Sex in its daily relational context

Introduction. The present study measured the daily correlates of sexual behavior in an ecologically valid context by relying on a daily diary approach. *Aim.* Examining the dyadic and multicomponent nature of sexual behavior is essential to create valid models of sexual responding that are better aligned with the day-to-day context of having sex in a relationship. *Method and Main Outcome Measures.* During three weeks, heterosexual couples completed, two times a day, an electronic diary to report on mood, own and perceived partner behavior, relational feelings (in the evening), sexual activity, physical intimacy, and masturbation (in the morning). This design allowed testing bidirectional temporal associations between daily context and different types of sexual behavior. *Results.* Positive mood, displays of positive partner behavior, perceived positive partner behavior, and positive relational feelings predicted more sexual activity and intimacy in men, which then further increased their positive mood, perceived positive partner behavior, and positive feelings about the relationship on the following day. Women showed a similar pattern of predictors regarding sexual activity as men, though the effect of sexual behavior on next-day feelings and behavior was more relationship-oriented rather than affecting personal mood. Intimacy was related to almost all daily variables in women, but related only to own and perceived positive partner behavior and positive relational feelings the next day. Several partner effects also reached significance and these were more influential in predicting male than female intimacy. Solitary sexual activity showed a different pattern of results than dyadic sexual activity, with men experiencing masturbation as negatively in the context of their relationship. *Conclusion.* These results confirm the regulatory function of sex and intimacy in maintaining a positive relational climate and indicate that the quality of the everyday relational context is important to get partners in the mood to act in a sexual way.

KEYWORDS: Daily Diary, Sex, Intimacy, Masturbation, Partner Responses, Relationship, Mood

INTRODUCTION

Through the years, different models have been proposed to explain sexual responding. Although valuable in itself, most of these models focus on individual processes and do not explicate the role of contextual variables. The latter is nevertheless important because sex often takes place in the context of a relationship and is thus strongly influenced by partner responses and relational features [1, 2, 3]. Accordingly, a comprehensive theory of sexual responding needs to include information on the individual, the partner, ànd the relationship (for an overview on the personal, partner, and relational determinants of sexual functioning, see [1]). To reveal the interpersonal dynamics of sexuality, sex research can benefit from the relationship literature in which several models have been developed to define the key ingredients of qualitative and satisfying interactions between partners. Among these, intimacy models are directly relevant to the study of sexuality; ascribing an important role to perceived partner responsiveness and satisfying relationship experiences in shaping daily feelings of intimacy [4, 5]. Bridging the gap between sex and relationship research creates opportunities to develop more valid models on sexual responding that take into account the multi-component, process-oriented, and dyadic nature of sexuality [1]. Such models are highly needed to get scientific research more aligned with the complex reality of having sex in the daily context of the relationship. As a first step in this endeavour, we need to identify the main components of sexual responding in daily life, using methodologies that can capture the dyadic nature of sexuality as it occurs in the natural, daily context of the relationship.

Theories and research so far did not fully consider the multidimensional, interpersonal nature of sexual experiences and are therefore limited in several important ways. First, sex research has a long tradition of studying intra-individual responses, using laboratory-based research designs or cross-sectional surveys in which sexual responses are measured at a single

moment in time. Given that individual lab-testing more likely reflects solitary – rather than intimate – sexual responding and the laboratory context may elicit unnatural responses, such design clearly lowers the ecological validity of sex research [6]. Also note that single-time, retrospective, cross-sectional studies are limited to simply establishing relationships between single components, and are therefore unfit to reveal the complex interrelations between sexual processes [7]. Finally, most studies on sexual behavior focus on a single outcome variable, mainly sexual frequency or sexual function. Given that sexuality can have different meanings for different people, ranging from cuddling and touching to penetration, defining sex in terms of one single sexual act limits our understanding of sexuality in daily life.

The Usefulness of Dyadic Diary Research

To create more ecologically valid and comprehensive models of sexual responding that include both individual and interpersonal variables, we relied on a daily diary methodology, which is a commonly used method in relationship research [8]. Diary methods have become increasingly popular in sex research because they allow capturing detailed experiences in natural contexts near the time of occurrence [e.g., 2, 3, 9, 10, 11]. They are also particularly well-suited to minimize biases due to memory or presence of the laboratory context, and to investigate temporal relations between variables in daily life [7, 8]. The current study used an electronic diary to investigate (1) whether sexual behavior is related to feelings about oneself, the partner, and the relationship during the day, and (2) whether sexual behavior on a given day can predict these variables on the following day. Whereas most studies focus on either determinants or consequences of sexuality, we considered both same-day and next-day relations. Testing both directions of the association between sexual responding and daily context is necessary to get a more complete view on the role of sexual behavior in daily life. Furthermore, by compiling various emotions and behaviors into one

study-design, we may better account for the richness and complexity of sexuality rather than studying single components independently of each other. To capture the dyadic nature of sexual relationships, we included the responses of both couple members and relied on advanced statistical techniques that take into account the hierarchical structure of individual responses nested within couples and the non-independence of observations within individuals over time [12]. The Actor-Partner-Interdependence Model is one such technique that simultaneously estimates the impact of both one's own (i.e. actor effect) and partners' responses (i.e. partner effect) on the outcome variable [13].

To fully address the diversity of sexuality in daily life, we made a distinction between (1) intimate sexual acts such as cuddling, kissing, and non-genital touching, (2) sexual acts that include penetration and genital touching, and (3) individual sexual acts such as masturbation. Focusing on both partnered and non-partnered sex allowed us to explore whether various manifestations of sexual behavior are experienced differently by couples in a steady relationship.

Current Evidence on the Role of Mood, Partner Behavior, and Relationship Feelings in shaping Sexual Behavior

When reviewing extant literature on the personal and relational correlates of sexual behavior, we noticed that, despite the number of theoretical papers describing sexuality as a multidimensional construct [2], research to date has explored the role of only few components, mainly mood and relationship satisfaction. Fragmentary evidence does, however, suggest that daily sexual responding is determined by a variety of emotional and behavioral correlates related to the self, the partner, and the relationship. This will be reviewed below. Another important observation is that research on sexual determinants yields inconsistent results, which could be due to the fact that the evidence stems from separate studies using

different samples and different designs. This precludes a direct comparison between studies and prevents us from drawing definite conclusions on the specific role of individual, partner-related, and relational variables. Hence, to get a more systematic and comprehensive view on sexual responding, it is necessary to integrate all relevant variables into one study design and apply a daily diary method to prospectively monitor and disentangle their interrelations.

Personal Variables: Mood. Of all individual variables that potentially contribute to sexual behavior, the link between mood and sexuality has by far attracted most research attention. For both positive and negative mood, a mix of facilitative, inhibitory, and even null-effects are found in relation to sexual arousal, sexual interest, and sexual activity [14-17]. A few recent studies have adopted a diary methodology to investigate the interrelations between mood and sex on a daily basis [9, 18]. Overall, most results point towards the conclusion that positive mood facilitates sexual responding, whereas negative mood decreases the likelihood of sexual activity and physical affection [9, 3, 18]. The other direction of the relationship, i.e. the impact of sexual activity on mood, is less well investigated. Although common wisdom holds that sex is related to positive affect and overall happiness, there is little research that prospectively monitored the effect of daily sexual behavior on mood. Using a diary method in a sample of mid-aged women, Burleson and colleagues [9] provided first evidence that sexual interaction and physical affection improved mood and reduced stress. Yet, given that only individual female responses were measured, the dyadic nature of these effects remains unexplored. To address this gap, we will measure mood responses of both partners and examine their effect on daily sexual behavior.

Relational Variables: Satisfaction. Although the link between sexual activity and relationship satisfaction is well-documented, research so far yields inconsistent results, with evidence pointing towards the presence as well as absence of an association between both

factors. Whereas some studies revealed that sexual activity and physical intimacy (i.e., kissing, cuddling) are unrelated to relationship happiness for both men and women [19-21], other studies have shown that relationship satisfaction is associated with a more functional sexual response [3] and greater coital frequency and intimacy [19, 21, 22]. When turning to negative relationship feelings, research has shown that relationship distress is related to lower sexual desire, sexual satisfaction, and intimacy [23]. To this point, no diary methodology has yet been applied to disentangle these interrelations in a prospective way and within the everyday context of the relationship. Hence, it remains to be tested whether and to which extent both partners' daily relationship feelings contribute to everyday sexual responding.

Partner Variables. Although the role of the partner has received little research attention so far, it is likely that having sex and experiencing intimacy on a given day depends on how partners behave towards each other and how this behavior is perceived by one another [3, 24]. Intimacy models have identified the important role of perceived partner responsiveness, i.e. the belief that one's partner values and supports important aspects of the self, for developing and maintaining satisfying relationships [4, 5]. In the context of sexuality, it has been shown that displays of affection, support, and understanding by one's partner fuel sexual desire and intimacy [18, 25, 26]. Less work has been done on the impact of negative partner behavior on intimate relationships, especially in the context of sexual behavior. It is yet reasonable to expect that hostility or criticism by one's partner will damage the relationship climate and thereby disrupt sexual interest.

In addition to perceived partner behavior, it is equally important to consider one's own displays of positive and negative behavior towards the partner. Research has shown that providing spousal support strengthens the relationship and prevents relationship conflict, distress, and dissolution [27]. It remains to be explored whether positive behavior towards the

partner has the same beneficial effects on sexual responding. Another issue that needs further exploration is whether having sex and experiencing intimacy on a given day will cause one to behave differently towards the partner and to perceive his/her behavior in more positive or less negative terms on the following day. In a related diary study, it was shown that particularly men report more relationship-enhancing and less relationship-damaging behaviors following days in which they had sex with their partner [28]. However, this study did not differentiate between one's own and perceived partner behavior and the diary included only measures of sexual intercourse, leaving unexplored the impact of intimate acts or masturbation on partner behavior. To deal with these shortcomings and the dearth of evidence on partner responses, we will examine whether and to which extent one's own and perceived partner behavior relates to sexual behavior in a daily context.

Solitary Sex. In addition to partnered sexual activities, we were also interested in exploring the personal, relational, and partner-related determinants and consequences of masturbation behavior in couple relationships. Not much work has been conducted on this topic yet, especially in the context of a daily diary study [29]. This is unfortunate because developing an interpersonal model of sexual responding requires studying not only dyadic outcomes, but also the relational meaning and implications of individual sexual responses [1]. Masturbation has been linked with relationship satisfaction, but research yields inconsistent results. Some studies have shown higher levels of marital satisfaction in men and women who masturbate [30, 31], whereas other research has identified a negative association between relationship satisfaction and masturbation frequency [32]. A prospective diary study may help to clarify the exact nature of this relationship.

The Present Study

Most research so far focused on identifying which variables can predict the occurrence of sexual activity, with some determinants receiving more research attention than others. Whether and how sexual behavior can predict mood, partner behavior, and relationship feelings on the following day is much less explored. To address this gap, we used a daily diary methodology to investigate temporal relations between personal, relational, and partner-related variables on the one hand and sexuality, intimacy, and masturbation on the other hand in the daily lives of heterosexual couples. Although the present study is exploratory in nature, we considered only variables that are theoretically and/or empirically validated as important correlates of daily sexual responding. An important addition to previous diary studies is that we included both male and female partners, and that we measured daily context variables and sexuality at different time points. In most diary studies so far, participants reported on their sexual and relational experiences at one single moment in the evening. However, given that most sexual interactions between partners are likely to occur after retiring to bed and before arising, such design does not allow drawing inferences about whether or not relational feelings and behavior experienced during the day will predict sexual behavior [9]. By reporting on relational experiences in the evening and sexuality in the morning, the present design enabled us to test both directions of the temporal relationship between sexuality and daily relational context.

Given the exploratory nature of this study, we can make only general predictions. We expect that positive mood, positive partner behavior, and positive feelings about the relationship will both fuel into and result from sexual and intimate behavior. Negative feelings and behavior are assumed to yield the opposite effect on sexuality. Given the scarcity of dyadic diary research on sexuality, we do not make specific predictions on gender differences and actor-partner effects.

METHOD

Participants

Sixty-six heterosexual couples participated in this diary-study in return for a monetary award (30 euros). The couples were contacted via social media and by word of mouth and asked to provide diary reports twice a day over the course of 21 consecutive days. Of all couples that were contacted, about 22% refused to participate, mainly because of time constraints or privacy issues (i.e., not wanting to report on intimate topics such as sexual behavior). Given that we calculate only within-effects and have 2 x 21 data points per person, a sample of 66 couples (i.e., 120 individuals) yields sufficient power to detect a medium effect [33]. Potential study participants were included if they (1) were at least 18 years, (2) were in a steady monogamous relationship of at least 1 year, and (3) lived together. The average relationship length of the couples was 9.2 years (ranging from 1 year to 45 years with 50 % of the couples having a relationship of less than 4 years). 28.8 % of the couples were married and 47% had children. 36 % of the participants were students, 39% were employees, 8% were laborers, 13 % owned their own business, and 4 % were unemployed. Women ranged in age from 19 to 65 years ($M = 28. 41$, $SD = 10.56$) and men ranged in age from 21 to 65 years ($M = 30.90$, $SD = 10.39$), with 75 % of the men and women being younger than 35 years.[1]

Procedure

All data were collected via an Internet-based system. Eligible couples were contacted by phone to explain the protocol and run through the diary items in order to ensure a good understanding of all questions. Participants were instructed to fill out the electronic diary independently and to refrain from discussing responses with their partner until completion of

the study. Upon agreement, they were sent an individual code with which they could log in to the online system. First, participants completed a set of electronic questionnaires (which will not be discussed in this paper) including a questionnaire on demographics. From then on, participants reported, each evening during 3 weeks, on individual, relational, and partner-related feelings and behavior experienced during that day. They had a time window from 8 pm to 3 am to complete the evening diary. Each morning, they reported on sexual and intimate behavior since the last time they filled out their morning diary (i.e., sexual behavior of the past 24h). They had a time window from 7 am to 12 pm to complete the morning diary. Electronic time and date stamps were used to monitor and verify compliance with daily questionnaire completion. To improve compliance with the diary protocol, participants received a text message every evening at 21h and every morning at 7h30 to remind them of their diary. The overall completion rate of the diaries was fairly high, yielding only 6.33% of missing data. This study was approved by the Ethical Board of Ghent University.

Material

Context Diary

All personal, partner, and relationship items were scored on a 7 points-scale, ranging from *not at all* to *very much*.

For the personal variables, participants reported on their daily mood by indicating the extent to which they *felt happy, satisfied, full of energy, sad, angry, down, stressed, and frustrated* during the day. Items were drawn from the PANAS [34] and other diary studies on mood [9, 18]. Positive and negative mood scores were calculated by averaging the positive and negative items respectively. Both the positive and negative mood scales showed a good internal consistency, $\alpha = .62$ for *positive mood* and $\alpha = .71$ for *negative mood.*

Own positive partner behavior was measured as the extent to which one had *expressed his/her love to the partner*. Own negative partner behavior was measured as the extent to which one had *behaved negatively towards the partner in terms of complaining, nagging, and criticizing*. Participants also reported on the extent to which they perceived their partner as *being available when needed; being responsive, considerate and supportive; showing interest; behaving cold and distant; and behaving negatively in terms of complaining, criticizing*. Perceived positive and negative partner scores were calculated by averaging the positive and negative items respectively. Internal consistencies of the own and perceived positive and negative partner scales ranged from $\alpha = .58$ to $.82$. The partner items were based on previous diary research examining perceived partner responsiveness and partner behavior in relation to daily sexual activity [2].

For the relational variables, participants reported on relationship feelings by indicating the extent to which they felt *happy, satisfied, understood, supported, accepted, loved, in love, connected, close, uncertain, sad, rejected, criticized, and angry* with regard to their relationship during the day. Positive and negative relationship scores were calculated by averaging the positive and negative items respectively. For both sales, internal consistency was good, $\alpha = .72$ for *positive relational feelings* and $\alpha = .78$ for *negative relational feelings*. The relational items were sampled from previous diary studies examining sexual and relationship variables [4, 9, 24, 35].

Sex Diary

Participants reported on a 7 points-scale, ranging from *not at all* to *very much*, the extent to which intimate acts had occurred with their partner since the last time they completed their morning diary. They also reported whether or not sexual activity with their partner had occurred (yes/no) and whether or not they had masturbated (yes/no). To enhance

accurate recording of physical and sexual intimacy variables, we included highly detailed instructions regarding how these items should be interpreted. Intimacy was described as the amount of kissing, cuddling, and caressing with their partner. Sexual activity was defined as oral sex, genital touching, and vaginal/anal penetration with their partner. Masturbation was defined as any sexual act that involves self-stimulation in the absence of the partner.

When reporting whether sexual activity had occurred that day, participants also had to indicate when they have had sex with their partner. In almost all cases, sex occurred in the evening, night, or in the morning. The number of reported sexual activities during the 21-day study period ranged from 0 to 14 times ($M = 6.98$, $SD = 3.01$). The three couples that reported no dyadic sex during the study period were not taken into account for the analyses on sexual activity. Overall, couple members agreed about having had sex in 98.97 % of the cases. Thirty-five men and 25 women reported having masturbated at least once, with scores ranging up to 10 times for both sexes ($M = 3.69$, $SD = 2.25$ for men and $M = 2.96$, $SD = 2.65$ for women). Overall, men reported more frequent masturbation behavior than women, $diff= .07$, $p < .01$. With regard to intimacy, daily reports of men and women were highly correlated, $r = .72$, $p < .01$.

Data analysis

Personal, Relational, and Partner Predictors of Sexual Behavior. In the first section we examine whether personal, partner-related, and relational variables on a given day can predict the amount of intimacy and the occurrence of sexual activity and masturbation on that day. To account for the dependency of dyadic data and the repeated measurements of daily observations [13, 36], we used multilevel analyses. Models were fitted using the MIXED and GLIMMIX procedure in SAS for continuous and categorical outcomes, respectively. More concretely, we used multilevel linear regression (MIXED) to fit models on intimacy and

mood, partner and relation outcome variables (i.e. continuous variables). Multilevel logistic

regression (GLIMMIX) was used to fit models on sexual activity and masturbation (i.e. count

variables). Because of the limited amount of studies including longitudinal dyadic data on the

interrelations between sexuality, personal, partner, and relationship factors, a separate model

was fitted for each combination of predictor and outcome variables to get a better idea of

which predictors play a role and which not. Variables were person-means centered, meaning

that parameters represent a deviance from his or her own average over the course of the study

(i.e., within-subject effects). All predictor variables had to be lagged because the diaries on

the outcome variables were completed in the morning and were thus coded as the following

day, while the predictor variables of that day were coded as the previous day.

The couple was the main unit of analysis, with male and female responses nested

within the couple. To examine the main study questions, we relied on the Actor Partner

Interdependence Model (APIM) which provides a simultaneous test of actor and partner main

effects as well as actor X partner interactions. Hence, we analyzed (1) the independent effect

of actor's or partner's predictor variables on actor's outcome while the other partner's effects

and actor X partner interactions were controlled for, and (2) the dyadic interaction effects

while controlling for the main actor and partner effects.

For binary outcomes at the individual level, multilevel logistic regression was used.

Because sexual activity is a couple level outcome, no actor and partner effects are reported.

Contribution of Sexuality to Next-Day Personal, Relational, and Partner Variables. In

the second section, we examined whether intimacy, sexual activity, and masturbation on a

given day can predict changes in personal, relational, and partner-related variables on the next

day. To this aim, we examined the main effects of sexuality on a given day on next-day

reports of personal, relational, and partner-related variables, while controlling for previous-

day actor and partner effects of these outcome variables. More details on the analytic plan, including annotated equations of the multi-level regressions, are provided in the appendix.

Results

Table 1 shows that most daily reports of personal, relational, and partner-related variables were interrelated. The dyadic correlations between men and women's reports of daily feelings and behavior were also significant. Table 2 presents the mean scores of the daily context variables. Men and women showed no significant differences on any of the personal, relational, and partner-related variables.

Personal, Relational, and Partner-related Predictors of Sexual Behavior

Partnered Sexual Activity. Multi-level logistic regression analyses revealed that the odds of having sex on a given day increased when men and women experienced more positive mood, displayed more positive relational behavior, perceived the partner's behavior in more positive terms, and experienced more positive relational feelings during the day. For positive partner behavior, we found a significant interaction effect, indicating that partners reinforced each other's behavior in predicting sexuality (see Table 3). In other words, the odds of having sex were higher when both partners behaved in a more positive way towards their partner during the day.[2]

APIM linear regression analyses on level of intimacy showed that men reported higher levels of intimacy when they experienced more positive mood, displayed more positive relational behavior, perceived the partner's behavior in more positive terms, and experienced more positive relational feelings during the day (see Table 4). Interestingly, men also reported higher intimacy when their partner reported feeling more positive and less negative during the day, when she reported displaying more positive relational behavior, when she perceived his

behavior as more positive and less negative, and when she felt more positive about the relationship.

In women, reports of intimacy were related to almost all daily context variables. They reported higher levels of intimacy when experiencing more positive and less negative mood, more positive relational behavior, more positive and less negative perceived partner behavior, and more positive and less negative relational feelings. Several partner effects also reached significance, indicating that women reported more intimacy when their partner experienced more positive mood than usual during the day, displayed more positive relational behavior, perceived her behavior in more positive terms, and felt more positive about the relationship. For positive partner behavior, there was a significant interaction effect, showing that men's positive behavior reinforced women's own positive behavior in predicting intimacy. In other words, women reported higher levels of intimacy when both they themselves and their partner displayed more positive relational behavior.[3]

In addition, we examined between-gender variation in the association between daily context and level of intimacy in order to test whether actor and partner effects differed as a function of gender. Analyses showed that the actor effects of positive partner behavior, $B = .22$ ($SE=.09$) $p < .05$, and positive relational feelings, $B = .30$ ($SE = .08$), $p < .01$, were significantly stronger in women compared to men. The partner effects of positive partner behavior, $B = -.23$ ($SE= .09$), $p < .05$, and positive relational feelings, $B = -.24$ ($SE=.12$), $p < .05$, were significantly smaller in women compared to men.

Masturbation. Multi-level logistic regression analyses showed that none of the daily context variables were related to masturbation behavior in women, while the odds of masturbating increased in men when displaying less positive relational behavior during the day, perceiving their partner's behavior as less positive, and feeling less positive about the

relationship (see Table 4). When testing potential gender differences in the association

between context and masturbation, we found that these associations were significantly

different between men and women, $.33 < B <.66$, $p < .01$. The interaction between the actor

and partner effect of negative relational feelings also reached significance, indicating that men

were more likely to masturbate when both they themselves and their partner felt negative

about the relationship during the day.[4]

Contribution of Sexuality to Next-Day Personal, Relational, and Partner Variables

   Partnered Sexual Activity. Analyses showed that, following days with sexual activity,

men reported more positive mood, $B = .14$ ($SE=.06$), $p <.05$, perceived their partner's

behavior in more positive terms, $B = .22$ ($SE=07$), $p < .01$, and reported more positive

relational feelings, $B = .14$ ($SE=.05$), $p < .01$. On days following sexual activity, women

perceived their partner's behavior in more positive terms, $B = .24$ ($SE=.07$), $p < .01$, and

reported more positive relational feelings, $B = .15$ ($SE=.05$), $p <.01$.

   Regarding the predictive value of intimacy, we found that men experiencing higher

levels of intimacy on a given day reported more positive mood, $B = .05$ ($SE=.02$), $p < .05$, less

negative mood, $B = -.03$ ($SE=.02$), $p <.05$, more positive behavior towards the partner, $B = .09$

($SE=.03$), $p < .01$, a more positive perception of their partner's behavior, $B = .08$ ($SE=.02$), p

$< .01$, a less negative perception of their partner's behavior, $B = -.03$ ($SE=.03$), $p < .05$, more

positive relational feelings, $B = .04$ ($SE=.02$), $p < 05$, and less negative relational feelings, $B =$

$-.02$ ($SE=.01$), $p < .05$, on the following day. In women, higher intimacy predicted more

positive behavior towards their partner, $B = .12$ ($SE=.06$), $p < .05$, more positive perceptions

of their partner's behavior, $B = .08$ ($SE=.02$), $p < .01$, and more positive relational feelings, B

$= .04$ ($SE=.02$), $p < .05$, on the following day.

Masturbation. Men reported less positive mood, $B = -.19$ (SE=.09), $p < .05$, and perceived their partner's behavior as less positive, $B = -.27$ (*SE*=.09), $p < .01$, following days on which they had masturbated. Masturbation yielded only one significant main effect in women, who reported less negative mood following days on which they had masturbated, $B = -.19$ (SE= .03), $p < .05$.

Interrelations between Sexual Outcome Variables

When exploring the interrelations between sex, intimacy, and masturbation, we found that higher levels of intimacy on a given day increased the odds of having sex that day, both for men, $B = 1.15$ (SE=.11), $p < .01$, and for women, $B = .89$ (*SE*=.11), $p < .01$. The occurrence of masturbation on a given day also predicted sexual activity that same day, with masturbation decreasing the odds of having sex in men, $B = -.55$ (*SE*=.24), $p < .05$, and increasing the odds of having sex in women, $B = 1.3$ (*SE*=.28), $p < .01$. Masturbation and intimacy showed no significant association, $B < .20$.

When estimating the likelihood of engaging in sexual activity, intimacy, and masturbation using the previous day's sexual behaviors as predictors, we found that sexual activity on a previous day decreased the odds of having sex the next day, B = -.72 (*SE*=.23), $p < 01$. We also found that, in men, masturbating on a previous day decreased the odds of having sex the next day, $B = -.57$ (*SE*=.28), $p < .05$, and women's higher levels of intimacy on a previous day increased the odds of having sex the next day, $B = .14$ (*SE*=.07), $p <.05$. In women, higher levels of intimacy on a previous day predicted increased levels of intimacy the next day, $B = .09$ (*SE*=.04), $p < .01$. We also found that the occurrence of sex on a previous day decreased women's level of intimacy on the following day, $B = -.40$ (*SE*=.14), $p < .01$.

DISCUSSION

The present study complemented and extended prior diary research on sexuality by measuring the temporal relationship between relevant personal and relational variables and various types of sexual behavior in the everyday context of the relationship. Our main aim was to increase awareness (1) that the dyad and not the individual should be the main focus of analysis, (2) that it is more valid to measure sexual responding in the daily context of the relationship, and (3) that sex is determined by a variety of variables, including both personal and relational features. Inspired by the literature on relational intimacy, this design provides a first step in developing an interpersonal and multicomponent model of daily sexual responding.

Contribution of Daily Feelings and Behavior to Sexual and Intimate Behavior

Our results showed that on days when men experienced more positive mood, showed more affective behavior towards their partner, perceived their partner's behavior as more responsive, and felt more positive about the relationship than usual, the likelihood of having sex was significantly higher. Although the analysis of same-day relations does not allow making conclusions on directional effects of daily context on sex (given the overlap in the time window to report on context and sexual activity), the fact that sexual activity mainly occurred at the end of the day does suggest that personal and relational feelings during the course of day fuel into sexual activity later that day. Interestingly, the same personal and relational variables also predicted the level of intimacy men reported that day, indicating that sexual activity and intimacy thrive on a similar basis in men. Sexual activity in women was determined by the same pattern of predictors as in men, with particularly positive emotions and behavior about oneself, the partner, and the relationship predicting higher occurrence of sexual activity. In case of intimacy, both positive and negative variables were significant predictors of female intimate responding. The fact that intimacy was related to multiple

personal and relational experiences in women fits with a common clinical observation that women's mood and relational context have to be "just right" to either want, consent with, or surrender to physical intimacy. It also corresponds with prior research showing that positive relational interactions promote intimate expressions, whereas relationship distress tends to discourage intimacy [23, 5].

In general, the findings on sexual behavior are in line with other research showing that positive mood and relationship-enhancing behaviors promote sexual activity [16, 18, 26, 37]. The lack of association between negative experiences and sexual activity does, however, not fit well with other research showing that negative relational interactions interfere with desire for sexual activity [38, 39] and that negative feelings about the partner increase sexual activity in heterosexual men [40]. The results on mood and sexual activity in women only partly corroborate the results of Burleson and colleagues [9], who showed that positive mood increased and negative mood decreased sexual frequency in women. The Burleson study did, however, rely on a sample of mid-aged women, which limits the generalizability of their results to the present study. Also note that several cross-sectional studies also failed to find a relationship between daily negative emotions and sexuality [17, 41]. Furthermore, our sample included relatively satisfied couples reporting high levels of positive and low levels of negative feelings and behavior, which may partly explain the stronger relationships between positive context variables and sexual behavior.

Although much is written about gender differences in sexual outcomes, our results indicated that the likelihood of engaging in sexual activity depended on the same personal and relational variables in men and women [30, 42, 43]. The fact that both men and women were highly responsive to the relational context may, at first sight, seem counter-intuitive because male sexual behavior is often described as individually rather than relationally determined

[43, 44]. It seems logical, however, that when partners show love toward each other, and define the relationship in positive terms, they are more open to sexual experiences, regardless of gender. We even found that men's and women's displays of affectionate behavior reinforced each other in predicting intimacy and sexual activity.

An important strength of this study was that we included the responses of both couple members, which allowed testing the effect of both one's own and partner's daily responding on sexual behavior. Our results showed that both male and female intimate behavior depended on how the partner was feeling and behaving during the day. Given the interdependence between partners [45], it is likely that partner responses serve important functions in shaping intimate behaviors. Remarkably, the amount and strength of the partner effects was larger in men than in women, specifically regarding positive partner behavior and positive relational feelings. In other words, men's level of intimacy was more strongly influenced by how their female partner was feeling and behaving than vice versa. The fact that more actor than partner effects predicted women's level of intimacy leads to the somewhat counter-intuitive conclusion that physical affection in women is more strongly related to individual variables rather than partner responses during the day. This finding may partly reflect female emancipation, teaching women to take credits for their own sexuality instead of simply serving their men's (sexual) needs. In this context, it is worth noting that models describing women's sexuality as dependent, receptive, and relationally-determined [46] have been criticized because they would offer a restrictive, non-accurate view on female sexual responding [47].

Contribution of Sexual and Intimate Behavior to Next-Day Feelings and Behavior

We also investigated whether and how sexual behavior was temporally associated with next-day mood, partner behavior, and relational feelings. Given that only few studies have

prospectively monitored the effect of sexual behavior on daily feelings and behavior in a sample of couples, this study makes a unique contribution to the literature. Results showed that intimate physical contact and sexual activity on a given day predicted men's positive mood, positive partner perception, and positive relational feelings the following day. In addition to these effects, level of intimacy also predicted more displays of positive partner behavior and less negative partner perceptions following days of higher intimacy. In women, the effect of sexual activity and physical intimacy was limited to displaying more positive behavior towards the partner, perceiving their partner as more responsive, and experiencing more positive relational feelings on the following day. The latter finding endorses the idea that sex and relationships are closely intertwined in women [44, 46]. Note, however, that the effect of sexual activity on relational correlates was not stronger in women compared to men, indicating that for both men and women sexual responding is predicated on the relationship context. In general, our results fit with theory and research indicating that sexual interactions encourage people to express more positive feelings and to feel more connected to their partner [39, 48, 49]. Only men seemed to benefit from sexual intimacy both at a personal and relational level. In women, no evidence was found for the mood-enhancing effect of sexual activity and physical intimacy, which is not consistent with other diary research [9]. Differences in sample and methodology - with our study yielding a younger sample than in previous work - could possibly explain the divergence in results between studies.

The Regulatory Function of Sexual Behavior

When targeting bidirectional relationships, we found that being in a positive mood, perceiving the partner as responsive, and feeling positive about the relationship encouraged future sex and physical affection in men, which, in turn, improved their mood, perceived partner responsiveness, and relationship feelings. In women, only perceiving the partner as

responsive and feeling good about the relationship facilitated the fulfillment of intimate and sexual needs, which then increased their positive feelings about the partner and the relationship. In addition to these effects, we also found that the more affectionate behavior men and women displayed towards their partner, the more they engaged in intimate behavior such as cuddling and kissing, which motivated them to display even more signs of love and affection on the following day. Taken together, these results suggest that partners use sexual intimacy to regulate their feelings and behavior in their relationship. In other words, sex and intimacy may operate as regulatory systems that contribute to the promotion and maintenance of positive relational interactions. Only men were found to use sex and intimacy to regulate their own mood. To the extent that positive relationship interactions anchor the sexual experience, it is likely that engaging in intimate and sexual behavior will pull partners towards each other and create a relational context for future satisfying sexual interactions [40]. In this respect, it is remarkable that the occurrence of sexual activity decreased the likelihood of having sex on the following day, which does not fully support the latter conclusion. Although we did try to capture multiple determinants of sexual behavior, there are yet many other factors determining whether or not people will have sex on a given day such as stress, working late, illness, and so on. Furthermore, we need to emphasize that our results reflect within-subject relationships, which implies that associations are tested in reference to how partners are feeling and behaving on an average day. Hence, only when they feel and behave more positive than usual, they report engaging in more sexual and intimate behavior. Women's reports of intimacy on a given day did increase the likelihood of having sex and experiencing intimacy on the following day, suggesting that signs of rising intimacy may get women in the mood to initiate or consent with genital sexual responding.

The Role of Solitary Sexual Activity in Relationships

Masturbation behavior showed a markedly different pattern of results than dyadic sexual behavior. Whereas daily context variables did not relate to women's individual sexual activity, the likelihood of masturbation increased in men when displaying less positive partner behavior, perceiving their partner's behavior as less positive, and feeling less positive about the relationship during the day. Also negative relational feelings predicted masturbation behavior in men, yet only when their female partner was feeling negative about the relationship as well. It was rather unexpected that men's solitary sexual activity was associated only with partner-related and relational variables, but not with individual mood variables. Although it seems plausible that a negative relational climate will raise the opportunity to masturbate in order to regulate these negative emotions, it appeared that masturbation did not result in more positive outcomes on the following day. In fact, after having masturbated, men reported less positive mood and perceived their partner as less responsive. Masturbation even decreased the likelihood of having sex with their partner on the following day. Women reported less negative mood after having masturbated and masturbation even showed a positive association with sexual activity, which may suggest that masturbation serves positive functions in women. This fits with the self-soothing hypothesis stating that women use masturbation to relieve negative affect [50]. We should however be cautious to interpret this result because the incidence of masturbation was fairly low in women. So far, not much work has been done yet on the role of masturbation in the context of steady relationships. Although further research is warranted, our results give a first indication that, on a daily level, men experience masturbation negatively in the context of their relationship. This may possibly reflect societal views, claiming that solitary sexual activity does not fit into a satisfying relationship, signals that something is missing, and could even damage the sexual course of the relationship.

Limitations

Although this study has several strengths - investigating different types of sexual behavior, multiple components of daily context, and responses of both couple members - there are several limitations that need to be considered when interpreting the results. Firstly, our sampling procedure was not random and included mostly young, highly motivated, and relatively satisfied partners that are open to report on sexual issues. These results may therefore not generalize to the broader population, nor may they characterize the sexual dynamics of distressed or clinical couples. The present results may also not generalize to briefer, new, or casual sexual partnerships, given that only relationships of longer duration were studied here. Secondly, some effects were relatively small, indicating that significant variability at the person-level remains to be explained. In addition to testing within-subject relationships, research should also explore the moderating effect of individual differences at the between-person level. In line with previous diary-research, an important role can be ascribed to attachment orientation and level of relationship satisfaction in moderating the effect of daily context on sexuality [26, 51]. Thirdly, sexuality and intimacy were measured only at the behavioral level, leaving unexplored how the emotional aspects of the sexual interaction and daily context are interrelated. Finally, our diary covered 21 days, which is a relatively small window of recording daily experiences. For some couples, there were only few occurrences of sexual activity, and, particularly, of masturbation. Results should therefore be interpreted with caution. Future research should include more frequent assessments or event-coding procedures to improve accuracy of data.

General Comments and Clinical Implications

We want to conclude with some general observations that are worth highlighting. Although it is well documented that men and women ascribe different meanings to sexuality

[30, 42, 43], our pattern of results showed only few gender differences, expect for solitary

sexual activity. It is was especially interesting to observe that not only penetrative and genital

sexual acts, but also signs of intimacy, such as cuddling and touching, were important to

men's personal and relational functioning. Most theoretical models hold that such intimate

acts primarily characterize women's sexuality [43, 46]. Considering that close relationships

are dynamic systems in which partners mutually influence each other [52-54], it makes sense

that partners will tune their responses towards each other, closing the gap between men and

women. Yet, it could also be that questionnaire data are biased because people more likely

rely on stereotypes when retrospectively reporting on sexual determinants and behavior. Such

biases are significantly reduced when using a diary method [7, 8]. Reporting on *specific* daily

interactions may thus provide much more accurate data than generalized reports and large

surveys.

Our most important finding is that both sexual and non-sexual positive rewards in

romantic relationships influence each other in a bidirectional way, which induces a self-

amplifying dyadic circle of sexual and relational experiences [26, 55]. Sexual intimacy is thus

likely to fuel the process of coregulation between partners. Another interesting observation is

that the regulatory function of physical intimacy was quite similar to sexual activity. Given

that not much work has been done yet on physical affection, this study makes a timely point

by providing a more complete view on the role of sexuality in a couple's daily life. In relation

to this, our data clearly suggest that sexual foreplay is not limited to snuggling in the

bedroom, but that the quality of the everyday relational context is essential to get partners in

the mood to act in a sexual way. Clinical interventions should thus be directed at boosting

relational interactions and not focusing only on the sexual response itself. When taking a

closer look at the bidirectional relationships between daily variables and sexuality across

gender and different types of sexual behavior, perceiving the partner as loving and responsive turned out to be the most consistent and influential component of daily relationships. Given the important role of perceived partner responsiveness in developing and maintaining intimate relationships, it is plausible to assume that people may use signs of general responsiveness to evaluate if their partner will be responsive to their sexual and intimate needs as well. Being able to satisfy their sexual needs will then increase general perceived partner responsiveness, which further contributes to relationship intimacy [8, 5]. Finally, we want to highlight that intimacy and sexuality particularly thrived on positive emotions and behaviors whereas negative variables were much less influential. This may suggest that clinical interventions will gain more from creating and anchoring positive relational interactions rather than reducing relational distress only.

FOOTNOTES

[1] Because being married and having children could affect intimacy and sexual responding, these variables were controlled for in the analyses. Given the amount of effects that need to be reported, we did not further explore the moderating role of relationship status and children on the link between daily context and sexual responses in the service of readability and keeping focus on the main analyses.

[2] When testing multiple predictor models, entering the positive and negative variables per category as well as entering all predictor variables simultaneously, only the effect of positive partner behavior and their interaction remained significant predictors of sexual activity. Also the effect of women's perceived positive partner behavior remained significant. Note, however, that some of the study variables were highly interrelated (e.g., perceived positive partner behavior and positive relational feelings), which limits the interpretation of the findings on the multiple predictor models.

[3] Testing multiple predictor models, we found that, in men, all actor effects of the univariate analyses remained significant. Also the partner effects of positive partner behavior and perceived positive partner behavior remained significant. In women, only the actor, partner, and interaction effects of positive partner behavior, the actor effect of perceived positive partner behavior and the partner effect of perceived negative partner behavior remained significant.

[4] The multiple predictor models revealed that only male positive partner behavior and positive relational feelings predicted masturbation behavior in men.

APPENDIX

Data Analytic Plan

     Personal, Relational, and Partner-related Predictors of Sexual Behavior. The couple was the main unit of analysis, with male and female responses nested within the couple. By including both the male and female partner in the same two-intercept model, we obtained separate estimates of the predictor effects on sexuality for men and women, but the estimates were determined simultaneously, while accounting for the nonindependence of the couple members. To examine the main study questions, we relied on the Actor Partner Interdependence Model (APIM) which provides a simultaneous test of actor and partner main effects as well as actor X partner interactions. We included the main actor and partner effects in a first step and added the interaction term in a second step. The paired level-1 equations for the male and female partners in each dyad for the continuous outcomes were as follows:

$$YM_{ij}=\beta_{0jM}+\beta_{1M}(XM_{ij}-XM_{.j})+\beta_{2M}(XF_{ij}-XF_{.j})+\beta_{3M}(XM_{ij}-XM_{.j})(XF_{ij}-XF_{.j})+\varepsilon M_{ij}$$

$$YF_{ij}=\beta_{0jF}+\beta_{1F}(XF_{ij}-XF_{.j})+\beta_{2F}(XM_{ij}-XM_{.j})+\beta_{3F}(XF_{ij}-XF_{.j})(XM_{ij}-XM_{.j})+\varepsilon F_{ij}$$

     The first equation specifies for example that the intimacy of the male partner on day i in dyad j, YM_{ij}, is a function of a male intercept specific to dyad j, β_{0jM}; the deviance from his own average positive mood on day i, β_{1M}; the deviance from women's average positive mood on day i, β_{2M}; their interaction, β_{3M}; and a residual specific to day i for the male partner in dyad j, εM_{ij} The second equation can be interpreted similarly, but now for the woman. In the absence of interaction effects (i.e., $\beta_{3M} = \beta_{3F} = 0$), the parameters β_{1M} and β_{1F} reflect the actor effects in men and women, respectively; while the parameters β_{2M} and β_{2F} reflect the partner effects in men and women.

The next two equations are the level-2 equations that specify between-dyads variations:

$$\beta_{0jM} = \gamma_{0M} + u_{0jM}$$

$$\beta_{0jF} = \gamma_{0F} + u_{0jF}$$

The first (second) equation specifies that the between-dyad variation in male (female) intercepts are a function of a common intercept, γ_{0M}; and a residual component specific to each dyad, u_{0jM}. The random intercepts in males and females are assumed to capture the correlation over time within each individual, and are allowed to be correlated. Finally note that also the level-1 residuals εM_{ij} and εF_{ij} are allowed to be correlated.

For binary outcomes at the individual level, a similar hierarchical structure is employed but multilevel logistic regression is used. Because sexual activity is a couple level outcome, no separate equations are needed for males and females, but a dyad-specific random intercept is used in the multilevel approach with effects expressed in terms of male and female effects, but no actor and partner effects.

Contribution of sexuality to next-day personal, relational, and partner-related variables. In this section, we examined the main effects of sexuality on a given day on next-day reports of personal, relational, and partner-related variables, while controlling for previous-day actor and partner effects of these outcome variables.

Using similar notation as before, we considered for example the following regression equation for males:

$$YM_{ij} = \beta_{0jM} + \beta_{1M}(YM_{i-1,j} - YM_{.,j}) + \beta_{2M}(YF_{i-1,j} - YF_{.,j}) + \beta_{3M}X_{i-1,j} + \beta_{4M}\ X_{i-1}(YM_{i-1,j} - YM_{.,j})) + \beta_{5M}X_{i-1}(YF_{i-1,j} - YF_{.,j}) + \varepsilon M_{ij}$$

with YM_{ij} for example positive mood on day i in the male partner of dyad j, $YM_{i-1,j}$ his

positive mood on day i-1, $YF_{i-1,j}$ his women's positive mood on day I, and $X_{i-1,j}$ sexual

activitiy on day i-1 in dyad j.

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Table 1. Correlations between daily reports of personal, partner-related, and relational variables: for men above the diagonal and for women below the diagonal. On the diagonal: correlations between man's and woman's reports.

	Positive mood	Negative mood	Own positive relational behavior	Own negative relational behavior	Perceived positive partner behavior	Perceived negative partner behavior	Positive relational feelings	Negative relational feelings
Positive mood	0.32	-.47	.48	-.25	.49	-.23	.59	-.23
Negative mood	-.48	0.17	-.20	.39	-.14	.31	-.18	.42
Own positive relational behavior	.24	-.10	0.51	-.09	.70	-.26	.62	-.15
Own negative relational behavior	-.24	.51	-.04	0.25	-.07	.40	-.15	.38
Perceived positive partner behavior	.52	-.10	.34	-.02	0.55	-.38	.74	-.25
Perceived negative partner behavior	-.27	.32	-.20	.41	-.43	0.40	-.40	.60
Positive relational feelings	.60	-.11	.35	-.06	.81	-.46	0.58	-.34
Negative relational feelings	-0.23	0.39	-0.14	0.36	-0.27	0.67	-0.36	0.33

Table 2. Means (*M*) and standard errors (*SE*) of personal, relational, and partner-related variables in men and women.

	Men		Women		Diff	
	Mean	*SE*	*Mean*	*SE*	*Mean*	*SE*
Positive mood	4.47	0.10	4.42	0.10	0.05	0.10
Negative mood	1.84	0.06	1.93	0.06	-0.09	0.08
Positive relational behavior	4.60	0.12	4.72	0.14	-0.11	0.11
Negative relational behavior	1.90	0.07	1.97	0.09	-0.07	0.49
Perceived positive partner behavior	4.58	0.11	4.51	0.11	0.07	0.09
Perceived negative partner behavior	1.70	0.06	1.65	0.06	0.06	0.07
Positive relational feelings	5.17	0.11	5.04	0.11	0.13	0.09
Negative relational feelings	1.32	0.04	1.27	0.04	0.05	0.05

Table 3. Multilevel coefficients *(B)* and standard errors *(SE)* of personal, relational, and partner-related variables on a given day predicting occurrence of sexual activity in the couple. Sexual activity is defined as oral sex, genital touching, and vaginal/anal penetration with the partner.

	Sexual activity B (SE)
Positive mood men	.31 (.07)**
Positive mood women	.24 (.07)**
Positive mood men X women	.14 (.09)
Negative mood men	-.16 (.08)
Negative mood women	-.13 (.08)
Negative mood men X women	.10 (.15)
Positive relational behavior men	.27 (.07)**
Positive relational behavior in women	.39 (.07)**
Positive relational behavior men X women	.01 (.01)**
Negative relational behavior men	.03 (.05)
Negative relational behavior in women	-.02 (.05)
Negative relational behavior men X women	.02 (.05)
Perceived positive partner behavior men	.44 (.07)**
Perceived positive partner behavior women	.41 (.07)**
Perceived positive partner behavior men X women	.04 (.08)
Perceived negative partner behavior men	-.11 (.07)
Perceived negative partner behavior women	-.09 (.07)
Perceived negative partner behavior men X women	-.05 (.09)
Positive relational feelings men	.37 (.08)**

Positive relational feelings women	.35 (.08)**
Positive relational feelings men X women	.13 (.10)
Negative relational feelings men	-.08 (.12)
Negative relational feelings women	.01 (.12)
Negative relational feelings men X women	.09 (.14)

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

For each personal, relational, and partner-related variable separately, a mixed logistic regression model for sexual activity was fitted with the effect of the male's predictor value, the effect of the female's predictor value and their interaction as predictors. These effects should be interpreted on the log odds scale, i.e. exp(B) indicates how much the odds of sexual activity increases (when B>0) or decreases (when B<0) for a one-unit increase in the predictor value. The number of non-missing observations (from the 66x2x20=2640 planned) used in every regression ranged from 2368 (for relational behavior) to 2456 (for relational feelings).

Table 4. Multilevel coefficients *(B)* and standard errors *(SE)* of personal, relational and partner-related variables on a given day predicting level

of intimacy (using multilevel linear regression) and occurrence of masturbation (using multilevel logistic regression) that day. Intimacy is

defined as kissing, cuddling, and caressing with the partner; Masturbation refers to any sexual act that involves self-stimulation in the absence of

the partner. "A" represents Actor effects, "P" represents Partner effects.

	Intimacy		Masturbation	
	Men	Women	Men	Women
	B (SE)	*B (SE)*	*B (SE)*	*B (SE)*
Positive mood A	.35 (.06) **	.33 (.06)**	-.06 (.11)	-.16 (.14)
Positive mood P	.24 (.06)**	.28 (.06)**	.05 (.11)	.26 (.15)
Positive mood A X P	.13 (.07)	-.02 (.06)	.09 (.12)	-.03 (.15)
Negative mood A	-.12 (.09)	-.25 (.08)**	-.17 (.15)	-.23 (.18)
Negative mood P	-.16 (.08)*	-.09 (.09)	.09 (.13)	-.03 (.19)
Negative mood A X P	.21 (.11)	.08 (.11)	.02 (.16)	.20 (.20)
Positive relational behavior A	.34 (.04)**	.44 (.04)**	-.29 (.08)**	.02 (.09)
Positive relational behavior P	.27 (.04)**	.21 (.04)**	-.03 (.08)	.01 (.09)
Positive relational behavior A X P	-.01 (.02)	-.01 (.01)**	.07 (.05)	-.01 (.01)

Negative relational behavior A	.02 (.05)	-.05 (.05)	-.11 (.10)	-.04 (.11)
Negative relational behavior P	-.04 (.05)	.05 (.05)	.04 (.09)	-.08 (.11)
Negative relational behavior A X P	-.01 (.04)	-.01 (.03)	-.05 (.07)	.09 (.06)
Perceived positive partner behavior A	.44 (.06)**	.64 (.06)**	-.43 (.11)**	.17(.13)
Perceived positive partner behavior P	.44 (.06)**	.21 (.06)**	.10 (.10)	.11 (.14)
Perceived positive partner behavior A X P	-.06 (.04)	.01 (.04)**	.02 (.09)	.04 (.08)
Perceived negative partner behavior A	-.12 (.07)	-.35 (.08)**	-.03 (.12)	-.01 (.15)
Perceived negative partner behavior P	-.17 (.08)*	.05 (.07)	.12 (.13)	-.01 (.15)
Perceived negative partner behavior A X P	.01 (.06)	-.01 (.06)	.10 (.09)	.06 (.12)
Positive relational feelings A	.32 (.08)**	.61 (.07)**	-.50 (.14)**	-.03 (.17)
Positive relational feelings P	.46 (.07)**	.22 (.07)**	.14 (.13)	-.08 (.19)
Positive relational feelings A X P	.09 (.07)	.11 (.06)	.02 (.11)	.06 (.14)
Negative relational feelings A	-.16 (.11)	-.26 (.12)**	-.23 (.21)	-.03 (.27)
Negative relational feelings P	-.02 (.11)	-.10 (.11)	-.12 (.23)	-.03 (.25)
Negative relational feelings A X P	-.06 (.10)	.12 (.11)	.53 (.19)**	.21 (.20)

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

For each personal, relational, and partner-related variable separately, a linear mixed model for intimacy (and a mixed logistic regression model for masturbation) was fitted with the actor effect, the partner effect and their interaction of both the man and woman, and an intercept for males and females as predictor (i.e., 8 predictors in total). For intimacy and masturbation, effects should be interpreted on the linear and the log odds scale, respectively. The number of non-missing observations (from the 66x2x20=2640 planned) used in every regression ranged from 2368 (for relational behavior) to 2456 (for relational feelings) for both outcomes.