

Sex as Relationship Maintenance

Emily A. Impett, University of Toronto Mississauga

Amy Muise, York University

Natalie O. Rosen, Dalhousie University

Address correspondence to Emily A. Impett, Department of Psychology, University of Toronto Mississauga, 3359 Mississauga Road, Mississauga, Ontario, L5L1C6. This chapter was supported by an Insight Grant from the Social Sciences and Humanities Research Council awarded to Emily A. Impett and Amy Muise, and a grant from the Canadian Institute of Health Research awarded to Natalie O. Rosen and Emily A. Impett.

Sex as Relationship Maintenance

When people are asked to consider what makes their lives meaningful, no factor is listed more consistently and prominently than having close, satisfying relationships (Berscheid & Reis, 1998). Meta-analyses have documented that having high quality, supportive relationships is an equal or stronger predictor of mortality than other known health risk factors such as smoking, physical activity, and body mass index (Holt-Lunstad, Smith, & Layton, 2010). Key reasons why supportive, close relationships promote health and well-being are that they help people cope with stress and enable them to fulfill basic needs for social connection, intimacy, and companionship (see review by Pietromonaco & Collins, 2017). One factor which has been surprisingly absent from the literature on relationship maintenance and well-being is the role of sexuality, a striking omission given that sexuality is a key factor that distinguishes romantic relationships from other types of close relationships, and sexual satisfaction is strongly linked to the maintenance of relationships and overall well-being (see review by Impett, Muise, & Peragine, 2014). For example, in North America, more people see a happy sexual relationship as very important for a successful relationship (70%) than having an adequate income (53%) or having shared interests (46%) (Taylor, Funk, & Clark, 2007). Further, in a multinational study conducted in 29 countries, the people who were the most sexually satisfied were the most satisfied with their lives in general (Laumann et al., 2006).

Despite the importance of sex for relationships, couples face numerous challenges to maintaining desire and satisfying sexual relationships. For example, sexual desire tends to peak in the beginning stages of romantic relationships as intimacy is rapidly developing (Baumeister & Bratlavsky, 1999), and often declines over time as partners become more

secure and comfortable in the relationship (Impett et al., 2014). Similarly, although couples begin their relationships quite satisfied with their sex lives, sexual satisfaction steadily declines, in one study beginning at about a year into the relationship (Schmiedeberg & Schröder, 2016). As a result of these changes, romantic partners will inevitably encounter situations in which their sexual interests differ (see review by Impett & Peplau, 2003), and many long-term couples find themselves in situations in which they have discrepant levels of sexual desire (Davies, Katz, & Jackson, 1999; Mark, 2012). Couples may disagree about when and how frequently to engage in sex, or the specific activities in which they wish to engage, and these sexual conflicts of interest are not inconsequential. In a national study of couples married fewer than five years, disagreements about sexual frequency were one of the top three most cited arguments between partners (Risch, Riley, & Lawler, 2003). Further, conflicts of interest about sex are one of the most common reasons why couples seek marital therapy (Rosen, 2000), and one of the most difficult types of conflict to successfully resolve (Sanford, 2003).

Yet, the positive side to this connection between sexual quality and relationship quality is that, when negotiated with care and responsiveness, sex can be a powerful mechanism for maintaining and enhancing relationships. That is, when couples can successfully navigate sexual issues, feelings of closeness and intimacy in the relationship can be maintained and strengthened (Rehman et al., 2011). This chapter focuses on the role of sexuality in relationship maintenance, and in particular, how couples can maintain sexual desire, sexual satisfaction, as well as relationship satisfaction and feelings of commitment to their relationship over time, or remain satisfied in spite of changes to their sexual relationship. We use the term relationship maintenance to refer to couples' abilities

to maintain stable relationships (i.e., commitment and relationship longevity), sustain the high levels of relationship quality with which they began their relationships (e.g., satisfaction and passion), as well as to overcome challenges to their relationships during periods when relationship and sexual satisfaction are known to decline such as in the transition to parenthood. However, given that sexual desire—defined as the need, drive, or motivation to engage in sexual activities (Diamond, 2004)—involves the rewards and positive emotional experiences associated with the approach motivational system (Impett, Strachman, Finkel, & Gable, 2008), in this chapter, we also focus on couples' abilities to experience increases in both relationship and sexual satisfaction—that is, to grow and thrive in their relationships—as another key component of relationship maintenance. We begin the chapter by discussing the ways that sex can benefit relationships, focusing on links between sexual frequency, physical affection, sexual satisfaction and the quality and maintenance of relationships. Then, we discuss the factors that enable couples to stave off declines in sexual desire and satisfaction, including sexual goals, sexual communal motivation, sexual communication, and sexual expectations. Throughout the chapter, we integrate available evidence of the role of sexuality in relationship maintenance during a period of great life transition for couples (e.g., the transition to parenthood) and in situations where couples are faced with significant sexual dysfunction, such as pain during intercourse. We conclude the chapter by discussing five promising directions for future research on sexuality and relationship maintenance.

The Benefits of Sex for Relationships

Although navigating sexual issues in long-term, romantic relationships can be challenging, we also know that regular, satisfying sex has the power to connect people,

create affection, and sustain relationships. In this section, we consider how the maintenance of relationships is impacted by three factors: (1) sexual frequency (i.e., the frequency with which couples engage in sexual activity, broadly defined, in their relationship), (2) affection frequency (i.e., the frequency with which couples engage in physically affectionate activities, either in sexual or non-sexual contexts), and (3) sexual satisfaction (i.e., the affective response arising from the subjective evaluation of the positive and negative aspects of one's sexual relationship).

Sexual Frequency and Relationship Maintenance

Numerous studies indicate that people who engage in sex more frequently in their relationships enjoy greater sexual as well as relationship satisfaction. Beginning with sexual satisfaction, research has shown that people's sexual satisfaction in their romantic relationships is positively correlated with their sexual frequency (e.g., Cheung et al., 2008; McNulty, Wenner, & Fisher, 2015; Rahmani, Khoei, & Gholi, 2009). Multi-wave, longitudinal research with couples indicates that the link between sexual frequency and sexual satisfaction is bidirectional, such that sexually satisfied couples pursue sex more frequently, and frequent sex leads to increases in sexual satisfaction (McNulty et al., 2015). Further, this link is consistent for men and women (McNulty et al., 2015), for people living in western and non-western countries (e.g., Cheung et al., 2008; Rahmani et al., 2009), and for same-sex and mixed-sex couples (Blair & Pukall, 2014). Recent research demonstrates that sex does not just increase satisfaction in the moment, but that married couples experience a sexual *afterglow*—where sexual satisfaction remains elevated for about 48 hours following a sexual experience—and this is particularly true for highly satisfying sexual experiences (Meltzer et al., 2017). In this work, couples who reported higher levels

of sexual afterglow also remained more satisfied in their marriage over a four-month period of time.

Sexual frequency is also associated with people's satisfaction with their relationships and lives more generally. In one early study, low sexual frequency was the second strongest predictor of marital dissatisfaction, ranking only behind age and controlling for other important predictors of sexual frequency, such as relationship duration and whether or not couples had children living at home (Call, Sprecher, & Schwartz, 1995). Further, in a study using data from the National Survey of Families and Households, a nationally representative survey conducted in the United States, Yabiku and Gager (2009) found that lower sexual frequency was associated with higher rates of relationship dissolution among both cohabiting and married couples, although the link was stronger for cohabiting couples. Sexual frequency is also associated with greater life satisfaction. In three studies including more than 30,000 participants, Muise, Schimmack, and Impett (2016) showed that couples who reported engaging in more frequent sex also reported greater satisfaction with their lives overall, yet the benefits of sex for well-being were maximized when couples engaged in sex once per week. Demonstrating the practical utility of these findings, the increase in well-being in this study that was gained from having sex once a month to having sex once a week was equivalent to the increase in well-being gained from making \$75,000 per year compared to \$25,000 (Muise et al., 2015). Finally, in a longitudinal study, increases in sexual frequency were associated with increases in sexual satisfaction and life satisfaction over time (Schmiedeberg, Huyer-May, Castiglioni, & Johnson, 2017).

Sex also facilitates relationship maintenance by buffering romantic couples against negative relationship outcomes. Both attachment insecurity (for review, see Cassidy & Shaver, 1999) and neuroticism (e.g., Karney & Bradbury, 1997) have been consistently associated with relationship dissatisfaction. However, research has shown that the negative effects of both factors are attenuated for people who engage in more frequent sex. Russell and McNulty (2011) demonstrated that the lower relationship satisfaction typically experienced by people high in neuroticism was not present among spouses who engaged in relatively frequent sex; that is neuroticism was not associated with less satisfaction for couples engaging in more frequent sex. Likewise, Little, McNulty, and Russell (2010) demonstrated that attachment avoidance was unassociated with marital satisfaction among spouses who engaged in more frequent sex. This effect was mediated by expectancies for partner availability, suggesting that more frequent sex may alleviate avoidant individuals' automatic concerns of abandonment.

The Importance of Physical Affection

One reason why sexual frequency is associated with greater well-being is that couples who engage in more frequent sex also tend to be more affectionate with each other. Across four studies, the association between sexual frequency and personal well-being (i.e., satisfaction with life and positive emotions), was partially accounted for by the frequency with which couples engaged in affectionate behaviors (e.g., cuddling, kissing, caressing) in their relationship (Debrot, Meuwly, Muise, Impett, & Schoebi, 2017). In fact, when romantic couples reported on their sexual and affectionate experiences four times a day for a 2-week period, engaging in sex at one time point during the day was associated with increases in affectionate behavior at the next time point, and affection at one time point was also

associated with a greater likelihood of engaging in sex at the next time point (Debrot et al., 2017). In addition, Muise, Giang and Impett (2014) found that sex has positive implications for sexual and relationship satisfaction because of affectionate experiences *after* sex. In particular, couples who spent longer engaging in affection after sex (i.e., kissing, cuddling, caressing) felt more satisfied with the sexual experience and with their relationship. Notably, the duration of after sex affection was a stronger predictor of sexual and relationship satisfaction than the amount of time spent engaging in foreplay or sex itself, and this was true for both men and women.

Given that sexual frequency is important for the maintenance of relationships, the fact that sexual frequency tends to decline with age (Waite et al., 2009) seems like it could pose a problem for the maintenance of relationship satisfaction over time. Nevertheless, physically affectionate behaviors, such as kissing, cuddling and caressing, do not seem to decline with age (Waite et al., 2009). Couples who are able to move beyond the notion that penetrative sex is the primary or only mode of sexual expression and incorporate a broader repertoire of sexual and affectionate behaviors seem better able to maintain—or experience heightened—sexual satisfaction in older adulthood (Hinchliff & Gott, 2008). In a study of mixed-sex couples in midlife and older adulthood conducted in five countries, affectionate behaviors such as kissing, cuddling and caressing were associated with increased sexual satisfaction for both men and women, and this effect held above and beyond the association between sexual frequency and satisfaction (Heiman et al., 2010). Interestingly, despite women’s tendency to focus more on relational aspects of sexuality relative to men (see review by Diamond, 2004), the association between affection and sexual satisfaction was stronger for men than for women, and physical affection was a

significant predictor of men's, but not women's, relationship satisfaction. Finally, research with clinical populations has also shown that when penetrative sex is painful, more daily physical affection—both in sexual and non-sexual contexts—was linked to greater relationship satisfaction for both partners, compared to when daily affection was lower (Vannier, Rosen, MacKinnon, & Bergeron, 2016).

Sexual Satisfaction and Relationship Maintenance

People's affective responses arising from their subjective evaluations of the quality of their sex lives—that is, how satisfied people *feel* about their sex lives—may be an even better predictor of how they feel about their relationships than how frequently they engage in sex. McNulty and colleagues (2015) demonstrated that the effects of sexual frequency on relationship satisfaction were indirect, such that they emerged through sexual satisfaction. In other words, having a satisfying sexual relationship appears to be most important to relationship quality, regardless of how one gets there. In a multi-national study of people from 29 countries, Laumann et al. (2006) demonstrated that people who were the most sexually satisfied were also the happiest with their romantic relationships and with their lives in general. In one of the strongest demonstrations of the association between sexual and relationship satisfaction, in two eight-wave longitudinal studies of married couples, McNulty et al. (2015) found that sexual satisfaction at one time point positively predicted changes in marital satisfaction from that time point to the next (see also Fallis, Rehman, Woody, & Purdon, 2016). Marital satisfaction at one time point also positively predicted changes in sexual satisfaction from that time point to the next, suggesting that the link between sexual and relationship satisfaction flows in both directions. Extensive research has also shown that couples who enjoy positive, satisfying sexual relationships have more

stable relationships than couples who are less sexually satisfied or who report experiencing sexual problems (e.g., Sprecher, 2002). In fact, sexual dissatisfaction and incompatibility are key reasons why couples ultimately break up and dissolve their relationships (Sprecher, 1994).

The importance of sexual satisfaction for the maintenance of satisfying relationships is also highlighted by research demonstrating that, like sexual frequency, sexual satisfaction explains and attenuates the effects of critical individual difference factors on relationship quality. For example, Fisher and McNulty (2008) demonstrated that sexual satisfaction mediated the effects of neuroticism on marital satisfaction—that is, the low marital satisfaction of people high in neuroticism was accounted for by their low sexual satisfaction. Likewise, Little et al. (2010) found that sexual satisfaction moderated the effects of attachment anxiety on global relationship satisfaction, such that attachment anxiety was unrelated to marital satisfaction among those who were satisfied with their sex lives. This finding is important because it demonstrates that even those who are high in attachment anxiety—who tend to report lower relationship quality—can benefit from engaging in satisfying sex with a close partner.

Although sexual satisfaction and relationship satisfaction tend to be fairly robustly associated, some couples successfully maintain satisfaction with their relationship even when their sexual satisfaction is low. For example, women who suffer from pain during sex report significantly lower sexual satisfaction than women without this problem, but report their relationship satisfaction to be similar to women without this pain (Smith & Pukall, 2011). Similar patterns have been observed among people coping with other sexual dysfunctions (e.g., erectile dysfunction, low sexual interest) whereby the link between

sexual functioning and sexual satisfaction is stronger than the link between sexual functioning and overall satisfaction with the relationship (Rosen, Heiman, Long, Fisher, & Sand, 2016). Couples who have adapted their sexual scripts to account for difficulties in sexual functioning (e.g., focusing on non-penetrative sexual activities when intercourse is painful or there are erectile problems), or who continue to engage in behaviors that benefit the overall relationship but are typically associated with sex (e.g., expressing affection, cuddling, responsiveness), may experience less interference to their feelings about their relationship more generally (Burri, Giuliano, McMahon, & Porst, 2014; Vannier et al., 2016).

Preventing Declines in Sexual Desire and Satisfaction Over Time

Given that keeping up a regular sex life and feeling satisfied with one's sex life can help couples maintain their relationships over time, it is important to understand how some couples are able to stave off such declines or remain satisfied in the face of changes to their sexuality. Indeed, although sexual desire tends to decline or waver over the course of a relationship on average (Sims & Meana, 2010), romantic love, which is characterized by high sexual interest, engagement, and intensity, does not decline for everyone (Acevedo & Aron, 2009), and not everyone experiences accompanying declines in relationship satisfaction (Lavner & Bradbury, 2010; Sims & Meana, 2010). Although many couples in which one partner has a higher desire for sex than the other (i.e., "desire discrepant couples") experience lower sexual and relationship satisfaction than couples in which partners have more matched levels of desire (Davies et al., 1999; Mark, 2012; Rosen, Bailey, & Muise, 2017), some of these couples successfully navigate these differences and maintain satisfaction (Bridges & Horne, 2007). During the transition to parenthood, about one third to one half of couples maintain or even report an increase in their sexual and

Commented [BO1]: This sentence could use a transition from the previous one because it seems like a different idea.

EAI: Done

relationship satisfaction (Ahlborg, Rudeblad, Linnér, & Linton, 2008; Shapiro, Gottman, & Carrere, 2000). In this section we review research on four factors that can help couples stave off declines in sexual desire and satisfaction or remain satisfied in the face of changes to their sexual relationship, including research on (1) sexual goals, (2) sexual communal motivation, (3) sexual communication, and (4) sexual expectations.

Sexual Goals

Although engaging in more frequent sex with a romantic partner is associated with greater sexual and relationship satisfaction, research on sexual motivation suggests that an important predictor of what differentiates satisfying sexual experiences and relationships from dissatisfying ones concerns people's reasons or goals for engaging in sex (see reviews by Impett, Muise, & Rosen, 2015; Muise & Impett, 2016). Links between sexual goals and sexual and relationship satisfaction have been most extensively researched through the lens of approach-avoidance motivational theory (see review by Gable & Impett, 2012). This work has shown that when people engage in sex for *approach goals* such as to enhance intimacy or express love for their partner, they experience more positive emotions and both partners report higher sexual and relationship satisfaction (Impett, Peplau, & Gable, 2005; Muise, Impett, & Desmarais, 2013). In contrast, when people engage in sex for *avoidance goals* such as to avoid conflict or a partner's disappointment, they experience more negative emotions and relationship conflict and both partners report lower sexual and relationship satisfaction. In a longitudinal study of long-term married and cohabitating couples, people who engaged in sex more frequently for avoidance goals over the course of a three-week daily experience study reported lower sexual satisfaction at a four-month follow-up and had partners who felt less sexually satisfied and committed to maintaining

their relationship four months later (Muise et al., 2013). In addition, these same patterns have also been observed among couples coping with significant sexual problems, such as pain during sex (Rosen et al., 2018). These findings are consistent with research on sacrifice—a type of pro-relationship behavior in which partners give up their own self-interests for the sake of their partner or the relationship (see review by Righetti & Impett, in press). This work on sacrifice has also shown that while making sacrifices for a romantic partner for approach goals increases the relationship satisfaction of both the giver and the recipient over time, making sacrifices for a romantic partner in pursuit of avoidance goals is particularly destructive to the maintenance of relationships over time (Impett, Gable, & Peplau, 2005; Impett, Gere, Kogan, Gordon, & Keltner, 2014).

Other research guided by self-determination theory (e.g., Deci & Ryan, 2000) has found that people experience greater psychological well-being and relationship quality when they engage in sex for goals that are more *self-determined* in nature such as for the enjoyment being sexual or the pleasure of sharing an intimate experience with a partner, as compared to when they engage in sex for goals that are more *controlled* in nature such as out of feelings of pressure by a partner or concerns about withholding sex in their relationship (Brunell & Webster, 2013). Similarly, sexual interactions characterized by higher levels of autonomy, competence, and relatedness are associated with more positive sexual experiences (Smith, 2007) and greater need fulfillment in monogamous and consensually non-monogamous relationships (Wood, Desmarais, Burleigh, & Milhausen, in press). Taken together, this work suggests that engaging in sex in pursuit of approach or self-determined goals can enable couples to maintain satisfying sex lives and relationships

Commented [JKM2]: I imagine much of this relates to your work on motives for sacrifice as well. Feel free to discuss any parallels and bring up sacrifice given it is also considered a maintenance process

EAI: Added

over time, whereas engaging in sex for controlled or avoidance goals can present challenges to the maintenance of relationships.

Although we are gaining a greater understanding of how sexual goals shape the quality of sexual relationships, we know much less about how goals might be changed to the ultimate benefit of relationships. The lack of research on this topic likely reflects the challenges in conducting experimental work in the area of sexuality. For example, in one experimental study, participants who were asked to double their sexual frequency unexpectedly experienced *lower* satisfaction than participants not given this manipulation, possibly due to reduced feelings of autonomy around sexual decision-making (Loewenstein, Krishnamurti, Kopsic, & McDonald, 2015). Recent experimental work on approach and avoidance sexual goals suggests that it is possible to enhance people's approach goals for sex and ultimately their satisfaction. In a sample of people currently involved in a romantic relationship, half of the participants were told about the benefits of approach sexual goals and were asked to try to focus on approach reasons for sex over the next week, and the other half were given no instructions about sexual goals. When participants completed a follow-up survey one week later, those in the approach condition reported higher sexual and relationship satisfaction compared to those in the control group (Muisse, Boudreau, & Rosen, 2016). Therefore, incorporating information on the benefits of approach-motivated (or self-determined) sex in relationships might enhance the efficacy of interventions for couples with low sexual desire or sexual dissatisfaction.

Sexual Communal Motivation

Another motivational factor that is linked with increased sexual desire and satisfaction in couples is *sexual communal motivation* (see reviews by Impett et al., 2015;

Muise & Impett, 2016), defined as the extent to which people are motivated to be non-contingently responsive to their partner's sexual needs (Muise, Impett, Kogan, & Desmarais, 2013). People high in sexual communal motivation report being more likely to have sex with their partner when they are not entirely in the mood, being open-minded about their partner's preferences, communicating with their partner about their sexual likes and dislikes, and ensuring that the sexual relationship is mutually satisfying (Muise & Impett, 2016). In a sample of long-term couples who had been together for an average of 11 years, people who were higher in sexual communal motivation felt more sexual desire for their partner and had more enjoyable sexual experiences than those lower in sexual communal motivation (Muise et al., 2013). More specifically, whereas people lower in sexual communal motivation declined in desire over a four-month period of time, more communal people began the study with slightly higher desire and were able to maintain high levels of sexual desire over time (Muise et al., 2013). The partners of people high in sexual communal motivation also reaped benefits, as they reported that their partners were highly responsive to their needs during sex and in turn, they felt more satisfied with and committed to their relationship (Muise & Impett, 2015). Related research suggests that, at times, changing sexual habits—or making *sexual transformations*—for a partner can benefit the relationship (Burke & Young, 2012). In one study, people who made more (compared to less) frequent sexual changes for the sake of their romantic partner had partners who reported being more satisfied in their relationship. In addition, people who felt more positive about changing their sexual habits for their partner felt more satisfied with their relationships and had partners who reported feeling more satisfied as well (Burke & Young, 2012). These findings are consistent with the literature on sacrifice which

Commented [JKM3]: Again, parallels to your work on sacrifice (and satisfaction with sacrifice) could help this chapter further fit with the other chapters on maintenance behaviors. Feel free to discuss that relevant work where you see fit.

EAI: Added

has shown that on days when people report giving up their own needs to benefit their partner or their relationship, they report increased relationship satisfaction (Ruppel & Curran, 2012), as well as findings from a recent meta analysis linking broad individual differences in communal orientation with increased personal well-being and relationship quality (Le, Impett, Lemay, Muise, & Tskhay, 2018).

Communally motivated people are even motivated to meet their partner's needs in situations when it is not particularly easy—for example, in situations in which their partner is interested in sex but their own desire for sex is low. In these situations, people higher in sexual communal motivation remain motivated to make their partner feel loved and desired, and focus less on what they personally have to lose from engaging in sex, such as feeling tired or giving up time spent on personal activities (Day, Muise, Joel, & Impett, 2015). As a result of their increased motivation to pursue benefits for their partner and decreased motivation to avoid costs to themselves, individuals high in sexual communal motivation are more likely to engage in sex in these desire-discrepant situations and both partners report greater sexual and relationship satisfaction as a result. Similarly, being higher in sexual communal motivation also helps couples maintain sexual and relationship satisfaction in the face of sexual dysfunction, such as pain during sex (Muise et al., 2017).

Our review of the research showing the benefits of sexual communal motivation in relationships is not meant to suggest that people should *always* be willing to meet each other's sexual needs. While the willingness to sacrifice or incur costs to benefit a partner—both inside and outside of the bedroom—is inevitable and necessary to sustain relationships (see reviews by Impett et al., 2015; Righetti & Impett, 2017), incurring personal costs to meet a partner's needs is not always beneficial (e.g., Impett et al., 2005).

Indeed, research on unmitigated communion (Fritz & Helgeson, 1998)—the tendency to give to others in a manner that is devoid of agency and concern for one’s own needs—has shown that individuals high in unmitigated communion experience more negative affect and less positive affect in situations of interpersonal conflict (Nagurney, 2007). In essence, people higher in unmitigated communion take the value of interpersonal connectedness to an unhealthy extreme, prioritizing the needs of others while neglecting their own psychological and physical well-being (Fritz & Helgeson, 1998).

Recently, theories of unmitigated communion have been extended to the domain of sexuality. In a 21-day dyadic daily experience study, on days when people (or their romantic partner) reported higher sexual communal strength, they felt more connected to their partner during sex and in turn, both partners experienced greater daily sexual and relationship satisfaction. In contrast, on days when people reported higher unmitigated sexual communion, they felt more disconnected from their partner during sex, and in turn, experienced lower relationship and sexual satisfaction (Impett, Muise, & Harasymchuk, under review). Similarly, in a clinical sample of couples in which the woman experiences pain during sex, on days when people reported higher sexual communal motivation, both they and their partners reported better sexual function, and sexual and relationship satisfaction. In contrast, on days when people reported higher *unmitigated sexual communion* (i.e., they focused on their partner’s sexual needs to the exclusion of their own needs), both partners reported poorer sexual function, as well as lower sexual and relationship satisfaction (Muise, Bergeron, Impett, & Rosen, 2017). These findings suggest that even though people higher in unmitigated sexual communion report being solely focused on meeting their partner’s sexual needs, their partners are not benefiting from

their hypervigilance to their sexual needs and may, in fact, be even less satisfied with their sex lives and relationships.

Sexual Communication

Another factor that influences both sexual and relationship satisfaction is sexual communication. Sexual self-disclosure may be an important way for couples to maintain sexual desire and satisfaction over the course of long-term relationships (MacNeil & Byers, 2009). Indeed, couples who report more open and effective communication about their sex lives also report higher sexual and relationship satisfaction (Byers & Demmons, 1999), including in situations in which one person suffers from a sexual dysfunction such as pain during sex (Rancourt, Flynn, Bergeron & Rosen, 2017). In fact, general self-disclosure as well as disclosure about specific sexual likes and dislikes contributes to sexual satisfaction (Byers & Demmons, 1999). It is not just communication about sex outside of the bedroom that has implications for sexual satisfaction, but communication during sex matters too. One study found that nonverbal sexual communication (i.e., participants' own reports of their touch, gestures and eye gaze during sex), but not verbal communication (i.e., participants own reports of how much they communicate their pleasure or satisfaction with their partner during sex) was associated with increased sexual satisfaction (Babin, 2012). Yet other research has examined more specific types of verbal sexual communication suggests that it matters. For example, Hess and Coffelt (2012) found that using more sexual terms during sexual discussions with a partner (especially slang terms, such as *give head*, as opposed to clinical terms, such as *fellatio*) was associated with greater relationship quality and closeness. One reason for this association is that the use of more sexual terms might indicate that couples are talking about sex more frequently and have

greater comfort with sexual communication. Further, in research by Jonason, Betteridge and Kneebone (2016), more relationship-oriented talk during sex was associated with greater sexual and relationship satisfaction compared to more self-focused types of erotic talk.

Individual differences in romantic attachment also influence comfort with sexual communication as well as sexual and relationship satisfaction. Securely attached people (i.e., those who are comfortable with intimacy and closeness) generally have committed, stable, and satisfying romantic relationships and enjoy sex in the context of relationships, more so than more insecurely attached people (i.e., those high in attachment anxiety and/or avoidance; Birnbaum et al., 2006). One key reason why secure people have more satisfying sex lives and relationships than less securely attached people stems from their increased comfort with communicating about sexuality with a romantic partner (Shaver & Mikulincer, 2005). In one study, secure individuals reported less inhibited sexual communication compared to anxious and avoidant individuals, and this was found to mediate the relationship between attachment and sexual satisfaction (Davis et al., 2006). Similarly, in a more recent study of partnered gay men, securely attached individuals reported the highest levels of sexual communication and experienced greater relationship quality, and men with securely attached partners were the most likely to report having sex with their partners at least once per week (Starks & Parsons, 2014).

Sexual communication may be particularly important as couples navigate changes to their lives or to their relationships. For example, during the transition to parenthood, parents juggle a host of novel sexual stressors that may strain their emotional and physical resources and interfere with their ability to connect as a couple (Schlagintweit, Bailey, &

Rosen, 2016). Therefore, how partners communicate with each other about their sex lives during this transition is likely to shape relationship and sexual satisfaction. Indeed, in one study, new mothers reported that communication with their partner about discrepancies in sexual desire was central to negotiating different sexual needs between partners and enhancing their sexual satisfaction during the transition to parenthood (Olsson, Lundqvist, Faxelid, & Nissen, 2005).

Sexual Expectations

In addition to being shaped by the way couples communicate about sex and their motivations for engaging in sex, sexual and relationship satisfaction are also likely shaped by people's expectations about sex—for example, their expectations about how sexual desire will change over time in their relationship and their expectations for what it takes to maintain sexual desire and satisfaction. Generally speaking, people are motivated to view their relationships positively and these cognitive processes help to maintain romantic relationships over time (Murray et al., 2011), at least for those in healthy relationships at the outset (McNulty, O'Mara, & Karney, 2008). Recent research has shown the same to be true in the sexual domain of relationships. de Jong and Reis (2015) showed that partners higher in commitment tend to view their current partner as their ideal sexual partner and feel optimistic about their future sex lives, motivational processes which bolster people's resolve to persist in their relationships. Assuming such processes are occurring in healthy, well-functioning relationships, they may predict better sexual outcomes over time, and additional research is needed to test this possibility.

People also have expectations about how satisfied they expect to feel with their sex lives in the future, and through a process of perceptual confirmation, it is possible that they

eventually evaluate their sex lives in a way that is consistent with their initial expectations. In one study, both romantic partners reported their sexual satisfaction and sexual frequency at one time point, and in a 7-day diary study, made predictions about how sexually satisfied they expected to feel the next day (McNulty & Fisher, 2008). Women with more positive sexual expectancies were more sexually satisfied six months later. For men, in contrast, over a six-month period, changes in sexual frequency, rather than expectations, predicted changes in their sexual satisfaction: engaging in less frequent sex at the six-month follow-up compared to the beginning of the study was associated with lower sexual satisfaction. Because women's sexual experiences are more influenced by contextual factors such as acculturation, education, and religion (e.g., Peplau, 2003), women's expectations about a sexual relationship may more strongly influence their sexual satisfaction, whereas men's sexual satisfaction may be more strongly influenced by objective aspects such as sexual frequency.

Research also suggests that people's implicit beliefs about how sexual satisfaction and attraction are maintained over time in a relationship have implications for their sexual and relationship quality (Bohns, Scholer, & Rehman, 2015; Maxwell et al., 2016). A robust body of research demonstrates that people's implicit theories regarding whether particular behaviors are innate or take effort to cultivate can shape the ways people approach and ultimately engage in such behaviors (Dweck, 2008). In the domain of sexuality, Maxwell and colleagues (2016) distinguished between two types of beliefs about sexual satisfaction. Whereas *sexual growth* believers think that sexual satisfaction is maintained by work and effort, *sexual destiny* believers think that sexual satisfaction results from finding a highly compatible partner, their sexual "soulmate." The results of six studies showed that sexual

growth believers were more responsive sexual partners and reported higher sexual and relationship satisfaction as a result. In contrast, sexual destiny believers used their sexual compatibility with their partner as a barometer for relationship quality, and as such, were more sensitive to sexual disagreements and experienced lower relationship satisfaction (Maxwell et al., 2016).

Sexual expectations may be especially important when people face entirely new experiences, such as when parents welcome their first baby into the family. New parents generally have positive expectations for their ability to navigate this transition (Belsky, 1985), which likely leads to expectations that their sex lives will “return to normal” soon after the baby is born. Unfortunately, given the prevalence and wide range of sexual concerns experienced by new parents (Schlagentweit, Bailey, & Rosen, 2016), they are unlikely to have these expectations met. Unmet expectations may lead to feelings of disappointment and increased relationship conflict (Rusbult & Arriaga, 1997), with repercussions for the sexual and relationship satisfaction of both parents. However, people with a stronger set of cognitive and behavioral resources, such as those who make more adaptive attributions for changes to their sexual relationship, have better sexual communication or who are more responsiveness to a partner’s needs, should be better equipped to cope when their expectations are not met, and experience fewer negative consequences as a result (Harwood, McLean, & Durkin, 2007). Indeed, when new mothers reported less stable and fewer partner attributions for postpartum sexual concerns, they were more sexually satisfied, and when they attributed less responsibility for sexual concerns to their partners, they were more satisfied with their overall relationship (Vannier, Adare, & Rosen, 2018). Further, Maxwell et al. (2016) found that holding stronger

sexual growth beliefs and having a partner who is higher in sexual growth beliefs were both associated with greater sexual and relationship satisfaction during the transition to parenthood.

Future Directions for Research on Sex and Relationship Maintenance

In recent years, sexuality research and relationship science have become more integrated (Impett & Muise, in press; Muise, Maxwell, & Impett, 2018). As such, we have learned a great deal about how healthy and satisfying sexual relationships can strengthen relationships and boost well-being. Yet, since the integration of these fields is still relatively new, many unanswered questions remain. In this section, we highlight five promising directions for future research on sex and relationship maintenance including: (1) research on how people decline (or reject) their partners' sexual advances as well as respond to sexual rejection; (2) research on accuracy and bias in perceptions of a partner's sexual motives, feelings, and behaviors; (3) research using diverse methodological approaches such as modeling trajectories (including non-linear trajectories) of sexual outcomes over time in relationships; (4) research that moves beyond the use of self-report measures; and (5) additional research on sexuality during important relationship and life transitions.

One promising direction for future research on sex and relationship maintenance involves moving beyond the almost exclusive focus on understanding what happens when couples *do* have sex to understand what happens when couples *do not* have sex, including how people decline a partners' request for sex and deal with sexual rejection. Given that it is normative for desire to ebb and flow over time in relationships and partners cannot always be in sync with their sexual interests (Impett et al., 2014), people will inevitably need to decline or reject their partner's sexual advances. Sexual rejection is common in

romantic relationships: In a study of dating relationships, most people reported either declining their partner's sexual advances or having their advances declined at least once per week, and relationship satisfaction was lower when people had their sexual advances declined as opposed to accepted (Byers & Heinlein, 1989). There are likely some situations and life stages when rejection is more relevant to and frequent in relationships, such as the transition to parenthood. We currently know very little about the ways that people reject their partner for sex, or if there are particular ways of doing so that protect couples against experiencing declines in relationship and sexual satisfaction. Findings from a recent study suggest that, in the context of long-term romantic relationships, there might be times when it is better for people to decline their partner's sexual advances in reassuring ways, such as by telling their partner they are still loved and desired, than to engage in sex reluctantly to avoid conflict or hurting a partner's feelings (Kim, Muise, & Impett, in press). Much more research is needed, however, to determine which particular sexual rejection behaviors more effectively buffer couples against the sting of sexual rejection, both in the moment when couples experience rejection, as well as when particular types of rejection are used more chronically over time.

The flip side to delivering sexual rejection is understanding how people respond to or cope with *being rejected*. Although it is sometimes important to be responsive to a partner's needs to engage in sex (Muise & Impett, 2016), at other times it is important to be understanding about a partner's need to *not* engage in sex. In a study of couples who had recently had their first child—a time when romantic partners experience many novel sexual concerns, including a dip in sexual desire (Schlagentweit et al., 2016)—showing understanding about a partner's need not to have sex was just as important for relationship

Commented [BO4]: I believe this is the research I commented on earlier in the your chapter. I am glad to see that you are including it here.

and sexual satisfaction as being responsive to a partner's need to engage in sex. In particular, when new mothers and fathers were more motivated to be responsive to their partner's need not to engage in sex, they felt more satisfied with their sex lives and relationships (Muisse, Rosen, Kim, & Impett, 2017). In addition, having a partner who was more understanding about the need not have sex was associated with greater sexual and relationship satisfaction for new mothers. Understanding how both partners can be buffered against the negative consequences of a partner's lack of interest in sex and possible sexual rejection are crucial to our understanding of the role of sex in relationship maintenance.

A second area of inquiry that has the potential to lead to important insights about sexuality and relationship maintenance is accuracy and bias in perceptions of a partner's motives, feelings and behaviors. We know from dyadic research on sexuality that partners influence each other's experiences and outcomes in relationships, but we know far less about how accurate or biased people are in their perceptions of their partner's intentions. For example, although research has shown that a person's sexual goals are associated with their partner's desire and satisfaction (Muisse et al., 2013), the association between one person's sexual goals and the partner's perceptions of their sexual goals are only weakly correlated (Impett et al., 2005). In fact, recent work has demonstrated that although people are reasonably accurate at detecting daily changes in their partner's sexual desire, men on average tend to underestimate their partner's sexual desire (Muisse, Stanton, Kim, & Impett, 2017). Although underestimating a partner's desire could mean that couples are missing out on opportunities for sex, this work has also shown that on days when men underperceive their partner's sexual desire, their partner feels more satisfied with the

relationship. While we do not yet know why women feel more satisfied when their partners underperceive their desire, it may be because their partners work harder to entice their interest, although future research is needed to test this possibility. New modeling techniques—such as the Truth and Bias Model (West & Kenny, 2011) and response surface analyses (Barranti, Carlson, & Côté, 2017)—provide novel opportunities for researchers to test how accurate and biased people are in detecting their partner’s sexual motives, feelings, and behaviors and the consequences of these perceptions for sexual and relationship outcomes.

A third direction for future research is the use of novel methodological approaches, including mapping, longitudinally, how sexual outcomes such as desire and satisfaction ebb and flow over time in relationships. With advanced statistical methods including growth curve analyses, researchers have begun to examine trajectories of sexual and relationship satisfaction over time (e.g., McNulty et al., 2015; Fallis et al., 2016). Still, the majority of longitudinal research examining how sexuality-related factors shape the satisfaction and maintenance of relationships has focused on predicting relationship outcomes (e.g., three or six months later) rather than trajectories, and has included only two time points, precluding any examination of non-linear patterns. Research on support in relationships more broadly suggests that a curvilinear association—where the benefits of responsive support toward a partner do not increase with increasing support, but—at least for avoidantly attached people—are negative at low and extremely high levels of support but positive at moderate levels of support—demonstrates the importance of modeling non-linear outcomes (Girme, Overall, Simpson, & Fletcher, 2015). In research on sexual frequency and well-being, Muise et al. (2016) found that the associations between sexual

frequency and both relationship and life satisfaction were best represented by a curvilinear association where the benefits of engaging in sex for well-being did not increase after a frequency of about once a week. Although many people in committed romantic relationships experience declines in sexual desire and satisfaction over time, this is not true for everyone, yet the possibility of nonlinear trends has been largely ignored in research to date. Given that sexual desire, preferences, and behaviors, are known to ebb and flow in relationships and to be especially responsive to novel stressors or life transitions (e.g., Jawed-Wessel & Sevic, 2017), longitudinal studies focusing on trajectories will enhance our understanding of how sex can help maintain or interfere with the maintenance of relationships for different couples over time.

A fourth direction for future research is to move beyond the use of self-report measures. Given the challenges of studying sexuality in relationships using experimental methods, the vast majority of the research in this area is based on self-report measures. An important direction for future research is to combine self-reports with other approaches such as behavioral observation and psychophysiological assessments. In one study in which couples had in-lab conversations about a sexual and non-sexual conflict and researchers coded their communication behaviors, the results showed that *how* couples communicated about difficult issues—such as the amount of negative emotional expressions (i.e., defensiveness, contempt) and positive emotional expressions (i.e., responsiveness, caring) they displayed—was associated with marital satisfaction and that discussions of sexual conflicts were particularly impactful for satisfaction (compared to non-sexual conflict discussions; Rehman et al., 2011). Further, among couples coping with pain during sex, when women demonstrated greater empathic responses during a

discussion about how the pain impacted their lives, they and their partners reported higher sexual and relationship satisfaction (Bois et al., 2015; Rosen, Bois, Mayrand, Vannier, & Bergeron, 2016). Coding couple interactions, as well as assessing physiological responses (such as stress responses), could provide important insights into the factors that are associated with the successful navigation of sexual conflicts in relationships. Sexuality researchers have assessed physiological responses to sexual stimuli in terms of genital arousal, which has garnered important insights into gender differences in sexual responses and the correspondence between genital and self-reported arousal (see Chivers, Seta, Lalumiere, Laan, & Grimbos, 2010 for a review). However, this work is not often positioned in the context of romantic relationships, nor has it focused on how couples can more successfully navigate sexual challenges in their relationships.

A fifth direction for future research is the need for more work on changes to sexuality over important life and relationship transitions. Much of the research examining how sex contributes to relationship maintenance has focused on couples in dating or committed relationships, but who are still relatively young and healthy. Much can be learned about the role of sex in relationship maintenance when couples are faced with challenging life transitions or situations that can interfere with their relationship. In this chapter, we highlighted recent work on the transition to parenthood, a key period in which couples are known to experience many new sexual concerns (Schlagintweit et al., 2016), and which is typically accompanied by significant declines in sexual and relationship satisfaction (Maas, McDaniel, Feinberg, & Jones, 2015; Serati et al., 2010). We believe that the transition to parenthood is an ideal time to examine the role of sex in relationship maintenance because there is a clearly identifiable “transition”—the birth of the child—

which can trigger changes to the sexual relationship. The transition to parenthood is only one example of a life transition that presents novel sexual and relationship challenges. The transition to older adulthood is another period when many couples experience declines in their sexual functioning, commonly as a result of other physical health problems or life stressors (Laumann et al., 2008). Interestingly, older adults experience less sexual distress than younger individuals with similar sexual function problems, and many remain sexually active and satisfied well into late adulthood (Mitchell et al., 2013). Further, individuals who maintain their sexual connection into older adulthood not only report greater well-being, but show lower mortality rates (see review by Diamond & Huebner, 2012). There is a lot to learn from how older adults navigate and maintain the quality of their sexual and intimate relationships, and these insights might be fruitfully applied to understand the role of sex in relationship maintenance in other samples.

Conclusion

Successfully navigating sexual challenges and maintaining sexual fulfillment has great potential to enhance the quality and stability of romantic relationships, and some of the lines of researched described in this chapter have begun to shed light on how couples may best do this. We hope that our review of the growing literature on the role of sex in relationship maintenance highlights how much we have learned and sparks increased interest in a topic that is integral to strengthening the quality and longevity of romantic relationships.

Commented [B05]:

This was a great chapter and really enjoyable to read. In addition to the minor edits throughout, we would like you to clarify your definition of maintenance from the outset of the paper and then use that definition throughout. Much of the chapter used the term satisfaction rather than maintenance so it will be important that you make this distinction clear

EAI: Added earlier and revised throughout

References

- Acevedo, B. P., & Aron, A. (2009). Does a long-term relationship kill romantic love? *Review of General Psychology, 13*, 59-65.
- Ahlborg, T., Rudeblad, K., Linnér, S., & Linton, S. (2008). Sensual and sexual marital contentment in parents of small children—A follow-up study when the first child is four years old. *Journal of Sex Research, 45*, 295-304.
- Babin, E. (2012). An examination of predictors of nonverbal and verbal communication of pleasure during sex and sexual satisfaction. *Journal of Social and Personal Relationships, 30*, 270-292.
- Barranti, M., Carlson, E., & Côté, S. (2017). How to test questions about similarity in personality and social psychology research: Description and empirical demonstration of response surface analysis. *Social Psychological and Personality Science*. Advance online publication.
- Baumeister, R. F., & Bratslavsky, E. (1999). Passion, intimacy, and time: Passionate love as a function of change in intimacy. *Personality and Social Psychology Review, 3*, 49-67.
- Belsky, J. (1985). Exploring individual differences in marital change across the transition to parenthood: The role of violated expectations. *Journal of Marriage and the Family, 47*, 1037-1044.
- Berscheid, E., & Reis, H. T. (1998). Attraction and close relationships. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Ed.), *The handbook of social psychology*. New York, NY: McGraw-Hill.

Commented [BO6]: The reference list is about 25% of the total length of the chapter. It would be ideal if you could cut this down by a few pages, if possible.

EAI: I cut as many as possible. But I also added some to address the questions raised by the two of you. I feel like this list is still way over what you are looking for, but I am not sure what else to cut.

- Birnbaum, G. E., Reis, H. T., Mikulincer, M., Gillath, O., & Orpaz, A. (2006). When sex is more than just sex: attachment orientations, sexual experience, and relationship quality. *Journal of Personality and Social Psychology, 91*, 929-943.
- Blair, K. L., & Pukall, C. F. (2014). Can less be more? Comparing duration vs. frequency of sexual encounters in same-sex and mixed-sex relationships. *The Canadian Journal of Human Sexuality, 23*, 123-136.
- Bohns, V. K., Scholer, A. A., & Rehman, U. (2015). Implicit theories of attraction. *Social Cognition, 33*, 284-307.
- Bois, K., Bergeron, S., Rosen, N., Mayrand, M. H., Brassard, A., & Sadikaj, G. (2016). Intimacy, sexual satisfaction, and sexual distress in vulvodynia couples: An observational study. *Health Psychology, 35*, 531-540.
- Bridges, S. K., & Horne, S. G. (2007). Sexual satisfaction and desire discrepancy in same sex women's relationships. *Journal of Sex & Marital Therapy, 33*, 41-53.
- Brunell, A. B., & Webster, G. D. (2013). Self-determination and sexual experience in dating relationships. *Personality and Social Psychology Bulletin, 39*, 970-987.
- Burke, T. J., & Young, V. J. (2012). Sexual transformations and intimate behaviors in romantic relationships. *Journal of Sex Research, 49*, 454-463.
- Burri, A., Giuliano, F., McMahon, C., & Porst, H. (2014). Female partner's perception of premature ejaculation and its impact on relationship breakups, relationship quality, and sexual satisfaction. *The Journal of Sexual Medicine, 11*, 2243-2255.
- Byers, E. S., & Demmons, S. (1999). Sexual satisfaction and sexual self-disclosure within dating relationships. *Journal of Sex Research, 36*, 180-189.

- Byers, E. S., & Heinlein, L. (1989). Predicting initiations and refusals of sexual activities in married and cohabiting heterosexual couples. *Journal of Sex Research, 26*, 210-231.
- Cassidy, J., & Shaver, P. R. (Eds.). (1999). *Handbook of attachment: Theory, research, and clinical applications*. New York: Guilford Press.
- Cheung, M. W. L., Wong, P. W. C., Liu, K. Y., Yip, P. S. F., Fan, S. Y., & Lam, T. (2008). A study of sexual satisfaction and frequency among Hong Kong Chinese couples. *Journal of Sex Research, 45*, 129-139.
- Chivers, M. L., Seto, M. C., Lalumiere, M. L., Laan, E., & Grimbos, T. (2010). Agreement of self-reported and genital measures of sexual arousal in men and women: A meta-analysis. *Archives of Sexual Behavior, 39*, 5-56.
- Davis, D., Shaver, P. R., Widaman, K. F., Vernon, M. L., Follette, W. C., & Beitz, K. (2006). "I can't get no satisfaction": Insecure attachment, inhibited sexual communication, and sexual dissatisfaction. *Personal Relationships, 13*, 465-483.
- Davies, S., Katz, J., & Jackson, J. L. (1999). Sexual desire discrepancies: Effects on sexual and relationship satisfaction in heterosexual dating couples. *Archives of Sexual Behavior, 28*, 553-567.
- Day, L. C., Muise, A., Joel, S., & Impett, E. A. (2015). To do it or not to do it? How communally motivated people navigate sexual interdependence dilemmas. *Personality and Social Psychology Bulletin, 41*, 791-804.
- Debrot, A., Meuwly, N., Muise, A., Impett, E. A., & Schoebi, D. (2017). More than just sex: Affection mediates the association between sexual activity and well-being. *Personality and Social Psychology Bulletin, 43*, 287-299.

- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268.
- de Jong, D. C., & Reis, H. T. (2015). We do it best: commitment and positive construals of sex. *Journal of Social and Clinical Psychology, 34*, 181-202.
- Diamond, L. M. (2004). Emerging perspectives on distinctions between romantic love and sexual desire. *Current Directions in Psychological Science, 13*, 116-119.
- Diamond, L. M., & Huebner, D. M. (2012). Is good sex good for you? Rethinking sexuality and health. *Social and Personality Psychology Compass, 6*, 54-69.
- Dweck, C. S. (2008). Can personality be changed? The role of beliefs in personality and change. *Current Directions in Psychological Science, 17*, 391-394.
- Fallis, E. E., Rehman, U. S., Woody, E. Z., & Purdon, C. (2016). The longitudinal association of relationship satisfaction and sexual satisfaction in long-term relationships. *Journal of Family Psychology, 30*, 822-831.
- Fisher, T. D., & McNulty, J. K. (2008). Neuroticism and marital satisfaction: The mediating role played by the sexual relationship. *Journal of Family Psychology, 22*, 112-122.
- Fritz, H. L., & Helgeson, V. S. (1998). Distinctions of unmitigated communion from communion: self-neglect and overinvolvement with others. *Journal of Personality and Social Psychology, 75*, 121-140.
- Gable, S. L., & Impett, E. A. (2012). Approach and avoidance motives and close relationships. *Social and Personality Psychology Compass, 6*, 95-108.
- Girme, Y. U., Overall, N. C., Simpson, J. A., & Fletcher, G. J. (2015). “All or nothing”: Attachment avoidance and the curvilinear effects of partner support. *Journal of Personality and Social Psychology, 108*, 450-475.

- Harwood, K., McLean, N., & Durkin, K. (2007). First-time mothers' expectations of parenthood: What happens when optimistic expectations are not matched by later experiences? *Developmental Psychology, 43*, 1-12.
- Heiman, J. R., Long, S. J., Smith, S. N., Fisher, W. A., & Sand, M. S. (2010). Sexual satisfaction and relationship happiness in midlife and older couples in five countries. *Archives of Sexual Behavior, 40*, 741-753.
- Hess, J. A., & Coffelt, T. A. (2012). Verbal communication about sex in marriage: Patterns of language use and its connection with relational outcomes. *Journal of Sex Research, 49*, 603-612.
- Hinchliff, S., & Gott, M. (2008). Challenging social myths and stereotypes of women and aging: Heterosexual women talk about sex. *Journal of Women & Aging, 20*, 65-81.
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLOS Med, 7*, e1000316.
- Impett, E. A., Gable, S. L., & Peplau, L. A. (2005). Giving up and giving in: The costs and benefits of daily sacrifice in intimate relationships. *Journal of Personality and Social Psychology, 89*, 327-344.
- Impett, E. A., Gere, J., Kogan, A., Gordon, A. M., & Keltner, D. (2014). How sacrifice impacts the giver and the recipient: Insights from approach-avoidance motivational theory. *Journal of Personality, 82*, 390-401.
- Impett, E. A., & Muise, A. (in press). The sexing of relationship science: Impetus for the special issue. *Journal of Social and Personal Relationships*.
- Impett, E. A., Muise, A., & Harasymchuk, C. (under review). Giving in the bedroom: The costs and benefits of responding to a partner's sexual needs in daily life.

- Impett, E. A., Muise, A., & Peragine, D. (2014). Sexuality in the context of relationships. In D. L. Tolman, L. M. Diamond, J. A. Bauermeister, W. H. George, J. G. Pfaus, & L. M. Ward (Eds.), *APA Handbook of Sexuality and Psychology* (Vol 1, pp. 269-315). Washington DC: American Psychological Association.
- Impett, E. A., Muise, A., & Rosen, N. O. (2015). Is it good to be giving in the bedroom? A prosocial perspective on sexual health and well-being in romantic relationships. *Current Sexual Health Reports, 7*, 180-190.
- Impett, E. A., & Peplau, L. A. (2003). Sexual compliance: Gender, motivational, and relationship perspectives. *Journal of Sex Research, 40*, 87-100.
- Impett, E. A., Peplau, L. A., & Gable, S. L. (2005). Approach and avoidance sexual motives: Implications for personal and interpersonal well-being. *Personal Relationships, 12*,
- Impett, E. A., Strachman, A., Finkel, E. J., & Gable, S. L. (2008). Maintaining sexual desire in intimate relationships: The importance of approach goals. *Journal of Personality and Social Psychology, 94*, 808-823.
- Jawed-Wessel, S., & Sevic, E. (2017, February). The impact of pregnancy and childbirth on sexual behaviors: A systematic review. *The Journal of Sex Research*. Advance online publication.
- Jonason, P. K., Betteridge, G. L., & Kneebone, I. I. (2016). An examination of the nature of erotic talk. *Archives of Sexual Behavior, 45*, 21-31.
- Karney, B. R., & Bradbury, T. N. (1997). Neuroticism, marital interaction, and the trajectory of marital satisfaction. *Journal of Personality and Social Psychology, 72*, 1075-1092.
- Kim, J. J., Muise, A., & Impett, E. A. (in press). The relationship implications of rejecting a

partner for sex kindly versus having sex reluctantly. *Journal of Social and Personal Relationships*.

- Laumann, E. O., Paik, A., Glasser, D. B., Kang, J. H., Wang, T., Levinson, B., Moreira, E. D., Nicolosi, A., & Gingell, C. (2006). A cross-national study of subjective sexual well-being among older women and men: Findings from the Global Study of Sexual Attitudes and Behaviors. *Archives of Sexual Behavior, 35*, 143-159.
- Lavner, J. A., & Bradbury, T. N. (2010). Patterns of change in marital satisfaction over the newlywed years. *Journal of Marriage and Family, 72*, 1171-1187.
- Le, B. M., Impett, E. A., Lemay, E. P., Muise, A., & Tskhay, K. O. (2018). Communal motivation and subjective well-being in interpersonal relationships: An integrative review and meta-analysis. *Psychological Bulletin, 144*, 1-25
- Little, K. C., McNulty, J. K., & Russell, V. M. (2010). Sex buffers intimates against the negative implications of attachment insecurity. *Personality and Social Psychology Bulletin, 36*, 484-498.
- Loewenstein, G., Krishnamurti, T., Kopsic, J., & McDonald, D. (2015). Does increased sexual frequency enhance happiness? *Journal of Economic Behavior & Organization, 116*, 206-218.
- Maas, M. K., McDaniel, B. T., Feinberg, M. E., & Jones, D. E. (2015). Division of labor and multiple domains of sexual satisfaction among first-time parents. *Journal of Family Issues, 1-24*.
- MacNeil, S., & Byers, E. S. (2009). Role of sexual self-disclosure in the sexual satisfaction of long-term heterosexual couples. *Journal of Sex Research, 46*, 3-14.

- Mark, K. P. (2012). The relative impact of individual sexual desire and couple desire discrepancy on satisfaction in heterosexual couples. *Sexual and Relationship Therapy, 27*, 133-146.
- Maxwell, J. A., Muise, A., MacDonald, G., Day, L. C., Rosen, N. O., & Impett, E. A. (2017). How implicit theories of sexuality shape sexual and relationship well-being. *Journal of Personality and Social Psychology, 112*, 238-279.
- McNulty, J. K., & Fisher, T. D. (2008). Gender differences in response to sexual expectancies and changes in sexual frequency: A short-term longitudinal study of sexual satisfaction in newly married couples. *Archives of Sexual Behavior, 37*, 229-240.
- McNulty, J. K., O'Mara, E. M., & Karney, B. R. (2008). Benevolent cognitions as a strategy of relationship maintenance: "don't sweat the small stuff" But it is not all small stuff. *Journal of Personality and Social Psychology, 94*, 631-646.
- McNulty, J. K., Wenner, C. A., & Fisher, T. D. (2015). Longitudinal associations among marital satisfaction, sexual satisfaction, and frequency of sex in early marriage. *Archives of Sexual Behavior, 45*, 85-97.
- Meltzer, A. L., Makhanova, A., Hicks, L. L., French, J. E., McNulty, J. K., & Bradbury, T. N. (2017). Quantifying the sexual afterglow: The lingering benefits of sex and their implications for pair-bonded relationships. *Psychological Science, 28*, 587-598.
- Mitchell, K. R., Mercer, C. H., Ploubidis, G. B., Jones, K. G., Datta, J., Field, N., et al. (2013). Sexual function in Britain: Findings from the Third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *Lancet, 382*, 1817-1829.

- Muise, A., Bergeron, S., Impett, E. A., & Rosen, N. O. (2017, February). The costs and benefits of sexual communal motivation for couples coping with vulvodynia. *Health Psychology*. Advance online publication, doi: 10.1037/hea0000470.
- Muise, A., Boudreau, G. K., & Rosen, N. O. (2017). Seeking connection versus avoiding disappointment: An experimental manipulation of approach and avoidance sexual goals and the implications for desire and satisfaction. *The Journal of Sex Research*, *54*, 296-307.
- Muise, A., Giang, E., & Impett, E. A. (2014). Post sex affectionate exchanges promote sexual and relationship satisfaction. *Archives of Sexual Behavior*, *43*, 1391-1402.
- Muise, A., & Impett, E. A. (2015). Good, giving, and game. The relationship benefits of communal sexual motivation. *Social Psychological and Personality Science*, *6*, 164-172.
- Muise, A., & Impett, E. A. (2016). Applying theories of communal motivation to sexuality. *Social and Personality Psychology Compass*, *10*, 455-467.
- Muise, A., Impett, E. A., & Desmarais, S. (2013). Getting it on versus getting it over with sexual motivation, desire, and satisfaction in intimate bonds. *Personality and Social Psychology Bulletin*, *39*, 1320-1332.
- Muise, A., Impett, E. A., Kogan, A., & Desmarais, S. (2013). Keeping the spark alive: Being motivated to meet a partner's sexual needs sustains sexual desire in long-term romantic relationships. *Social Psychological and Personality Science*, *4*, 267-273
- Muise, A., Maxwell, J., & Impett, E. A. (2018). What theories and methods from relationship science can offer sex research. *Annual Review of Sex Research*. Advance online publication.

- Muise, A., Rosen, N. O., Kim, J. J., & Impett, E. A. (2017). Understanding when a partner is not in the mood: Sexual communal strength in couples transitioning to parenthood. *Archives of Sexual Behavior*. Advance online publication, doi:10.1007/s10508-016-0920-2
- Muise, A., Schimmack, U., & Impett, E. A. (2016). Sexual frequency predicts greater well-being, but more is not always better. *Social Psychological and Personality Science*, 7, 295-302.
- Murray, S. L., Griffin, D. W., Derrick, J. L., Harris, B., Aloni, M., & Leder, S. (2011). Tempting fate or inviting happiness? Unrealistic idealization prevents the decline of marital satisfaction. *Psychological Science*, 22, 619-626.
- Nagurney, A. J. (2007). The effects of relationship stress and unmitigated communion on physical and mental health outcomes. *Stress and Health*, 23, 267-273.
- Olsson, A., Lundqvist, M., Faxelid, E., & Nissen, E. (2005). Women's thoughts about sexual life after childbirth: focus group discussions with women after childbirth. *Scandinavian Journal of Caring Sciences*, 19, 381-387.
- Peplau, L. A. (2003). Human sexuality how do men and women differ? *Current Directions in Psychological Science*, 12, 37-40.
- Pietromonaco, P. R., & Collins, N. C. (2017). Interpersonal mechanisms linking close relationships to health. *American Psychologist*, 72, 531-542.
- Rahmani, A., Khoei, E. M., & Gholi, L. A. (2009). Sexual satisfaction and its relation to marital happiness in Iranians. *Iranian Journal of Public Health*, 38, 77-82.
- Rancourt, K. M., Rosen, N. O., Bergeron, S & Neilis, L. (2016). Talking about sex when sex is painful: Dyadic sexual communication is associated with women's pain and couple's

sexual and psychological outcomes in provoked vestibulodynia. *Archives of Sexual Behavior*, 45, 1933-1944.

Rehman, U. S., Janssen, E., Newhouse, S., Heiman, J., Holtzworth-Munroe, A., Fallis, E., & Rafaeli, E. (2011). Marital satisfaction and communication behaviors during sexual and nonsexual conflict discussions in newlywed couples: A pilot study. *Journal of Sex & Marital Therapy*, 37, 94-103.

Righetti, F., & Impett, E. A. (in press). Sacrifice in close relationships: Motives, emotions, and relationship outcomes. *Social and Personality Psychology Compass*.

Risch, G. S., Riley, L. A., & Lawler, M. G. (2003). Problematic issues in the early years of marriage: Content for premarital education. *Journal of Psychology & Theology*, 31, 253-269.

Rosen, R. C. (2000). Prevalence and risk factors of sexual dysfunction in men and women. *Current Psychiatry Reports*, 2, 189-195.

Rosen, R. C., Heiman, J. R., Long, J. S., Fisher, W. A., & Sand, M. S. (2016). Men with sexual problems and their partners: Findings from the International Survey of Relationships. *Archives of Sexual Behavior*, 45, 159-173.

Rosen, N. O., Bailey, K., & Muise, A. (2018). Degree and direction of sexual desire discrepancy are linked to sexual and relationship satisfaction in couples transitioning to parenthood. *Journal of Sex Research*, 55, 214-225.

Rosen, N. O., Bois, K., Mayrand, M.H., Vannier, S., & Bergeron, S. (2016). Observed and perceived disclosure and empathy are associated with better relationship adjustment and quality of life in couples coping with vulvodynia. *Archives of Sexual Behavior*, 45, 1945-1956.

- Rosen, N. O., Muise, A., Impett, E. A., Delisle, I., Baxter, M.L., & Bergeron, S. (2018). Sexual cues mediate the daily relations between interpersonal goals, pain, and wellbeing in couples coping with vulvodynia. *Annals of Behavioral Medicine*.
- Ruppel, E. K., & Curran, M. A. (2012). Relational sacrifices in romantic relationship: Satisfaction and the moderating role of attachment. *Journal of Social and Personal Relationships*, 29, 508-529.
- Rusbult, C. E., & Arriaga, X. B. (1997). Interdependence processes in close relationships. In S. Duck (Ed.), *Handbook of personal relationships*, 2nd ed (pp. 221-250). Chichester: Wiley.
- Russell, V. M., & McNulty, J. K. (2011). Frequent sex protects intimates from the negative implications of their neuroticism. *Social Psychological and Personality Science*, 2, 220-227.
- Schlagintweit, H., Bailey, K. & Rosen, N. O. (2016). A new baby in the bedroom: Frequency and severity of postpartum sexual concerns and their associations with relationship satisfaction in new parent couples. *The Journal of Sexual Medicine*, 13, 1455-1465.
- Schmiedeberg, C., Huyer-May, B., Castiglioni, L., & Johnson, M. D. (2017). The more or the better? How sex contributes to life satisfaction. *Archives of Sexual Behavior*, 46, 1-9.
- Schmiedeberg, C., & Schröder, J. (2016). Does sexual satisfaction change with relationship duration? *Archives of Sexual Behavior*, 45, 99-107.
- Serati, M., Salvatore, S., Siesto, G., Cattoni, E., Zanirato, M., Khullar, V., Cromi, A., Ghezzi, F., & Bolis, P. (2010). Female sexual function during pregnancy and after childbirth. *The Journal of Sexual Medicine*, 7, 2782-2790.

- Shapiro, A. F., Gottman, J. M., & Carrere, S. (2000). The baby and the marriage: Identifying factors that buffer against decline in marital satisfaction after the first baby arrives. *Journal of Family Psychology, 14*, 59-70.
- Shaver, P. R., & Mikulincer, M. (2005). Attachment theory and research: Resurrection of the psychodynamic approach to personality. *Journal of Research in Personality, 39*, 22-45.
- Sims, K. E., & Meana, M. (2010). Why did passion wane? A qualitative study of married women's attributions for declines in sexual desire. *Journal of Sex & Marital Therapy, 36*, 360-380.
- Smith, C. V. (2007). In pursuit of "good" sex: Self-determination and the sexual experience. *Journal of Social and Personal Relationships, 24*, 69-85.
- Smith, K. B., & Pukall, C. F. (2011). A systematic review of relationship adjustment and sexual satisfaction among women with provoked vestibulodynia. *Journal of Sex Research, 48*, 166-191.
- Sprecher, S. (1994). Two sides to the breakup of dating relationships. *Personal Relationships, 1*, 199-222.
- Sprecher, S. (2002). Sexual satisfaction in premarital relationships: Associations with satisfaction, love, commitment, and stability. *Journal of Sex Research, 39*, 190-196.
- Starks, T. J., & Parsons, J. T. (2014). Adult attachment among partnered gay men: Patterns and associations with sexual relationship quality. *Archives of Sexual Behavior, 43*, 107-117.
- Taylor, P., Funk, C., & Clark, A. (2007). Generation gap in values, behaviours: As marriage and parenthood drift apart, public is concerned about social impact. Pew Research Center. Retrieved from <http://www.pewsocialtrends.org/files/2007/07/Pew->

[Marriage-report-6-28-forwebdisplay.pdf](#)

Vannier, S. A., Adare, K. E., & Rosen, N. O. (in press). Is it me or you? First-time mothers' attributions for postpartum sexual concerns are associated with sexual and relationship satisfaction in the transition to parenthood. *Journal of Social and Personal Relationships*.

Vannier, S. A., Rosen, N. O., Mackinnon, S. P., & Bergeron, S. (2016). Maintaining affection despite pain: Daily associations between physical affection and sexual and relationship well-being in women with genito-pelvic pain. *Archives of Sexual Behavior*, 1-11.

Waite, L. J., Laumann, E. O., Das, A., & Schumm, L. P. (2009). Sexuality: Measures of partnerships, practices, attitudes, and problems in the National Social Life, Health, and Aging Study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 64B, i56-i66.

Wood, J., Desmarais, S., Burleigh, T., & Milhausen. (in press). Reasons for sex and relational outcomes in consensually non-monogamous and monogamous relationships: A self-determination theory approach. *Journal of Social and Personal Relationships*.

Yabiku, S. T., & Gager, C. T. (2009). Sexual frequency and the stability of marital and cohabiting unions. *Journal of Marriage and Family*, 71, 983-1000.