



Brief Report

Who is having more and better sex? The Big Five as predictors of sex in marriage



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ABSTRACT

Prior research has been somewhat inconsistent in demonstrating links between personality and sexual functioning. We pooled the data from three independent daily-diary studies of newlywed couples to examine the association between individuals' Big Five traits and the probability of sex on a given day; we also pooled the data from the two studies that assessed satisfaction with sex to examine the association between these traits and individuals' satisfaction with sex when it occurred. Couples with wives high in agreeableness engaged in more frequent sex. Husbands low in openness or neuroticism and wives low in neuroticism reported increased satisfaction with sex when it occurred. Partner personality was unrelated to satisfaction with sex when it occurred.

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1. Introduction

It is impossible to completely understand romantic relationships without understanding the role of the specific qualities of the couple members themselves. Indeed, in some of the earliest research on romantic relationships, Terman, Bittenweiser, Ferguson, Johnson, and Wilson (1938) argued that certain personality characteristics constitute an "aptitude for marriage." More recently, Karney and Bradbury's (1995) vulnerability-stress-adaptation model of marriage highlighted the fact that intimates' enduring characteristics (e.g., personalities) influence relationship processes (e.g., behaviors) that influence relationship outcomes (e.g., satisfaction).

For the past several decades, the five-factor model of personality (consisting of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience; McCrae & Costa, 1997) has been the dominant conceptualization of personality. According to many personality theorists, the Big Five describe all, or at least most, meaningful individual differences. Although there is no corresponding dominant conceptualization of interpersonal processes, one defining feature of romantic relationships is sex (see Baumeister & Bratslavsky, 1999). Indeed, intimates' evaluations of their sexual relationship are strongly predictive of their evaluations of their relationship generally (McNulty, Wenner, & Fisher, 2016). Thus, understanding the link between the Big Five and

sexual functioning may help provide a deeper understanding of romantic relationships.

Nevertheless, research on the extent to which the Big Five are associated with sexual functioning has yielded inconsistent findings. For example, prior research has demonstrated that individuals high in conscientiousness report engaging in sexual intercourse less frequently (Heaven, Fitzpatrick, Craig, Kelly, & Sebar, 2000), that individuals high in neuroticism report lower levels of global sexual satisfaction (Costa, Fagan, Piedmont, Ponticas, & Wise, 1992; Fisher & McNulty, 2008; Heaven et al., 2000; Shafer, 2001), and that women high in openness and their partners report increased global satisfaction with sex (Donnellan, Conger, & Bryant, 2004). Yet, other research has produced different findings. Shafer (2001) demonstrated that conscientiousness is unassociated with sexual frequency, and Heaven et al. (2000) demonstrated that women's openness is unassociated with sexual satisfaction. Accordingly, research must continue to examine associations between the Big Five and sexual functioning to build a more consistent and informative literature.

Only research based on sound methods will move our science forward, however, and there are several methods that may do so. First, research may benefit from examining the extent to which individuals' Big Five traits predict sexual functioning in samples of couples in committed relationships. Given that the association between personality and sexual functioning may differ depending on attitudes toward uncommitted sex and the availability of a sex partner, inconsistencies may arise due to variability in participants' relationship status. Although Costa et al.'s (1992) sample was

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partially comprised of married and cohabiting individuals, it also included single, divorced, and widowed individuals. Likewise, Heaven et al. (2000) utilized a sample of college students, some of whom were likely single. Second, research may benefit from examining the influence of both partners' personality traits simultaneously. Given that both partners play a role in shaping relationships, and given that such traits may be correlated in particular ways, isolating the effects of one partner's personality requires accounting for the other partner's personality (see McNulty, 2013). Yet, to our knowledge, very little research has simultaneously examined the association between both partners' personality traits and couples' sexual frequency and satisfaction (see Costa et al., 1992; Donnellan et al., 2004; Heaven et al., 2000; Shafer, 2001; for an exception, see Daspe, Sabourin, Lussier, Péloquin, & Wright, 2015). Third, given that theoretical perspectives suggest personality exerts influences on interpersonal processes like sex (see Karney & Bradbury, 1995), tests of this association should assess personality prior to the sexual behavior. Yet, the vast majority of prior research has measured personality and sex simultaneously (e.g., Costa et al., 1992; Donnellan et al., 2004; Heaven et al., 2000; Shafer, 2001). Of course, even studies that assess personality at one assessment and sexual functioning at a future assessment introduces biases associated with retrospective reports, as participants are asked to report on prior sexual behavior. Thus, research may benefit most from minimizing the time that has elapsed between sexual behavior and assessments of that behavior through experience-sampling methodologies. Finally, research may benefit from using large samples to maximize power, as small samples can increase both Type I and Type II error rates (see Finkel, Eastwick, & Reis, 2015).

1.1. Overview of current study

We pooled the data from three independent diary studies of newlywed couples to examine the association between couples members' Big Five traits and the probability of sex; we pooled the data from the two studies that assessed satisfaction with sex to examine associations among these traits and satisfaction with sex when it occurred. In all three studies, we assessed both partners' personality and included a 14-day diary component that required both members of the couples to report each day whether they had sex; in two of the studies, we additionally assessed how satisfied participants were with sex they reported had occurred. The parallel procedures of the three studies allowed us to analyze them together to maximize power.

2. Method

2.1. Participants

The first sample was drawn from a broader longitudinal study of 113 newlywed couples in Texas—13 couples could not be included in analyses because the members did not complete any diary reports ($n = 12$) or all personality measures ($n = 1$). Couples were married fewer than four months, and husbands and wives were 27.86 ($SD = 4.38$) and 26.66 ($SD = 4.45$) years of age, respectively. The second sample was drawn from a broader study of 120 newlywed couples—1 lesbian couple and 1 couple in which the husband did not complete all personality measures were excluded. Couples were married fewer than three months, and husbands and wives were 31.91 ($SD = 9.77$) and 29.69 ($SD = 7.70$) years of age, respectively. The third sample was drawn from a broader study of 135 newlywed couples. These couples first answered questions about their daily sexual behavior during a supplemental diary assessment offered at the sixth wave of data col-

lection, three years into the marriage; thus, only participants who completed that assessment were asked to complete the diary portion of the study. Of the 73 couples who completed the sixth assessment, 60 couples completed the diary. At baseline, couples were married fewer than six months, and husbands and wives were 26.03 ($SD = 4.23$) and 23.85 ($SD = 3.52$) years of age, respectively, making them approximately the age of the couples in the other two samples when they completed the diary. Couples in the first two samples reported on sexual activity and satisfaction with sex; couples in the third sample only reported on sexual activity. Thus, our analyses of sexual activity were based on 278 couples whereas our analyses of satisfaction with sex were based on 218 couples. Recruitment strategies and additional sample characteristics appear in supplementary materials.

2.2. Procedure

All couples attended a laboratory session. Before the session, they were either emailed or mailed survey measures to complete at home, which included a measure of the Big Five. At their laboratory sessions, participants completed a variety of tasks beyond the scope of the current analyses and were compensated (\$100 for the first and second studies; \$80 for the third study). Before leaving the lab, both partners in the first and second studies were offered the opportunity to complete a paper and pencil or computerized daily survey every night for the subsequent 14 nights that asked about various daily activities, including whether the couple had engaged in sex that day and their satisfaction with sex if it occurred. For couples in the third study, both partners were contacted approximately three years later and offered the opportunity to complete a paper and pencil or computerized daily survey similar to the one offered to couples at baseline in the first two studies. All couples were paid \$35 for completing all 28 diaries, or \$1.00 per diary if they failed to complete all days. The majority (>80% in each study) chose electronic assessments over paper and pencil and care was taken to ensure that all electronic entries were completed on a daily basis. Compliance was high across all studies; husbands returned 11.83 ($SD = 3.41$) diaries and wives returned 11.90 ($SD = 3.52$) diaries; 52% of husbands and 57% of wives completed all 14 reports.

2.3. Measures

2.3.1. Personality

All participants answered items from the International Personality Item Pool (Goldberg, 1999). Given broader considerations of the study, participants in the first study completed the 60-item versions of the neuroticism and conscientiousness subscales and the 10-item versions of the extraversion, agreeableness, and openness subscales. Participants in the second study completed the 60-item versions of all subscales. Participants in the third study completed the 10-item versions of all subscales. Internal consistency was adequate; descriptive statistics and alphas appear in supplemental materials.

2.3.2. Sex

Every night of the diary, both spouses responded to the question: "Did you have sex with your partner today?" As others have documented (Jacobson & Moore, 1981), spouses do not always report the same daily behaviors, including sex. Indeed, across the three studies, the correlation between spouses' reports was 0.83. We formed a dummy code for sex that was coded 1 if both partners reported they had sex that day or if one partner reported they had sex and the other partner did not complete the diary that day, and 0 if neither or only one partner reported the couple had sex that day.

2.3.3. Satisfaction with sex

Participants in the first two studies who reported that they had engaged in sex that day responded to the question: “How satisfied were you with the sex you had with your partner today?,” on a 7-point scale, where 1 = *not at all* and 7 = *very*.

2.4. Data analysis

Given the non-independent nature of the data, we employed multilevel modeling with the HLM 7 computer program. The dummy code of frequency of sex was repeated within couples. Thus, we examined the associations between spouses' personality and the couples' frequency of sex by estimating the following level-1 equation of a two-level model:

$$Y_{ij}(\text{Sex}) = \beta_{0j}(\text{Intercept}) + \beta_{1j}(\text{Day of Diary Entry}) + r_{ij} \quad (1)$$

where (a) Day of Diary Entry (a time-varying covariate) was mean centered, and (b) given the dichotomous nature of Sex, we specified a Bernoulli sampling distribution. The intercept from Eq. (1) represents the probability of sex on a given day, which we then regressed onto husbands' and wives' Big Five traits simultaneously (10 traits in total) at Level 2, along with two dummy codes for the studies as covariates. We allowed the intercept to vary randomly across couples. We tested for sex differences in these effects by creating contrasts using HLM's hypothesis testing option.

Given that each couple member could have a unique satisfaction with the sex that occurred, spouses' satisfaction with sex involved a further level of nesting: repeated reports were nested within individuals who were nested within couples. Thus, we examined the associations between spouses' personality and spouses' satisfaction with sex when it occurred by estimating the following level-1 equation of a three-level model:

$$Y_{ti}(\text{Satisfaction with Sex}) = \pi_{0i}(\text{Intercept}) + \pi_{1i}(\text{Day of Diary Entry}) + e_{ti}, \quad (2)$$

where (a) Day of Diary Entry (a time-varying covariate) was mean centered, (b) the intercept from Eq. (2) was regressed onto own and partner Big Five traits simultaneously (10 traits in total) at Level 2 and a dummy code for study at Level 3, and (c) the level-2 and level-3 intercepts were allowed to vary randomly across people and couples, respectively. To obtain separate estimates for husbands and wives, we allowed all variables to interact with participant sex at Level 2 and estimated Eq. (2) twice—once using a dummy variable with husbands coded 0 to obtain the simple effects for husbands and once using a dummy variable with wives coded 0 to obtain the simple effects for wives. The interactions themselves tested for sex differences in these effects. Finally, in addition to controlling for idiosyncratic differences across studies with the level-3 dummy codes, we tested whether any significant effects varied across study by regressing those effects onto the study dummy codes at Level 3. No significant associations differed significantly across the studies.¹

¹ We conducted three follow-up analyses. In the first analysis, we examined whether sample moderated the positive associations between (a) wives' agreeableness and the probability of sex and (b) wives' openness and the probability of sex by including the dummy codes for sample and the necessary interactions. In the second analysis, we examined whether sample moderated the negative associations between husbands' openness and neuroticism and satisfaction with sex and the positive association between wives' openness and husbands' satisfaction with sex by including the dummy codes for sample and the necessary interactions. In the third analysis, we examined whether sample moderated the negative association between wives' neuroticism and satisfaction with sex by including the dummy codes for sample and the necessary interactions. According to all of these analyses, sample did not moderate any of the key effects.

Table 1
Husbands' and wives' Big Five traits predicting probability of sex.

	β	SE	OR	CI _{95%}
Intercept	-1.29***	0.06	0.27	0.24, 0.31
Day of diary	-0.01	0.01	0.99	0.98, 1.01
Husbands' extraversion	0.15	0.10	1.16	0.95, 1.41
Husbands' agreeableness	0.02	0.12	1.02	0.80, 1.31
Husbands' conscientiousness	-0.07	0.15	0.93	0.70, 1.25
Husbands' openness	-0.04	0.11	0.96	0.77, 1.19
Husbands' neuroticism	-0.07	0.12	0.93	0.74, 1.17
Wives' extraversion	-0.16	0.10	0.86	0.70, 1.05
Wives' agreeableness	0.37**	0.13	1.44	1.11, 1.87
Wives' conscientiousness	-0.18	0.14	0.84	0.63, 1.10
Wives' openness	0.20 [†]	0.11	1.22	0.98, 1.52
Wives' neuroticism	0.04	0.12	1.04	0.83, 1.32

Note. $df = 3161$ for day of diary; $df = 265$ for all other variables. CIs are for ORs.

[†] $p < 0.10$.

** $p < 0.01$.

*** $p < 0.001$.

3. Results

Couples reported having sex on 811 out of the 3493 (23.21%) diary reports that were completed, or 3–4 of the 14 days of the diary. This frequency is similar to that of other samples of newlywed couples (e.g., McNulty et al., 2016).

Results from the analysis examining the associations between spouses' personality and couples' frequency of sex are presented in Table 1. Husbands' Big Five traits were all unrelated to the probability of sex on a particular day. In contrast, wives' agreeableness was positively associated with the probability of sex on a particular day and wives' openness was marginally positively associated with the probability of sex on a particular day. Wives' agreeableness predicted the probability of sex more strongly than did husbands' agreeableness, $X^2(1) = 3.99$, $p = 0.043$, and, even though neither effect was significantly different from 0, the associations involving husbands' and wives' extraversion were significantly different from one another, $X^2(1) = 5.01$, $p = 0.022$.

Spouses in the first two studies reported being relatively satisfied with sex when it occurred, $M = 6.21$. Nevertheless, there was substantial variability in these reports, $Var = 1.27$; 69.16% of this variance occurred within individuals, 14.33% of this variance occurred between individuals, and 16.51% of this variance occurred between couples. We predicted that spouses' personality traits account for this between-person variance.

Results from the analysis examining the associations between spouses' personality and spouses' satisfaction with sex when it occurred are presented in Table 2. Husbands' openness and neuroticism were negatively associated with husbands' satisfaction with sex and husbands' agreeableness was marginally positively associated with husbands' satisfaction with sex. Wives' neuroticism was negatively associated with wives' satisfaction with sex and wives' openness and conscientiousness were marginally positively associated with wives' satisfaction with sex. The effects involving husbands' agreeableness and openness were stronger than the corresponding effects involving wives' agreeableness and openness, and, though neither was significant, the effects involving husbands' and wives' extraversion were significantly different from one another. Partner personality was unrelated to satisfaction with sex for both husbands and wives.

4. Discussion

Whereas none of husbands' personality traits were related to the probability that couples engaged in sex, wives' agreeableness and openness were positively associated with the probability that

Table 2
Husbands' and wives' Big Five traits predicting satisfaction with sex.

	Husbands' satisfaction with sex				Wives' satisfaction with sex				Sex difference
	Effect size				Effect size				
	β	SE	<i>r</i>	CI _{95%}	β	SE	<i>r</i>	CI _{95%}	
Intercept	6.26***	0.07	–	6.12, 6.39	6.14***	0.07	–	5.97, 6.21	0.916
Day of diary	–0.00	0.01	0.00	–0.02, 0.01	–0.01	0.01	0.05	–0.02, 0.01	0.289
Own extraversion	0.10	0.09	0.07	–0.07, 0.28	–0.11	0.09	0.07	–0.29, 0.08	0.087 [†]
Own agreeableness	0.21 [†]	0.12	0.11	–0.03, 0.45	–0.11	0.11	0.06	–0.33, 0.12	0.060 [†]
Own conscientiousness	0.07	0.11	0.04	–0.15, 0.29	0.23 [†]	0.14	0.10	–0.04, 0.50	0.378
Own openness	–0.23*	0.09	0.16	–0.41, –0.05	0.17 [†]	0.10	0.10	–0.03, 0.38	0.005**
Own neuroticism	–0.31**	0.10	0.19	–0.51, –0.11	–0.33**	0.11	0.18	–0.55, –0.11	0.876
Partner extraversion	0.02	0.07	0.02	–0.13, 0.17	–0.02	0.08	0.01	–0.18, 0.15	0.742
Partner agreeableness	0.01	0.10	0.01	–0.20, 0.22	–0.06	0.10	0.04	–0.26, 0.14	0.646
Partner conscientiousness	0.01	0.11	0.01	–0.21, 0.23	0.12	0.13	0.06	–0.14, 0.39	0.531
Partner openness	0.17	0.10	0.12	–0.04, 0.38	–0.01	0.10	0.00	–0.22, 0.20	0.246
Partner neuroticism	–0.14	0.09	0.09	–0.33, 0.05	–0.04	0.11	0.02	–0.26, 0.19	0.476

Note. *df* = 627 for day of diary; *df* = 276 for intercept, *df* = 257 for all other variables. Sex differences represent tests of Personality × Sex interactions.

[†] *p* < 0.10.

* *p* < 0.05.

** *p* < 0.01.

*** *p* < 0.001.

couples engaged in sex over the course of a two-week diary, though the association involving wives' openness was only marginally significant. The association between wives' agreeableness and probability of sex was significantly stronger than the corresponding non-significant effect involving husbands' agreeableness. Additionally, both husbands and wives low in neuroticism, as well as husbands low in openness, reported increased satisfaction with sex when sex occurred; also husbands high in agreeableness, as well as wives high in openness and conscientiousness, reported marginally increased satisfaction with sex when it occurred. The association between wives' openness and satisfaction was significantly different from the corresponding negative effect involving husbands' openness, and the association between husbands' agreeableness and satisfaction was significantly stronger than the corresponding non-significant effect involving wives' agreeableness. Partners' personality traits were unrelated to satisfaction with sex when it occurred.

The current research has at least three novel implications. First, it suggests that it is women's, rather than men's, personality that predicts the probability of sex in relationships. Given that men desire (Baumeister, Catanese, & Vohs, 2001) and initiate (Peplau, 2003) sex more frequently than women, women have been labeled the "gatekeepers" of sex within relationships (Vohs & Baumeister, 2004). Thus, it is perhaps not surprising that couples in which the wife is high in agreeableness, and thus places higher emphasis on interpersonal relationships, or openness, and thus is more receptive to novelty, reported having more sex, though the effect involving wives' openness was only marginally significant. Second, this research indicates that the negative associations between neuroticism and global sexual satisfaction that have emerged in past research (e.g., Costa et al., 1992; Fisher & McNulty, 2008; Heaven et al., 2000; Shafer, 2001) extend to daily evaluations of specific acts of sex. We hesitate to speculate on why openness was differentially associated with satisfaction with sex for men and women, but future research may be particularly likely to benefit from attempting to understand this difference. Finally, in contrast to prior research demonstrating associations between spouses' partners' personality and global evaluations of the sexual relationship (e.g., Fisher & McNulty, 2008; Shackelford & Buss, 2000), the current findings demonstrated that only spouses' own personality was associated with satisfaction with specific daily acts of sex. Future research may benefit from examining whether one's own qualities are more predictive of evaluations of specific acts of sex

whereas both partners' qualities shape more global evaluations of the sexual relationship.

Nevertheless, all conclusions should be drawn with caution in light of several limitations. First, all participants were assessed within the first several years of marriage and all diary methods were limited to two weeks. These findings may not generalize to couples in different phases of their relationships or longer durations of time. Second, all of the data examined here are correlational and thus cannot support strong causal conclusions. Further, though we were able to estimate the effects of own and partner Big Five traits simultaneously, we were unable to control other potential third variables.

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.jrp.2016.05.010>.

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