 1. An independent samples t-test revealed no sex or gender differences for use of mutualistic talk, but that male participants ($M = 9.85, SD = 4.68$) used more individualistic talk compared to female participants ($M = 8.30, SD = 4.30$), $t(298) = 2.97, p = .003$. Intercorrelations between study variables are reported in Table 2.

[Table 1 near here]

[Table 2 near here]

Sexual Satisfaction

As seen in Table 3, the overall model for sexual satisfaction was significant. There were no significant main effects for individualistic or mutualistic talk. However, there was a significant main effect for perceived partner responsiveness (PPR) to sexual talk; greater PPR to sexual talk was associated with greater sexual satisfaction. PPR to sexual talk did not moderate the association between mutualistic talk and sexual satisfaction, but there was a significant interaction between individualistic talk and PPR. The simple slopes analyses indicated that at lower levels of PPR ($-1 SD$), greater individualistic talk was associated with lower sexual satisfaction [$B = -0.46$, $t(302) = -3.11$, $p < .01$], whereas at higher levels of PPR ($+1 SD$) the greater individualistic talk was associated with greater sexual satisfaction [$B = 0.30$, $t(302) = 3.27$, $p < .01$]. The J-N plot for this model (Figure 1A) showed that for values of PPR lower than 22.82 or greater than 26.88, the effect of individualistic talk on sexual satisfaction was significantly different from zero. Thus, when PPR was lower than 22.82, using more individualistic talk was associated with poorer sexual satisfaction, whereas when PPR was greater than 26.88, using more individualistic talk was associated with greater sexual satisfaction. It is worth noting that 44.88% of our sample reported PPR high enough to experience a positive association between individualistic talk and sexual satisfaction, whereas only 28.38% reported PPR low enough to experience a negative association.

Sexual Functioning

Female participants. As seen in Table 3, the overall model for female sexual functioning was significant. For female participants greater mutualistic talk was associated with greater sexual functioning, whereas use of individualistic talk was not associated with sexual functioning. There was a significant main effect for perceived partner responsiveness (PPR) to

sexual talk, such that greater PPR was associated with greater sexual sexual functioning. PPR to sexual talk did not moderate the association between mutualistic or individualistic talk and sexual functioning for female participants.

Male participants. As seen in Table 3, the overall model for male sexual functioning was significant. There was no significant main effect for individualistic or mutualistic talk and no significant interactions between individualistic or mutualistic talk and PPR to sexual talk for male sexual functioning. However, there was a significant main effect for PPR to sexual talk, such that greater PPR to sexual talk was associated with greater sexual functioning for male participants.

[Table 3 near here]

Sexual Distress

As seen in Table 3, the overall model for sexual distress was significant. There was no main effect of individualistic talk and no significant interaction between individualistic talk and PPR for sexual distress. There was a significant main effect for PPR to sexual talk, such that greater PPR to sexual talk was associated with less sexual distress. Mutualistic talk was not associated with sexual distress; however, there was a significant interaction between mutualistic talk and PPR. The simple slopes indicated that at lower levels of PPR ($-1 SD$), greater mutualistic talk was associated with greater sexual distress [$B = 0.82, t(302) = 4.49, p < .001$], whereas at higher levels of PPR ($+1 SD$), greater mutualistic talk was associated with less sexual distress [$B = -0.57, t(302) = -3.07, p < .01$]. The J-N plot for this model (Figure 1B) showed that for values of PPR lower than 22.72 or greater than 27.42, the effect of mutualistic talk on sexual distress was significantly different from zero. Thus, when PPR was lower than 22.72 (28.38% of the sample), using more mutualistic talk was associated with more sexual distress, whereas when

PPR was greater than 27.42 (as it was for the majority of our sample; 71.62%), using more mutualistic talk was either not significantly associated with sexual distress (33.34% of the sample) or was associated with lower sexual distress (38.28% of the sample).

[Figure 1 near here]

Relationship Satisfaction

As seen in Table 3, the overall model for relationship satisfaction was significant. There was no significant main effect of mutualistic talk and no significant interaction between mutualistic talk and PPR for relationship satisfaction. Reporting greater individualistic sexual talk was associated with poorer relationship satisfaction; however, there was no significant interaction between individualistic talk and PPR. Greater PPR to sexual talk was associated with greater relationship satisfaction, regardless of the use of individualistic or mutualistic sexual talk.

Discussion

The present study examined the associations between sexual talk and sexual well-being and relationship satisfaction in individuals in committed romantic relationships, and how perceived partner responsiveness to sexual talk moderated these associations. Findings indicated that engaging in more mutualistic talk was associated with lower sexual distress and higher female sexual functioning, whereas using more individualistic talk was associated with lower relationship satisfaction. Further, perceived partner responsiveness to sexual talk moderated two of the associations such that engaging in more sexual talk was associated with greater sexual satisfaction and less sexual distress when partners were perceived as *more* responsive and poorer sexual satisfaction and greater sexual distress when partners were perceived as *less* responsive. These findings are in line with theory suggesting that perceived partner responsiveness is an important contextual variable for understanding couple interactions as they relate to sexual

outcomes (e.g., Reis, 2012). Results also suggested that the role of sexual talk for sexual functioning may be different for those who identify as female and male: sexual talk focused on sharing the experience with one's partner (i.e., mutualistic talk) was associated with greater sexual functioning—but only for female participants. Finally, the findings of the current study extend knowledge about sexual talk by examining its associations with novel domains of sexual well-being that have not been examined previously, including sexual functioning and sexual distress. The inclusion of multiple domains of sexual well-being is a more holistic approach, which is in accordance with WHO definitions (2015) and recent attempts to clarify and refine the meaning of sexual well-being (Martin & Woodgate, 2017).

Mutualistic Sexual Talk

Consistent with our hypotheses, as well as prior research (Jonason et al., 2016), engaging in more mutualistic talk was associated with greater sexual functioning for female participants. However this association was not moderated by perceived partner responsiveness as we expected. Engaging in more mutualistic sexual talk, such as giving instructions and feedback to a partner about one's sexual pleasure, may—via the instrumental pathway—allow a partner to better understand one's sexual preferences and respond accordingly, leading to enhanced feelings of desire and arousal, and greater orgasmic capacity.

While perceived partner responsiveness did not moderate the above association, it did moderate the associations between mutualistic talk and sexual distress. At greater levels of perceived partner responsiveness, using more mutualistic talk was associated with less sexual distress, whereas at lower levels of perceived partner responsiveness it was associated with more distress. Sexual distress refers to feelings of frustration, anxiety, and worry regarding one's sexual activity and sexual relationship (Derogatis et al., 2008; Meston & Derogatis, 2002;

Stephenson & Meston, 2010). If someone is engaging in a lot of sexual talk that is focused on sharing the experience with their partner, and they do not perceive their partner as being responsive, then this perception may exacerbate and heighten thoughts and feelings of vulnerability during sex (e.g., worries about performance, concerns about body image) or relational insecurities (e.g., attachment anxiety), resulting in greater sexual distress. If someone is engaging in a lot of sexual talk that is focused on sharing the experience with their partner, and they perceive their partner as *more* responsive to this talk, then this situation may bolster feelings of intimacy and direct one's attention towards positive sexual cues (e.g., own and partner pleasure) thus soothing any sexual concerns they may have and ensuring that sexual needs are met. Negative and positive cognitive-affective appraisals about sex have been linked to more and less sexual distress, respectively, in prior research (e.g., Bois et al., 2016; Robbins & Reissing, 2018; Stephenson & Meston, 2010). Future longitudinal research should test the possible mechanisms through which sexual talk and perceived partner responsiveness to sexual talk may contribute to lower sexual distress.

The observed association between mutualistic talk and sexual functioning for female—but not male—participants is consistent with past literature that has found gender differences in erotic plasticity (i.e., the degree to which sexual attitudes, behaviour, and desire are shaped by social and cultural factors; see Baumeister, 2000). There is evidence that those who self-identify as women have greater erotic plasticity (Baumeister, 2000), so one might expect that social factors such as sexual talk would have a larger effect on sexual functioning for women, compared to those who identify as men. This finding is also consistent with research by Rehman et al. (2011), who found that sexual self-disclosure (a component of sexual communication) was more relevant for women's sexual functioning than men's. However, given the cross-sectional

design of the current study, these results should be replicated and directionality should be examined in future research.

Surprisingly, contrary to the results of Jonason et al. (2016), mutualistic talk was not associated with relationship satisfaction. The current results suggest that mutualistic sexual talk is more important for sexual well-being and the potential benefits do not appear to extend to broader evaluations of the overall romantic relationship when perceived partner responsiveness is taken into account.

Individualistic Sexual Talk

Engaging in more individualistic talk was associated with lower relationship satisfaction, but was not significantly associated with sexual satisfaction, sexual functioning, or sexual distress. The findings stand in contrast to the results from Jonason et al. (2016), who found that engaging in more individualistic talk was associated with greater sexual satisfaction and was not significantly associated with relationship satisfaction. Our sample was comprised of people currently in committed, sexually active, romantic relationships, whereas Jonason et al.'s (2016) sample also included people who were single or in more casual relationships, and who may not have been sexually active. Perhaps the self-focused nature of individualistic talk can be experienced as neglecting the partner in what is an inherently dyadic sexual experience, and is therefore linked to the relationship satisfaction of people in more committed relationships. This explanation suggests that perceived partner responsiveness should play an integral role in determining the associations between individualistic talk and outcomes; the current findings support this assertion.

Indeed, at lower levels of perceived partner responsiveness, engaging in more individualistic talk was associated with lower sexual satisfaction, whereas at higher levels of

perceived partner responsiveness, engaging in more individualistic talk was associated with greater sexual satisfaction. When people engage in individualistic talk and feel understood and cared for by their partner and that their partner is open to participating in their sexual desires, this might foster an interpersonal context that facilitates sexual growth and connection (e.g., broadening of sexual scripts), resulting in enhanced sexual satisfaction. A recent study demonstrated that people who reported engaging in a wider variety of sexual experiences also reported greater sexual satisfaction, compared to those that engaged in less variety (Frederick, Lever, Gillespie, & Garcia, 2017). Additionally, a study examining the components of ‘optimal’ sexual experiences found that a strong connection with one’s sexual partner (regardless of relationship duration) was a key component of a great sex life (Kleinplatz et al., 2009). It is worth noting that while approximately 44% of our sample perceived partner responsiveness to be high enough to indicate a positive association between individualistic talk and sexual satisfaction, almost 29% reported perceived partner responsiveness low enough to be less sexually satisfied when using more (compared to less) individualistic talk. When people engage in more self-focused sexual talk, such as talking about sexual fantasies, and do not perceive their partner as responsive (e.g., they perceive their partner as ignoring or invalidating their sexual fantasies) this may prevent the couple from meeting each other’s sexual needs or make them feel rejected by their partner (which is a common fear when communicating sexually; Ménard & Offman, 2009; Rehman et al., 2017; Rehman et al., 2011)—possibly contributing to lower sexual satisfaction.

However, the feelings of rejection experienced when someone uses individualistic sexual talk and perceives their partner as less responsive were not relevant to perceptions of relationship satisfaction. Prior research has consistently demonstrated that people experience lower

satisfaction in their relationship when they perceive their partner to be less responsive (e.g., Reis, 2012). In the present study, individualistic talk was associated with lower relationship satisfaction, regardless of the level of perceived partner responsiveness. The self-focused nature of individualistic talk may neglect the couple experience and relate to lower feelings of connection and intimacy with a partner, and thus lower relationship satisfaction.

Finally, there were no significant associations between individualistic talk and sexual distress or sexual functioning, regardless of level of perceived partner responsiveness. It appears that despite reporting lower sexual satisfaction, those engaging in more individualistic talk did not experience greater sexual distress or poorer sexual functioning—even when partners were perceived as less responsive. This finding highlights the importance of using a more holistic approach to examining sexual well-being, as sexual talk exhibited unique associations with the different domains of sexual well-being. It is worth noting that the level of sexual functioning in our sample was relatively high and the level of sexual distress was quite low overall. It is possible that an association between individualistic talk, perceived partner responsiveness, and sexual distress might emerge for couples experiencing sexual dysfunctions. It is important to note that this result contrasts with the findings for mutualistic talk, which *was* linked to sexual distress and sexual functioning for male participants. Thus, individualistic sexual talk appears to be more important for the interpersonal components of sexual well-being (i.e., sexual satisfaction), rather than the physical experience of sexual function.

Perceived Partner Responsiveness.

Interestingly, we also found that perceived partner responsiveness to sexual talk was consistently associated with all the outcome variables in the study, even when the sexual talk itself was not directly associated with these areas of well-being. Specifically, when partners were

perceived as more responsive to sexual talk, regardless of the type of sexual talk used, this responsiveness was associated with greater sexual satisfaction and sexual functioning, lower sexual distress, and greater relationship satisfaction. These results suggest that perceiving a partner to be accepting validating, understanding, and caring in response to sexual talk matters above and beyond the *type* of sexual talk used. While we did not observe a significant association between mutualistic talk and relationship satisfaction in the regression model, these variables were positively correlated. It is possible that the inclusion of perceived partner responsiveness in this model overpowered the effects of mutualistic talk. This result helps to explain the discrepancy between our findings and that of Jonason et al., (2016), who did not consider perceived partner responsiveness to sexual talk. When a partner is perceived to be responsive to sexual talk, it may reflect more compatible sexual scripts and shared pleasure, decreased anxiety, and greater feelings of intimacy—which may then contribute to greater sexual and relationship well-being. Indeed, previous research has found that greater perceived partner responsiveness is related to greater feelings of intimacy (e.g., Otto et al., 2015), as well as soothing emotional and physical stress responses (e.g., Slatcher et al., 2015), which are common feelings that occur during sexual communication (e.g., Ménard & Offman, 2009). Possible mediating factors for the associations between perceived partner responsiveness to sexual talk and sexual and relationship well-being should be explored in future longitudinal research.

Strengths and Limitations. This study was the first to our knowledge to examine sexual talk in a sample of sexually active individuals currently in committed romantic relationships. Individuals who are in committed, sexually active, relationships are at higher risk of declines in sexual well-being and relationship satisfaction (e.g., Birditt et al., 2012; Kamp Dush et al., 2008; McNulty & Widman, 2013; Schmiedeberg & Schroder, 2016). The current findings provide

information about specific factors—sexual talk and perceived partner responsiveness to sexual talk—that might help these couples maintain or enhance these areas of their relationships, although further study is required to determine causality. The present study also confirmed the factor structure of the SexTalk measure designed by Jonason et al. (2016) by conducting an EFA according to best practices (Sakaluk & Short, 2017), providing further validation of the measure. Further, assessing the moderating role of perceived partner responsiveness to sexual talk answers the call for better integration of the interpersonal context in sex research (Muisse, Maxwell, & Impett, 2018), and provides a more nuanced understanding of contextual factors that may be important for sexual communication variables. Finally, from a theoretical standpoint, this study elaborated on existing models of sexual communication (i.e., the two-pathways model of sexual communication), which have primarily been studied in relation to more general sexual communication that largely occurs outside of sexual interactions.

The limitations of this study are also worth noting. First, the study sample was relatively homogeneous in terms of ethnicity, socioeconomic status, education level, and gender identity (i.e., most of our sample self-identified as cis-gender), which limits the generalizability of our findings. While it is possible that the nature of an online study led to a W.E.I.R.D. sample (i.e., Western, educated, industrialized, rich, and democratic; Henrich, Heine, & Norenzayan, 2010), the enhanced anonymity and ability to reach larger and more diverse samples (e.g., better representation of LGBTQ+ individuals) provided by online studies make this methodology important in sex research, especially when discussing sensitive topics such as sexual talk (Robertson, Tran, Lewark, & Epstein, 2018). Indeed, approximately 11% of the current sample self-identified as non-heterosexual (i.e., asexual, bisexual, lesbian, gay, gender-fluid, pansexual). Given that population-based surveys indicate that 4.0 to 5.6% of individuals in the United States

identify as LGBT (Gates, 2014), the current sample actually over-represents this group. Second, although our hypotheses and interpretation of the findings had a strong theoretical basis, the cross-sectional design did not allow us to examine the direction of the associations. For example, being more sexually satisfied may promote greater engagement in sexual talk that is focused on sharing the experience with one's partner (i.e., mutualistic talk), whereas being less sexually satisfied may encourage more self-focused sexual talk (i.e., individualistic talk), such as speaking about sexual fantasies, in an attempt to increase one's own sexual satisfaction. It will be important for future research to use both longitudinal and experimental designs to examine the temporal order of these relationships and determine causality. Third, the current sample was relatively satisfied sexually and in their relationships, with high sexual functioning and low sexual distress overall. It is possible that the results might differ for people who struggle more in these areas (e.g., individuals coping with sexual dysfunctions), especially given evidence that sexual communication tends to be poorer among those with sexual dysfunctions compared to those without (e.g., Pazmany et al., 2015).

Conclusions. The present study addressed an important gap in knowledge by focusing on the associations between sexual talk that occurs *during* sexual activity; an area of sexual communication that has largely been neglected. The current results suggest that theoretical models of sexual communication should be expanded to consider communication that occurs exclusively during sexual activity and is specifically about the sexual activity being engaged in. Future research should examine whether patterns and styles of sexual talk, as well as their implications for sexual well-being and relationship satisfaction, might differ according to these contexts. The present study suggests that mutualistic and individualistic sexual talk are differentially associated with sexual well-being and relationship satisfaction. Moreover, the

results emphasized the importance of considering contextual factors, such as PPR, when examining communication during sexual activity. Specifically, PPR may be especially important when it comes to engaging in sexual talk that is focused on the self (i.e., individualistic talk), whereas engaging in sexual talk that focuses on sharing the experience with one's partner (i.e., mutualistic talk) may be beneficial for both sexual well-being and relationship satisfaction, largely regardless of how understanding, validating, or caring a partner is perceived to be in response to this talk. Future research should examine the proposed mechanisms for the associations between sexual talk and sexual well-being and relationship satisfaction (e.g., intimacy, broadening sexual scripts, soothing concerns about vulnerability during sex) and examine sexual talk using dyadic methodology to investigate how sexual talk and perceived partner responsiveness affects a partner's sexual and relational well-being. A better understanding of how, when, and why different types of sexual talk are beneficial for people in long-term relationships may help couples maintain or even enhance their sexual well-being and relationship satisfaction over time.

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