



Avoidantly Attached Individuals Are More Exchange-Oriented and Less Communal in the Bedroom

Stephanie Raposo¹ · Emily A. Impett² · Amy Muise¹

Received: 12 August 2019 / Revised: 27 July 2020 / Accepted: 29 July 2020
© Springer Science+Business Media, LLC, part of Springer Nature 2020

Abstract

Sexual need fulfillment in a relationship is associated with both partners' sexual and relationship quality. In the current research, we explored what underlies two approaches to sexual need fulfillment—sexual communal norms (i.e., being motivated to meet a partner's sexual needs) and sexual exchange norms (i.e., tracking and trading sexual benefits). People high in attachment avoidance are less responsive to their partner's needs and distance themselves from intimacy. Sexuality is a domain in which partners aim to meet each other's needs, but it may also heighten avoidantly attached partners' concerns about intimacy. Across three studies ($N=711$)—using cross-sectional, dyadic, daily experience, and longitudinal methods—endorsing sexual communal norms was associated with greater sexual and relationship quality, whereas endorsing sexual exchange norms was not associated with, or was linked to lower, sexual and relationship quality. People who were higher (compared to lower) in attachment avoidance were less sexually communal and more exchange-oriented, and their heightened endorsement of sexual exchange norms predicted lower relationship satisfaction over time. With two exceptions, the effects were largely consistent for men versus women. Findings from this research suggest that attachment avoidance underlies approaches to sexual need fulfillment in relationships.

Keywords Attachment avoidance · Sexual communion · Sexual exchange · Relationships

Introduction

Sexuality is one domain of relationships in which partners aim to meet each other's needs (e.g., Muise, Impett, Kogan, & Desmarais, 2013). Sexual need fulfillment, as opposed to the fulfillment of other types of needs, may be particularly impactful for relationship satisfaction given that most romantic relationships are sexually monogamous (Blanchflower & Oswald, 2004) and people expect to have their sexual needs met by their romantic partner (Day, Muise, Joel, & Impett, 2015). Research has shown that when people are motivated to be responsive to their partner's sexual needs (i.e., high sexual communion), both partners report

higher sexual desire, satisfaction, and commitment, compared to when people are less sexually communal (Muise & Impett, 2015; Muise et al., 2013). One approach often contrasted with endorsing sexual communal norms is endorsing sexual exchange norms, where partners in a relationship are focused on keeping the provision of sexual benefits fair and equal (for reviews, see Byers & Wang, 2004; Sprecher, 1998). Less is known about individual differences associated with endorsing sexual exchange norms or how taking an exchange approach to sexuality is associated with sexual and relationship quality.

The current research examined how endorsing communal and exchange norms in a sexual relationship are associated with sexual and relationship quality, and what may underlie these different approaches to sexual need fulfillment in relationships. Attachment avoidance—the extent to which a person values independence and avoids closeness and intimacy (Mikulincer & Shaver, 2003)—tends to influence how people both provide care for close others and expect their needs to be responded to in relationships (e.g., Bartz & Lydon, 2004, 2006, 2008; Feeney & Collins, 2001). However, fulfilling sexual needs in a relationship might heighten avoidantly attached people's distancing tendencies due to their discomfort with closeness and intimacy. Given that sexuality is a relationship domain in which partners have

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s10508-020-01813-9>) contains supplementary material, which is available to authorized users.

✉ Stephanie Raposo
raposos@yorku.ca

¹ Department of Psychology, York University, Behavioural Sciences Building, 4700 Keele Street, Toronto, ON M3J 1P3, Canada

² Department of Psychology, University of Toronto Mississauga, Mississauga, ON, Canada

unique roles in fulfilling each other's needs, we tested whether attachment avoidance was associated with approaches to sexual need fulfillment. Specifically, this research tested two key questions. First, how was the endorsement of sexual exchange norms (accounting for sexual communal norms) associated with sexual and relationship quality in committed relationships? Second, does attachment avoidance underlie approaches to sexual need fulfillment?

Communal and Exchange Approaches to Sexual Need Fulfillment

Responsively meeting the needs of close others is central to satisfying relationships (e.g., Lemay, Clark, & Feeney, 2007; Maisel & Gable, 2009). Two common approaches have been used to characterize different ways of giving and receiving benefits in a relationship—termed communal norms and exchange norms. When people endorse communal norms, they are concerned about meeting the needs of the other person (Clark & Mills, 1979). People who are highly communal are motivated to meet their partner's needs as they arise without the expectation of direct reciprocation (Clark & Mills, 2012), and they trust that their partner will also behave responsively to their own needs (Mills, Clark, Ford, & Johnson, 2004). In recent years, research has shown there are also individual differences in the extent to which people endorse communal norms in the sexual domain (for a review, see Muise & Impett, 2016). Results from longitudinal and daily experience studies have shown that being motivated to meet a partner's sexual needs (i.e., high sexual communion) is associated with higher sexual desire, as well as higher relationship satisfaction and commitment for both partners (Muise & Impett, 2015; Muise et al., 2013).

In contrast to endorsing communal norms, when people endorse exchange norms, they give benefits with the expectation of receiving equal or comparable benefits in return and are concerned with keeping track of benefits to keep things even between partners (Clark & Mills, 1979). Although social exchange theories have also been applied to sexuality (i.e., termed sexual exchange; e.g., Sprecher, 1998), associations between exchange norms and outcomes have been mixed. One line of research focusing on maintaining equity in a sexual relationship has found that when the balance of rewards and costs was equitable (i.e., exchanges were fair and equal), people reported higher satisfaction with their relationships and sex lives (termed the Interpersonal Exchange Model of Sexual Satisfaction; Byers & Wang, 2004; Hatfield, Greenberger, Traupmann, & Lambert, 1982; Lawrence & Byers, 1995). However, when exchanges were inequitable (i.e., partners were under- or over-benefitted), partners reported poorer outcomes such as sexual dissatisfaction, distress, and frustration (e.g., Hatfield et al., 1982; Sprecher, 1998, 2001). In addition, research has shown that tracking and trading benefits in relationships more generally is associated with lower satisfaction (Clark, Lemay, Graham, Pataki, & Finkel, 2010), and

men who endorse exchange norms about sex tend to be less satisfied with their relationship (Hughes & Snell, 1990). Therefore, it is possible that keeping things even sexually can make partners feel that the relationship is equitable which might be associated with more favorable outcomes, but it is also possible that tracking and trading sexual benefits has the potential to make sexual experiences feel less intimate and partners feel less connected.

There is currently limited work on differences in people's tendencies to endorse communal and exchange norms in relationships, but some work has shown that attachment underlies norms for general need fulfillment in romantic relationships. Whereas anxiously attached people are more likely to endorse communal norms, avoidantly attached people tend to endorse more exchange norms (e.g., Bartz & Lydon, 2006, 2008; Clark et al., 2010; Clark & Mills, 2012). However, we know less about individual differences in the endorsement of sexual norms and how sexual communal and exchange norms are associated with sexual and relationship outcomes. Understanding how a person's and their partner's endorsement of sexual communal and exchange norms is associated with sexual and relationship quality, as well as what may underlie the endorsement of these norms in a sexual relationship, could provide more nuanced insight into sexual need fulfillment and sexual and relationship quality for both partners.

Attachment Avoidance and Approaches to Sexual Need Fulfillment

Attachment is often categorized along two separate, continuous dimensions—*anxiety* and *avoidance* (e.g., Brennan, Clark, & Shaver, 1998). Whereas people high in attachment anxiety have a strong desire for closeness in their relationships and fear abandonment from their partners, people high in attachment avoidance tend to value independence and are uncomfortable with closeness and intimacy (e.g., Hazan & Shaver, 1994; Mikulincer & Shaver, 2003; see also Campbell, Simpson, Boldry, & Kashy, 2005). Given avoidantly attached people's fear of intimacy, their distancing tendencies may become triggered in sexual interactions with a romantic partner. People high in attachment avoidance tend to report lower levels of relationship and sexual satisfaction and more negative feelings during sex (Birnbaum, Reis, Mikulincer, Gillath, & Orpaz, 2006; Tracy, Shaver, Albino, & Cooper, 2003). In addition, they typically enjoy sex less and are generally less willing to engage in sex with a partner than those lower in attachment avoidance (Brassard, Shaver, & Lussier, 2007; Tracy et al., 2003). Avoidantly attached people are focused on avoiding intimacy and have a lower frequency of dyadic sex (Brassard et al., 2007; Gentzler & Kerns, 2004); therefore, their motivation during sex may be to limit intimacy and focus on their own needs (Birnbaum et al., 2006; Impett, Gordon, & Strachman, 2008).

Unlike secure or anxiously attached individuals who are generally more communal in their relationships (Bartz & Lydon,

2006, 2008; Clark et al., 2010), avoidantly attached people tend to be less communal and more exchange-oriented, as keeping track of favors may enable them to avoid closeness and maintain independence from their partner (Bartz & Lydon, 2008). In fact, avoidantly attached people dislike potential close others and feel more annoyed and anxious when others are more communal (rather than exchange-oriented), perhaps because communal cues signify increased closeness (Bartz & Lydon, 2006, 2008). When avoidantly attached people feel that experiences in their relationship are promoting emotional closeness, they redirect their motives to express manipulation and control over their partner and keep their distance in an attempt to protect themselves from negative outcomes (Birnbaum et al., 2006; Davis, Shaver, & Vernon, 2004). Applied to sexual need fulfillment in relationships, their discomfort with intimacy and the value they place on independence suggests that avoidantly attached people might be more focused on their own need fulfillment as opposed to their partner's sexual needs. In other words, it is possible that avoidantly attached people are less motivated to be responsive to their partner's sexual needs (i.e., they are less likely to endorse sexual communal norms), and more focused on tracking and trading benefits in a sexual relationship as a way to reduce sexual intimacy (i.e., they are more likely to endorse sexual exchange norms).

Partners of avoidantly attached people also tend to be less sexually satisfied (Butzer & Campbell, 2008) and do not gain as much from their sexual interactions, which has been theorized to be because their partner's sexual behaviors are often not enough to meet their emotional needs (Birnbaum, 2015; Birnbaum et al., 2006). Research has shown that avoidantly attached women are more likely to avoid sex (Brassard et al., 2007), which may be linked to their partner's own decreased motivations to engage in sex or experience intimacy (also termed the "dance of distance"; Gewirtz-Meydan & Finzi-Dottan, 2018; Middelberg, 2001). As such, when both partners are avoidantly attached, they experience more sexual problems, perhaps due to their shared discomfort with intimacy (Brassard et al., 2007). These findings suggest that highly avoidantly attached people, or those with an avoidantly attached partner, might report a lower endorsement of sexual communal norms and a higher endorsement of sexual exchange norms. However, mixed existing findings on exchange norms in sexual relationships make it unclear the extent to which endorsing sexual exchange norms might subsequently impact sexual and relationship quality.

The Current Research

In the current research using data from three multi-method studies (i.e., cross-sectional, dyadic, daily experience, longitudinal), we tested the associations between attachment avoidance, sexual communal and exchange norms, and sexual and relationship quality. Although attachment anxiety was controlled for in all analyses, our focus in this research was associations with attachment avoidance; thus, any findings regarding attachment anxiety will be presented in the Supplemental Materials for interested readers. Consistent with the past research, we expected that endorsing sexual communal norms would be associated with greater sexual satisfaction and relationship quality (i.e., satisfaction and commitment), but that endorsing sexual exchange norms would not be associated with better sexual and relationship outcomes and instead might be linked to lower satisfaction. In addition, we expected that people who were higher (vs. lower) in attachment avoidance would be more likely to endorse sexual exchange norms and less likely to endorse sexual communal norms in their relationships. In Study 1, we tested the factor structure for a measure of sexual exchange and initial associations between attachment avoidance, endorsing sexual communal and exchange norms, and sexual and relationship quality. In Study 2, we extended findings from Study 1 by testing dyadic associations between approaches to sexual need fulfillment and sexual and relationship quality, as well as attachment avoidance and approaches to sexual need fulfillment. Finally, in Study 3, we tested whether people higher (vs. lower) in attachment avoidance were less likely to endorse sexual communal norms and more likely to endorse sexual exchange norms in daily life, and we also tested whether this mediated associations between attachment avoidance and sexual and relationship quality over time.

Study 1

In Study 1, a cross-sectional study of people in romantic relationships, we conducted an exploratory factor analysis (EFA) to test the factor structure of an adapted sexual exchange measure (the Sexual Exchange subscale of the Sexual Relationship Scale; Hughes & Snell, 1990). Next, we tested associations between approaches to sexual need fulfillment (i.e., sexual communal and sexual exchange norms) and sexual and relationship quality. We also tested our key question of whether people higher in attachment avoidance would be more likely to endorse sexual exchange norms in their relationship, and less likely to endorse sexual communal norms. Finally, we explored whether the associations between sexual communal and exchange norms and sexual and relationship quality were moderated by attachment avoidance.

Table 1 Correlations among variables (Study 1)

	1	2	3	4	5	6	7	8	9
1. Age	–	.72***	–.04	–.15*	–.04	.02	.02	–.11	.07
2. Relationship duration		–	.06	–.06	–.02	–.11	–.04	–.18**	.07
3. Avoidance			–	.28***	.20**	–.31***	–.61***	–.49***	–.53***
4. Anxiety				–	.21**	–.02	–.28***	–.26***	–.13*
5. Sexual exchange					–	.05	–.07	–.00	–.13*
6. Sexual communion						–	.32***	.37***	.15*
7. Relationship satisfaction							–	.68***	.52***
8. Sexual satisfaction								–	.30***
9. Commitment									–
Mean	32.18	8.16	2.04	3.24	3.15	2.76	5.87	5.75	6.27
Standard deviation	.27	7.99	.92	1.08	1.12	.62	1.04	1.28	.95

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

Method

Participants

Participants were recruited through Prolific, an online recruitment platform. Eligible participants were sexually active, in a romantic relationship for at least 6 months, and 18 years of age or older. We recruited 267 participants, a sample size that is consistent with recommendations for extracting a small number of factors with moderately sized item communalities (Fabrigar & Wegener, 2012; MacCallum, Widaman, Zhang, & Hong, 1999; Sakaluk & Short, 2017). We excluded participants for not meeting the eligibility criteria ($n = 4$), failing to demonstrate proficiency with English ($n = 12$), not providing consent ($n = 1$), or not passing three or more attention checks using the Conscientious Responders Scale ($n = 2$; Marjanovic, Struthers, Cribbie, & Greenglass, 2014). The final sample consisted of 248 participants ($N = 97$ men, 147 women, 1 trans-identified as female, 1 “other,” 2 missing), a sample size which gives us 95% power to detect a medium effect ($f = .25$) at an alpha of .05. Participants ranged in age from 18 to 70 years ($M = 32.18$, $SD = 10.27$). The average relationship length was 8.16 years ($SD = 7.99$). Participants were White (85.5%), identified as “Other” (7.3%), Latin American (3.2%), Black (1.2%), East Asian (1.2%), South Asian (.4%), bi- or multi-ethnic/racial (.4%), missing (.8%). Participants were straight/heterosexual (84.7%), bisexual (8.9%), asexual (2.4%), lesbian (1.2%), pansexual (1.2%), queer (1.2%), or missing (.4%). Finally, participants were married (40.3%), dating (24.2%), living together (23.8%), common-law (5.2%), engaged (5.2%), or indicated “other” (1.2%).

Procedure

Participants were pre-screened for eligibility. Once eligibility and consent were confirmed, participants completed a 25-min online survey. We compensated participants up to \$3.58 CAD (approximately \$2.34 USD) for their participation.

Measures

In addition to the key variables, participants reported their age, ethnicity, sexual orientation, relationship status, and relationship duration (see Table 1 for correlations, means, and SDs). Data analyzed across studies were collected as part of larger studies with different broader goals, so although most measures are consistent across studies, some assessments vary (see Table 2 for general sample characteristics across studies). Reliability values are reported when applicable.

Sexual Exchange

We used seven items adapted from the Sexual Exchange subscale of the Sexual Relationship Scale (Hughes & Snell, 1990) and created two additional face valid items to assess sexual exchange. Given the addition of items and that the factor structure of the Sexual Exchange subscale has not been previously tested, we first aimed to test the factor structure. Data were analyzed using EFA according to best practices (e.g., Fabrigar, Wegener, MacCallum, & Strahan, 1999; Preacher & MacCallum, 2003; Sakaluk & Short, 2017). To test the factor structure of the Sexual Exchange subscale, we used maximum likelihood estimation and promax (i.e., oblique) rotation. The number of factors to retain was determined through parallel analysis using nested-model comparisons and examining descriptive measures of model fit (O'Connor, 2000; Sakaluk & Short, 2017). Parallel analysis revealed that factor solutions containing one to two common factors explained more variance in the scale items than randomly simulated factors, and thus were plausible factor solutions. We subsequently extracted factor solutions of one and two common factors for further examination, anticipating that the one-factor solution may be best given the results of the parallel analysis. A two-factor model demonstrated acceptable fit, $\chi^2(19) = 36.78$, $p = .01$, $TLI = .91$, $RMSEA = .06$; however, upon examining the two-factor model, the second factor simply contained all of the reverse-coded items, suggesting that this may

Table 2 Comparison of sample characteristics across studies

Characteristic	Study 1		Study 2		Study 3	
	<i>M</i> or <i>n</i>	<i>SD</i> or %	<i>M</i> or <i>n</i>	<i>SD</i> or %	<i>M</i> or <i>n</i>	<i>SD</i> or %
Age (years)	32.18	10.27	25.97	6.98	32.63	10.19
Relationship duration (years)	8.16	7.99	4.53	3.82	8.50	8.41
Ethnicity						
White		85.5%		53%		65.3%
Black		1.2%		10.4%		4.5%
Asian		1.6%		21.9%		15.7%
Latin American		3.2%		3.5%		4.1%
Other or chose not to specify		8.5%		22.9%		10.3%
Relationship status						
Dating		24.2%		48.5%		1.2%
Cohabiting		23.8%		28.7%		29.3%
Engaged		5.2%		2.5%		7.9%
Married		40.3%		16.8%		46.7%
Other		6.4%		3.5%		14%
Sexual orientation						
Bisexual		8.9%		5%		9.1%
Lesbian or gay		1.2%		2.5%		3.3%
Heterosexual		84.7%		83.7%		81.4%
Other, uncertain, or chose not to specify		5.2%		5.5%		6.2%

Percentages may not add up to 100% due to a small amount of missing data. Categories are collapsed when applicable to enable comparisons across studies

not represent a meaningful second factor. We next tested a single-factor solution. The single-factor solution with all items demonstrated poor fit to the data, $\chi^2(27) = 106.34$, $p < .001$, $TLI = .70$, $RMSEA = .11$. Therefore, we removed the reverse-coded items and tested a single-factor model with the five remaining items, which demonstrated great fit, $\chi^2(5) = 3.19$, $p = .67$, $TLI = 1.02$, $RMSEA = .00$, and was a significant improvement compared to the two-factor solution with all items, $\Delta\chi^2(14) = 33.59$, $p = .002$, and to the one-factor solution with all items, $\Delta\chi^2(22) = 103.16$, $p < .001$. Thus, we chose the single-factor model with five items as the final model for our analyses. See Supplemental Materials for pattern- or factor-matrices of all solutions, and a full list of items.

The final measure included five items specific to exchange norms for fulfilling a partner's sexual needs: "When a person receives sexual pleasure from a partner, he or she ought to repay that person right away"; "It's best to make sure things are always kept 'even' between two people in a sexual relationship"; "I would do a special sexual favor for my partner only if my partner did a special sexual favor for me"; "In my relationship, I always know whether I have given more sexually to my partner or received more"; and "I keep track of whether my partner 'owes' me sexually (whether I have given to them more than I have received)." Participants rated all items on a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree"; $\alpha = .74$).

Attachment

Attachment was measured with the Experiences in Close Relationships Short-Form scale (Wei, Russell, Mallinckrodt, & Vogel, 2007). Six items assessed attachment anxiety (e.g., "I need a lot of reassurance that I am loved by my partner"; $\alpha = .71$), and six items assessed attachment avoidance (e.g., "I am nervous when my partner gets too close to me"; $\alpha = .84$). All questions were rated on a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree").

Sexual Communion

Sexual communal norms were measured with six items (e.g., "How far would you be willing to go to meet your partner's sexual needs?" $\alpha = .75$; Muise et al., 2013), rated on a 5-point scale (0 = "not at all" to 4 = "extremely").

Relationship Satisfaction

Relationship satisfaction was assessed with the Satisfaction subscale of the Perceived Relationship Quality Components (PRQC) Inventory (e.g., "How satisfied are you with your relationship?" $\alpha = .95$; Fletcher, Simpson, & Thomas, 2000). Participants rated three items on a 7-point scale (1 = "not at all" to 7 = "extremely").

Table 3 Associations between approaches to sexual need fulfillment and outcomes in Study 1

	Relationship Satisfaction		Sexual Satisfaction		Commitment	
	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>
Sexual exchange	-.08 (.06)	-1.36	-.02 (.07)	-.34	-.12 (.05)	-2.23*
Sexual communion	.54 (.10)	5.35***	.77 (.12)	6.31***	.24 (.10)	2.47*

* $p < .05$, *** $p < .001$. Degrees of freedom were 245

Sexual Satisfaction

Sexual satisfaction was measured with the Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1998; $\alpha = .96$). Participants rated five bipolar items on a 7-point scale with verbal anchor points (e.g., My sex life is “very bad” to “very good”).

Commitment

Commitment was measured with the Commitment subscale of the PRQC (e.g., “How committed are you to your relationship?” $\alpha = .93$; Fletcher et al., 2000). Participants rated three items on a 7-point scale (1 = “not at all” to 7 = “extremely”).

Data Analysis

Data in Study 1 were analyzed in SPSS version 23.0. We explored initial associations between approaches to sexual need fulfillment (i.e., sexual communal and sexual exchange norms), attachment, and relationship and sexual outcomes. To test these links, we conducted linear regression analyses where both sexual communal and sexual exchange norms were entered simultaneously as predictors and centered around the grand mean of the sample. We report associations that were tested but not part of our key questions of interest (i.e., between attachment anxiety and sexual exchange/communal norms, and between attachment anxiety and avoidance and sexual and relationship outcomes) in Supplemental Materials. We tested for gender differences in the main effects of endorsing sexual communal norms and sexual exchange norms on outcomes, and between attachment avoidance and sexual communal or exchange norms across studies, but the effects were largely consistent across gender.¹ We also

¹ In Study 1, the association between endorsing sexual communal norms and commitment was significantly moderated by gender ($b = .52$, $SE = .21$, $t[238] = 2.41$, $p = .02$). For women, endorsing more sexual communal norms was not associated with commitment ($b = .20$, $SE = .12$, $t[238] = 1.60$, $p = .11$). However, when men endorsed more sexual communal norms, they reported significantly higher commitment ($b = .71$, $SE = .18$, $t[238] = 4.07$, $p < .001$). In Study 2, the association between actor’s sexual communal norms and sexual satisfaction was significantly moderated by gender ($b = -.79$, $SE = .24$, $t[132.27] = 3.24$, $p = .002$, 95% CI [-1.28, .31]). Women who endorsed more sexual communal norms reported significantly higher sexual satisfaction ($b = .85$, $SE = .16$, $t[146.51] = 5.46$, $p < .001$, 95% CI [.54, 1.15]). However, for men, the association between endorsing sexual communal norms and sexual satisfaction was not significant ($b = .05$, $SE = .18$, $t[150.56] = .31$, $p = .76$, 95% CI [-.29, .40]).

discuss whether associations between endorsing sexual communal and exchange norms and outcomes differed by attachment avoidance by testing moderations. Data and syntax for all analyses are available on the Open Science Framework: https://osf.io/wntxp/?view_only=c1285a12a89e4720b7a5208f8a29386e.

Results

First, we tested whether endorsing sexual exchange and communal norms was associated with sexual satisfaction and relationship quality (see Table 3). Consistent with the past research, people who endorsed sexual communal norms reported higher relationship satisfaction, sexual satisfaction, and commitment. After accounting for sexual communion, people who endorsed sexual exchange norms reported lower commitment, but sexual exchange was not significantly associated with sexual or relationship satisfaction.

Next, we tested whether attachment avoidance was associated with endorsing sexual exchange norms and sexual communal norms. Our findings demonstrated that people who were higher (vs. lower) in attachment avoidance were more likely to endorse sexual exchange norms ($b = .19$, $SE = .08$, $t[245] = 2.38$, $p = .02$) and less likely to endorse sexual communal norms in their relationship ($b = -.22$, $SE = .04$, $t[245] = -5.24$, $p < .001$). Notably, the associations between endorsing sexual communal norms and sexual exchange norms with satisfaction and commitment were not moderated by attachment avoidance, suggesting that avoidantly attached people may benefit when they endorse sexual communal norms, but they may also incur costs to their feelings of commitment when they endorse sexual exchange norms.

Discussion

Results from Study 1 demonstrated that being exchange-oriented in the sexual domain was associated with lower commitment, whereas being sexually communal was associated with greater relationship satisfaction, sexual satisfaction, and commitment. In addition, people who were higher (vs. lower) in attachment avoidance reported being more exchange-oriented and less communally oriented in their sexual relationships, findings that were consistent with previous research on

attachment and general approaches to need fulfillment in relationships (e.g., Bartz & Lydon, 2008). These findings suggest that even in sexual interactions, avoidantly attached people tend to refrain from opportunities for increased intimacy with their partner by focusing on whether benefits are equally exchanged between partners (i.e., one person in the relationship is not over- or under-benefitting compared to the other), rather than being responsive to a partner's sexual needs.

Study 2

In Study 2, a cross-sectional study of romantic couples, we extended findings from Study 1 by testing dyadic associations. Specifically, we assessed whether people higher in attachment avoidance, and those with partners higher in attachment avoidance, would be more likely to endorse sexual exchange norms in relationships, and less likely to endorse sexual communal norms, compared to people and partners who were lower in attachment avoidance. We also tested how endorsing sexual communal and exchange norms is associated with both partners' sexual and relationship quality.

Method

Participants

Participants were recruited through online postings (Canadian university campus, Kijiji, Craigslist) and classroom visits at a Canadian university and in the Greater Toronto Area as part of a larger study on sexual relationships (Impett, Muise, & Harasymchuk, 2019). Eligible couples were sexually active, in a romantic relationship, older than 18 years of age, saw their partner several times a week, and both partners agreed to participate. We aimed to recruit at least 100 couples based on recommendations for achieving sufficient power with dyadic data (Kenny, Kashy, & Cook, 2006). The final sample consisted of 101 couples ($N=94$ men, 102 women, 1 "other," 5 missing) ranging in age from 18 to 53 years ($M=25.97$, $SD=6.98$). Post hoc power analyses using an online application for calculating power in Actor-Partner Interdependence Models (APIM; Kenny & Ackerman, 2019) indicated that with 101 couples, we had 99% power to detect a medium actor effect and 87% power to detect a small partner effect. The average relationship length was 4.53 years ($SD=3.82$). Participants were ethnically diverse: White (53%), European (14.4%), Black (10.4%), Chinese (7.9%), South Asian (4.5%), Filipino (3.5%), Latin American (3.5%), identified as "Other" (3.5%), Aboriginal (2.5%), South East Asian (2.5%), Arab/West Asian (1.5%), Japanese (1%), Korean (1%), and chose not to answer (2.5%). Participants were heterosexual (83.7%), bisexual (5%), gay or lesbian (2.5%), identified as "other" (2%), uncertain or questioning (1.5%), queer (1%), or chose not to specify (1%). Couples

were seriously dating one person but not living together (47%), cohabiting (28.7%), married (16.8%), did not respond (3%), engaged (2.5%), casually dating one person (1.5%), or were seriously dating more than one person (.5%).

Procedure

Couples were pre-screened for eligibility via e-mail. Once eligibility and consent were confirmed, each partner completed a 30-min online background survey. Participants were asked to complete the surveys on the same day as their partner and were also asked not to discuss their responses until they completed the study. We compensated each partner up to \$40 CAD (approximately \$28 USD) for their participation in the study.

Measures

In addition to the key variables, both partners reported their age, ethnicity, sexual orientation, relationship status, and relationship duration (see Table 4 for correlations, means, and SDs). The following measures were assessed with the same items and scales as in Study 1: attachment (attachment anxiety: $\alpha=.82$, attachment avoidance: $\alpha=.79$), sexual communion ($\alpha=.69$), and sexual satisfaction ($\alpha=.94$; the word "very" preceded qualifiers in Study 2). Sexual exchange norms were also measured with the same items as Study 1 (Hughes & Snell, 1990; $\alpha=.77$), but in this study, the items were rated on a 5-point scale (1 = "not at all characteristic of me" to 5 = "very characteristic of me").

Relationship Satisfaction

Relationship satisfaction was assessed with items from the Satisfaction Level subscale of the Investment Model Scale (Rusbult, Martz, & Agnew, 1998; $\alpha=.94$). Participants rated five items on a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree").

Commitment

Commitment was measured with the Commitment Level subscale of the Investment Model Scale (Rusbult et al., 1998; $\alpha=.86$). Participants rated seven items on a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree").

Data Analysis

Data were analyzed using multi-level modeling in SPSS 23.0 guided by the APIM (Kenny et al., 2006). We attempted to replicate the findings from Study 1 (see data analysis details in Study 1 for additional information, and Supplemental Materials for the results) and extend the results by also testing

Table 4 Correlations among person-level variables (Study 2)

	1	2	3	4	5	6	7	8	9
1. Age	.86***	.64***	.19*	-.01	-.05	-.04	-.25***	-.26***	-.14
2. Relationship duration		–	.20**	.02	-.12	-.15*	-.34***	-.30***	-.12
3. Avoidance			.32**	.29***	.28***	-.31***	-.55***	-.41***	-.59***
4. Anxiety				.14	.10	-.17*	-.35***	-.14*	-.20**
5. Sexual exchange					.15	-.12	-.14	-.07	-.23**
6. Sexual communion						.18	.35***	.34***	.40***
7. Relationship satisfaction							.57***	.56***	.59***
8. Sexual satisfaction								.53***	.34***
9. Commitment									.49***
Mean	25.97	4.53	2.12	3.33	2.20	2.89	5.86	5.97	6.19
Standard deviation	6.98	3.82	1.02	1.36	.94	.66	1.19	1.06	1.04

*** $p < .001$, ** $p < .01$, * $p < .05$. Correlations between partners are bolded and on the diagonal

Table 5 Associations between actor and partner approaches to sexual need fulfillment and outcomes (Study 2)

	Relationship satisfaction		Sexual satisfaction		Commitment	
	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>
Actor sexual communion	.55 (.12)	4.75***	.53 (.11)	4.82***	.52 (.10)	5.10***
Partner sexual communion	.45 (.12)	3.88***	.26 (.11)	2.37*	.28 (.10)	2.75**
Actor sexual exchange	-.07 (.08)	-.84	-.00 (.08)	-.05	-.18 (.07)	-2.43*
Partner sexual exchange	-.07 (.08)	-.84	.04 (.08)	.57	-.09 (.07)	-1.21

* $p < .05$, ** $p < .01$, *** $p < .001$. Degrees of freedom ranged from 155.46 to 168.53

partner effects. We tested two-level indistinguishable models where persons were nested within dyads (Kenny et al., 2006) to account for non-independence in the data. All predictors were centered around the grand mean. As in Study 1, attachment anxiety and avoidance were entered simultaneously as predictors, as were sexual communion and exchange. Separate models were tested for each outcome. We also report whether associations between endorsing sexual exchange and communal norms and sexual and relationship quality were moderated by attachment avoidance (controlling for moderations by attachment anxiety). The coefficients reported are unstandardized betas (*b*) and interpreted as the change in the outcome for every one-unit increase in the predictor beyond the sample mean.

Results

First, we tested whether sexual communal norms and sexual exchange norms were associated with sexual satisfaction and relationship quality (see Table 5). Consistent with the past research, people who endorsed more sexual communal norms, and those with partners who endorsed more sexual communal norms reported higher relationship satisfaction, sexual satisfaction, and commitment. After accounting for sexual communion, and as in Study 1, people who endorsed more sexual exchange norms reported lower commitment, but there were

no significant effects of a partner's endorsement of sexual exchange norms on relationship satisfaction, sexual satisfaction or commitment.

Next, we tested whether attachment avoidance was associated with the endorsement of sexual exchange norms and sexual communal norms. Our findings demonstrated that as in Study 1, people who were higher (vs. lower) in attachment avoidance were more likely to endorse sexual exchange norms ($b = .23$, $SE = .07$, $t[180.46] = 3.15$, $p = .002$, 95% CI [.09, .37]) and less likely to endorse sexual communal norms in their relationship ($b = -.14$, $SE = .05$, $t[178.50] = -2.74$, $p = .01$, 95% CI [-.24, -.04]). Turning to the partner effects, when partners were higher (compared to lower) in attachment avoidance, people were less likely to endorse sexual communal norms ($b = -.12$, $SE = .05$, $t[178.43] = -2.38$, $p = .02$, 95% CI [-.22, -.02]), but a partner's attachment avoidance was not associated with the endorsement of sexual exchange norms ($b = .03$, $SE = .07$, $t[180.45] = .39$, $p = .70$, 95% CI [-.11, .17]). Consistent with the past research, actor's and partner's attachment avoidance were both associated with lower relationship satisfaction, sexual satisfaction, and commitment (see Supplemental Materials for details).

Given that people higher in attachment avoidance tend to endorse more sexual exchange norms, we tested whether they might benefit more from this approach to sexual need fulfillment. A person's own attachment avoidance did not moderate

any of the associations between sexual exchange and sexual and relationship quality, but these associations did differ by a partner's attachment avoidance. Partner attachment avoidance moderated the association between sexual exchange and relationship satisfaction ($b = .24$, $SE = .09$, $t[145.25] = 2.73$, $p = .01$, 95% CI [.07, .42]) and sexual satisfaction ($b = .33$, $SE = .09$, $t[120.83] = 3.63$, $p < .001$, 95% CI [.15, .51]). Simple effects revealed that for people with partners who were less avoidantly attached, endorsing sexual exchange norms was associated with significantly lower relationship satisfaction ($b = -.26$, $SE = .11$, $t[155.54] = -2.34$, $p = .02$, 95% CI [-.48, -.04]) and sexual satisfaction ($b = -.30$, $SE = .11$, $t[132.35] = -2.70$, $p = .01$, 95% CI [-.52, -.08]). However, when partners were highly avoidantly attached, endorsing sexual exchange norms was not associated with relationship satisfaction ($b = .24$, $SE = .13$, $t[153.25] = 1.75$, $p = .08$, 95% CI [-.03, .50]), and significantly higher sexual satisfaction ($b = .37$, $SE = .13$, $t[129.25] = 2.76$, $p = .01$, 95% CI [.10, .64]).

Discussion

Consistent with the findings from Study 1, results from Study 2 demonstrated that people who were high in attachment avoidance reported being more exchange-oriented and less communally oriented in their sexual relationships. In addition, as in Study 1, being exchange-oriented was associated with lower commitment, whereas being sexually communal (or having a partner who was sexually communal) was associated with greater relationship and sexual quality. Finally, when a partner was low in attachment avoidance, endorsing sexual exchange norms was linked to lower satisfaction, but this was not the case when a partner was high in attachment avoidance. Endorsing more sexual exchange norms was also linked to higher sexual satisfaction for people whose partners were high in attachment avoidance. Therefore, although endorsing sexual exchange norms tended to be negatively associated with sexual and relationship quality, exchanging sexual favors in the bedroom may have some positive implications for the sex lives of those with avoidantly attached partners. In other words, endorsing sexual exchange norms may not be costly for everyone.

Study 3

In Study 3, a three-part study consisting of baseline, daily, and follow-up data, we sought to replicate and extend findings from Studies 1 and 2 by testing whether people higher in attachment avoidance would be more likely to endorse sexual exchange norms and less likely to endorse sexual communal norms in their daily lives. We also tested associations between daily sexual exchange and communal norms and sexual and relationship outcomes. In this study, we assessed communal and exchange norms for specific sexual experiences in daily life.

This allowed us to repeatedly sample people's reports of their sexual communal and exchange norms and have them report on these norms as close in time to when sex occurred, reducing retrospective bias. In this study, we also assessed people's feelings about specific sexual experiences by asking about the positive (i.e., feeling connected, perceiving a partner as responsive) and negative (i.e., feeling detached) aspects of the sexual encounter.

In Study 3, we also assessed whether endorsing sexual exchange or communal norms was associated with sexual and relationship quality over time. Specifically, we tested whether attachment avoidance was associated with sexual exchange and sexual communal norms over the course of the diary, and whether endorsing more sexual exchange norms and fewer sexual communal norms subsequently predicted avoidantly attached people's relationship and sexual well-being over time (i.e., 3 months later). This study extends the previous studies in two key ways: by providing a more precise measure of sexual exchange and sexual communion at the daily level (i.e., we assessed the endorsement of communal and exchange norms for specific sexual encounters in daily life) and by testing whether approaches to sexual need fulfillment in relationships mediated the association between attachment avoidance and sexual and relationship quality over time.

Method

Participants

Participants were recruited through online (e.g., Reddit, Kijiji, Facebook, Craigslist) and physical (e.g., Canadian university campuses, public transportation centers) advertisements in Canada and the U.S. (Raposo, Rosen, & Muise, 2020). Eligible couples were currently living together or seeing each other at least five out of 7 days per week, sexually active, 18 years of age or older, residing in Canada or the U.S., able to read and understand English, and had daily access to a computer with internet. Both partners had to agree to participate. One couple was excluded because they only completed the baseline survey of the study. Our final sample consisted of 121 couples ($N = 115$ men, 124 women, 2 "other," 1 missing). Post hoc power analyses using an online application for calculating power curves for multi-level studies (Kleiman, 2019) indicated that with 242 participants and 4488 days, we had 99% power to detect a small effect. Participants' age ranged from 20 to 78 years ($M = 32.63$, $SD = 10.19$). Participants were White (65.3%), East Asian (8.3%), South Asian (7.4%), bi- or multi-ethnic/racial (5.8%), Black (4.5%), Latin American (4.1%), "Other" (4.1%), or missing (.4%). People identified as straight/heterosexual (81.4%), bisexual (9.1%), asexual (2.9%), lesbian (2.5%), pansexual (1.7%), gay (.8%), queer (.8%), or other (.8%). Couples were married (46.7%), living together (not common-law or married; 29.3%), common-law (13.6%), engaged (7.9%), dating (1.2%),

Table 6 Correlations among person-level variables (Study 3)

	1	2	3	4	5	6	7	8	9
1. Age	.93***	.76***	.09	-.01	.00	.06	.04	.12	.03
2. Relationship duration		–	.04	-.03	.01	.01	.04	.06	.00
3. Avoidance			.37***	.42***	.37***	-.27***	-.42***	-.24***	-.40***
4. Anxiety				.21*	.29***	-.09	-.31***	-.20**	-.25***
5. Sexual exchange					.48***	-.23***	-.25***	-.20**	-.34***
6. Sexual communion						.21*	.36***	.23***	.43***
7. Relationship satisfaction							.62***	.61***	.77***
8. Sexual satisfaction								.60***	.42***
9. Commitment									.63***

*** $p < .001$, ** $p < .01$, * $p < .05$. Correlations between partners are bolded and on the diagonal. Baseline reports of specific variables (age, relationship duration, attachment avoidance, attachment anxiety) were included in correlations. All other variables were at the daily level. Daily variables were aggregates across the diary

or other (.4%). The average relationship length was 8.50 years ($SD = 8.41$).

Procedure

Couples were pre-screened for eligibility via e-mail and telephone. Once eligibility and consent were confirmed, each partner completed a 60-min online baseline survey, followed by 10- to 15-min online surveys for 21 consecutive days, and a 20-min online follow-up survey 3 months later. We instructed participants to complete their surveys before bed and on the same day as their partner. We compensated each partner up to \$60 CAD (approximately \$48 USD) for their participation.

Measures

In addition to the key variables, both partners reported their age and relationship duration (a couple-level variable calculated by taking the mean of each partner's report; see Table 6 for correlations). For the daily (within-person) measures, we used brief versions with only one to three items to increase efficiency and minimize participant attrition (Bolger, Davis, & Rafaeli, 2003).

Person-Level Measures

The following measures were assessed with the same items and scales as in Study 1 and 2: attachment (attachment anxiety: $\alpha = .71$, $M = 3.40$, $SD = 1.12$; attachment avoidance: $\alpha = .79$, $M = 2.03$, $SD = .90$), sexual exchange (5-point scale; $\alpha = .73$, $M = 2.05$, $SD = .84$), sexual communion ($\alpha = .62$, $M = 3.00$, $SD = .56$), relationship satisfaction (same as Study 1 at baseline: $\alpha = .95$, $M = 6.14$, $SD = .92$; and follow-up: $\alpha = .94$, $M = 5.97$, $SD = 1.16$), sexual satisfaction (baseline: $\alpha = .96$, $M = 6.01$, $SD = 1.41$; and follow-up: $\alpha = .97$, $M = 5.83$, $SD = 1.50$). Commitment was also measured with two items from the measures

used in Study 1 at baseline ($\alpha = .83$, $M = 6.69$, $SD = .59$), and one item at follow-up ($M = 6.58$, $SD = .85$).

Daily Level Measures

Sexual exchange Sexual exchange norms were measured with two items adapted to be about that day (e.g., "My goal during sex was to 'keep things even' between me and my partner") rated on a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree;" $M = 1.62$, $SD = 1.22$; $r = .55$, $p < .001$).

Sexual communion Sexual communal norms were measured with three items adapted to be about the sexual experience (e.g., "During sex, I was focused on meeting my partner's needs"; Muise et al., 2013) rated on a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree"; $M = 5.71$, $SD = 1.24$). Within-person reliability of the items (indicated by R_c ; Bolger & Laurenceau, 2013) was .76.

Relationship satisfaction Relationship satisfaction was assessed with one item from the Relationship Satisfaction subscale of the PRQC adapted to be about that day (i.e., "How satisfied were you with your relationship?"; Fletcher et al., 2000) on a 7-point scale (1 = "not at all" to 7 = "extremely"; $M = 6.04$, $SD = 1.25$).

Sexual satisfaction Sexual satisfaction was measured with the GMSEX adapted to be about that day (e.g., "Today, my sex life was bad to good"; Lawrence & Byers, 1998). Participants rated five bipolar items on a 7-point scale with verbal anchor points ($M = 5.55$, $SD = 1.68$; $R_c = .96$).

Commitment Commitment was assessed with one item from the Commitment subscale of the PRQC adapted to be about that day (i.e., "How committed were you with your relationship?"; Fletcher et al., 2000) on a 7-point scale (1 = "not at all" to 7 = "extremely;" $M = 6.46$, $SD = 1.00$).

Positive and negative sexual experiences Positive and negative sexual experiences were measured with items adapted to be about their sexual experience that day (Birnbbaum et al., 2006;

see also Impett et al., 2019). Two items assessed positive sexual experiences (e.g., “My partner was responsive to my needs”; $M = 6.38$, $SD = .93$; $r = .71$, $p < .001$), and one item assessed negative sexual experiences (i.e., “I felt detached”; $M = 1.81$, $SD = 1.66$). Participants rated the items on a 7-point scale (1 = “strongly disagree” to 7 = “strongly agree”).

Data Analysis

Data in Study 3 were analyzed using multi-level modeling in SPSS version 23.0, guided by the APIM (Kenny et al., 2006). We attempted to replicate the findings from Studies 1 and 2 (see data analysis details in Studies 1 and 2 for additional information, and Supplemental Materials for the results). To assess daily fluctuations in the endorsement of sexual communal and exchange norms, we tested two-level indistinguishable cross-models with random intercepts where persons were nested within days, and persons and days were crossed to account for the fact that both partners completed the daily surveys on the same days (Kenny et al., 2006). To avoid confounding within- and between-person effects, we partitioned the Level-1 predictors (e.g., actor and partner attachment avoidance and attachment anxiety) into their within- and between-variance components, which were person-mean centered and aggregated, respectively (Raudenbush, Bryk, Cheong, & Congdon, 2004). The coefficients reported are unstandardized betas (b). Coefficients were interpreted as the change in the dependent variable for every one-unit deviation from the person’s own mean. We also tested whether attachment avoidance (controlling for attachment anxiety) moderated associations between daily sexual exchange and sexual and relationship outcomes.

Given our interest in whether approaches to sexual need fulfillment might account for the links between attachment and sexual and relationship well-being, we conducted tests of mediation (Zhang, Zyphur, & Preacher, 2009) using the Monte Carlo Method of Assessing Mediation with 20,000 resamples and 95% confidence intervals (MacKinnon, Lockwood, & Williams, 2004). By testing mediation models, we were able to assess whether there were significant indirect effects of attachment avoidance on relationship and sexual well-being through approaches to sexual need fulfillment.

Results

Replication of Cross-Sectional Associations from Studies 1 and 2

As in Studies 1 and 2, the associations from the baseline data showed that people who endorsed sexual communal norms reported higher relationship satisfaction, sexual satisfaction, and commitment, whereas people who endorsed sexual

exchange norms reported lower commitment. In this study, endorsing sexual exchange norms was also associated with lower sexual satisfaction. As in the previous studies, higher (vs. lower) levels of attachment avoidance were also associated with being more likely to endorse sexual exchange norms and less likely to report sexual communal norms (see Supplemental Materials for details).

Sexual Exchange and Communal Norms in Daily Life

In this study, our key interest was in testing how endorsing communal and exchange norms during sex was associated with daily sexual and relationship quality (see Table 7). Beginning with the within-person effects, we tested if endorsing higher sexual communal and sexual exchange norms during sex than people typically did was associated with sexual and relationship quality. On days when people reported more sexual communal norms during sex than they did on average, they reported that the sexual experience was more positive (i.e., they felt more connected to their partner and felt that their partner was more responsive during sex) and less negative (i.e., they felt less detached), as well as greater sexual satisfaction and commitment, although endorsing sexual communal norms in daily life was not significantly associated with relationship satisfaction. In addition, people whose partners reported more sexual communal norms also reported having more positive sexual experiences. However, after accounting for daily sexual communal norms, on days when people or their partners reported endorsing more sexual exchange norms, they reported no significant differences in their daily relationship satisfaction, sexual satisfaction, commitment, or positive and negative sexual experiences.

Regarding the between-person effects, we next tested how engaging in sex more for communal or exchange norms over the course of the diary study (i.e., aggregated reports of sexual exchange and sexual communal norms over the 21-day diary study) was associated with sexual and relationship quality (see Table 7). People who reported endorsing more sexual communal norms over the course of the diary study reported having more positive sexual experiences, as well as greater relationship satisfaction, sexual satisfaction, and commitment. In addition, people whose partners reported endorsing more sexual communal norms over the course of the diary study reported more positive and less negative sexual experiences, as well as greater relationship satisfaction, sexual satisfaction, and commitment. Accounting for sexual communal norms, when people endorsed more sexual exchange norms over the course of the diary study, they reported more negative sexual experiences. People whose partners reported endorsing more sexual exchange norms over the course of the diary study also reported more negative sexual experiences, as well as lower relationship satisfaction, sexual satisfaction, and commitment.

Table 7 Associations between actor and partner approaches to sexual need fulfillment and daily outcomes (Study 3)

	Relationship satisfac- tion		Sexual satisfaction		Commitment		Positive sex. experi- ences		Negative sex. experi- ences		
	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	
<i>Within-person effects (group-mean centered)</i>											
Actor sexual communion	.04 (.02)	1.81	.06 (.03)	2.42*	.07 (.02)	3.47**	.10 (.03)	3.93***	-.11 (.05)	-2.46*	
Partner sexual communion	.02 (.02)	1.02	.03 (.03)	1.10	-.00 (.02)	-.02	.08 (.03)	3.04**	-.04 (.05)	-.96	
Actor sexual exchange	-.03 (.03)	-.89	.06 (.03)	1.75	.00 (.03)	.11	.01 (.03)	.41	.11 (.06)	1.74	
Partner sexual exchange	-.06 (.03)	-1.82	-.02 (.03)	-.45	-.03 (.03)	-1.00	-.03 (.03)	-.82	.04 (.06)	.71	
<i>Between-person effects (aggregate)</i>											
Actor sexual communion	.19 (.04)	4.39***	.21 (.08)	2.65**	.20 (.04)	4.59***	.21 (.05)	4.16***	-.13 (.09)	-1.53	
Partner sexual communion	.09 (.04)	2.07*	.20 (.08)	2.58*	.10 (.04)	2.32*	.16 (.05)	3.20**	-.23 (.09)	-2.71**	
Actor sexual exchange	-.03 (.04)	-.81	-.06 (.07)	-.85	-.06 (.04)	-1.51	-.05 (.05)	-1.00	.38 (.08)	4.76***	
Partner sexual exchange	-.10 (.04)	-2.48*	-.15 (.07)	-2.11*	-.08 (.04)	-1.95 [†]	-.09 (.05)	-1.91	.24 (.08)	3.01**	

[†] $p = .053$, * $p < .05$, ** $p < .01$, *** $p < .001$. Sex. = Sexual

Attachment Avoidance and Sexual Exchange and Communal Motivation

Next, we tested whether attachment avoidance was associated with endorsing sexual exchange or communal norms in daily life. On days when people engaged in sex, our findings demonstrated that people higher in attachment avoidance reported being more likely to endorse sexual exchange norms ($b = .30$, $SE = .09$, $t[207.51] = 3.57$, $p < .001$, 95% CI [.14, .47]) and less likely to endorse sexual communal norms ($b = -.27$, $SE = .08$, $t[208.65] = -3.28$, $p = .001$, 95% CI [-.43, -.11]), compared to people lower in attachment avoidance. People with avoidantly attached partners also reported being more likely to endorse sexual exchange norms ($b = .36$, $SE = .09$, $t[208.19] = 4.21$, $p < .001$, 95% CI [.19, .53]) and less likely to endorse sexual communal norms ($b = -.17$, $SE = .08$, $t[210.17] = -2.04$, $p = .04$, 95% CI [-.33, -.01]) in daily life.

As in Studies 1 and 2, we were interested in whether people high in attachment avoidance might benefit from endorsing sexual exchange norms, whereas less avoidantly attached people would experience costs from endorsing sexual exchange norms. We found that attachment avoidance moderated two of the associations between sexual communal/exchange norms and sexual and relationship quality. Among the within-person (daily) effects, attachment avoidance significantly moderated the association between a partner's daily endorsement of sexual communal norms and daily positive sexual experiences ($b = -.07$, $SE = .03$, $t[723.86] = -2.16$, $p = .03$, 95% CI [-.13, -.01]). Simple effects revealed that when people were less avoidantly attached, having a partner who endorsed more daily sexual communal norms was associated with significantly more daily positive sexual experiences ($b = .14$, $SE = .04$, $t[726.57] = 3.64$, $p < .001$, 95% CI [.07, .22]). However, when people were more avoidantly attached, having a partner who endorsed more sexual communal norms was not associated with daily positive sexual

experiences ($b = .03$, $SE = .04$, $t[719.56] = .76$, $p = .45$, 95% CI [-.04, .10]).

Partners' attachment avoidance also significantly moderated the associations between a partner's daily endorsement of sexual exchange norms and daily sexual satisfaction ($b = .10$, $SE = .05$, $t[704.14] = 2.14$, $p = .03$, 95% CI [.01, .19]) and commitment ($b = -.09$, $SE = .04$, $t[691.46] = -2.66$, $p = .01$, 95% CI [-.16, -.02]). Simple effects revealed that for those with partners low in attachment avoidance, having a partner who endorsed more daily sexual exchange norms was associated with significantly lower daily sexual satisfaction ($b = -.12$, $SE = .06$, $t[705.45] = -1.94$, $p = .05$, 95% CI [-.23, .00]), but it was not associated with commitment ($b = .06$, $SE = .05$, $t[690.81] = 1.34$, $p = .18$, 95% CI [-.03, .15]). However, for those with partners high in attachment avoidance, having a partner who endorsed more sexual exchange norms was not associated with daily sexual satisfaction ($b = .06$, $SE = .05$, $t[706.11] = 1.22$, $p = .22$, 95% CI [-.04, .16]), but it was associated with significantly lower commitment ($b = -.11$, $SE = .04$, $t[697.59] = -2.78$, $p = .01$, 95% CI [-.18, -.03]).

Among the between-person (aggregated) effects, attachment avoidance significantly moderated the association between a partner's endorsement of sexual exchange norms over the course of the diary study and daily negative sexual experiences ($b = .28$, $SE = .13$, $t[166.39] = 2.21$, $p = .03$, 95% CI [.03, .53]). When people were less avoidantly attached, having a partner who endorsed more sexual exchange norms over the course of the diary study was not associated with daily negative sexual experiences ($b = .06$, $SE = .17$, $t[181.88] = .37$, $p = .71$, 95% CI [-.27, .40]). However, when people were more avoidantly attached, having a partner who endorsed more sexual exchange norms over the course of the diary study was associated with more daily negative sexual experiences ($b = .57$, $SE = .15$, $t[184.94] = 3.88$, $p < .001$, 95% CI [.28, .85]).

Table 8 Associations between actor and partner approaches to sexual need fulfillment over the course of the diary study and relationship and sexual quality 3 months later (Study 3)

	Relationship satisfaction		Sexual satisfaction		Commitment	
	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>
Actor sexual communion	-.03 (.07)	-.38	.16 (.10)	1.64	.05 (.05)	1.12
Partner sexual communion	-.02 (.07)	-.36	.11 (.10)	1.15	.10 (.05)	2.17*
Actor sexual exchange	-.19 (.06)	-3.13**	-.03 (.09)	-.31	-.05 (.04)	-1.17
Partner sexual exchange	-.04 (.06)	-.61	.11 (.09)	1.16	.04 (.04)	.86

* $p < .05$, ** $p < .01$. Degrees of freedom ranged from 181.11 to 195.61. Analyses controlled for the outcome variable assessed at baseline

Longitudinal Associations

Finally, we tested whether endorsing sexual communal or exchange norms over the course of the diary study would be associated with relationship and sexual quality 3 months later, controlling for relationship and sexual quality at baseline (see Table 8). Overall, when people endorsed sexual communal norms more over the course of the diary study, this was not significantly associated with changes in relationship satisfaction, sexual satisfaction, or commitment 3 months later, but when their partners endorsed sexual communal norms more over the course of the diary study, people reported significantly higher commitment 3 months later. Accounting for sexual communion, when people endorsed sexual exchange norms more over the course of the diary study, they reported significantly lower relationship satisfaction 3 months later, but their partner's endorsement of sexual exchange norms over the course of the diary study did not influence relationship satisfaction, sexual satisfaction, or commitment 3 months later.

In this study, given that we found links between endorsing sexual exchange norms and relationship satisfaction over time, we tested whether endorsing sexual exchange norms more over the course of the diary study mediated the links between attachment avoidance and relationship satisfaction. Our results demonstrated that highly avoidantly attached people were more likely to endorse sexual exchange norms over the course of the 21-day diary study ($b = .30$, $SE = .09$, $t[213.02] = 3.53$, $p = .001$, 95% CI [.13, .47]) and less likely to endorse sexual communal norms ($b = -.28$, $SE = .08$, $t[224.10] = -3.32$, $p = .001$, 95% CI [-.45, -.11]), compared to people who were less avoidantly attached. Similarly, those with avoidantly attached partners were also more likely to endorse sexual exchange norms over the course of the study ($b = .36$, $SE = .09$, $t[212.88] = 4.18$, $p < .001$, 95% CI [.19, .52]) and less likely to endorse sexual communal norms over the course of the study ($b = -.17$, $SE = .08$, $t[224.05] = -2.04$, $p = .04$, 95% CI [-.34, -.01]). Although actor and partner attachment avoidance did not directly predict relationship satisfaction over time (see Supplemental Materials), when people higher in attachment avoidance, or those with more avoidantly attached partners, endorsed sexual exchange norms over the course of the diary study, in turn, they reported declines in their relationship satisfaction from baseline to the

3-month follow-up (own attachment avoidance: 95% CI [-.09, -.00]; partner attachment avoidance: 95% CI [-.11, -.00]). There were no other significant mediations.

Discussion

Results from Study 3 demonstrated that on days when people endorsed more communal norms during sex than they typically did, they reported greater daily sexual and relationship quality. People who reported more chronically endorsing sexual communal norms over the course of the diary (and people with partners who endorsed sexual communal norms more chronically) also reported greater sexual and relationship quality in daily life, and when partners endorsed more sexual communal norms, people were more committed to their relationships over time. Although daily fluctuations in the endorsement of sexual exchange norms were not associated with sexual and relationship quality, when people were more chronically exchange-oriented during sex, they reported more negative daily sexual experiences, as well as declines in their relationship satisfaction 3 months later. Having an exchange-oriented partner over the course of the diary was also associated with more negative sexual experiences and lower relationship satisfaction, sexual satisfaction, and commitment in daily life.

Consistent with our key predictions and Studies 1 and 2, people higher in attachment avoidance were more likely to endorse sexual exchange norms and less likely to endorse sexual communal norms in daily life. People with avoidantly attached partners were also more likely to endorse sexual exchange norms and less likely to endorse sexual communal norms. If anything, moderations by attachment avoidance for the associations between the endorsement of sexual exchange and communal norms and sexual and relationship quality suggested that people higher in attachment avoidance (and those with partners higher in attachment avoidance) benefit less from their partner endorsing sexual communal norms and reported more daily negative sexual experiences and lower daily commitment in response to their partner's endorsement of exchange norms.

However, these findings were not consistent with the other studies, and the findings in this study suggest that avoidantly attached people did not benefit more from endorsing sexual

exchange norms than communal norms. Moreover, it is not clear how associations between sexual communal or exchange norms and satisfaction and commitment differ based on attachment avoidance. Finally, avoidantly attached people's endorsement of sexual exchange norms accounted for declines in relationship satisfaction 3 months later.

General Discussion

People high in attachment avoidance are uncomfortable with intimacy and value independence (Mikulincer & Shaver, 2003). The findings from the current set of studies suggest that being more exchange-oriented and less communally oriented in their sexual relationships may be one way in which avoidantly attached people keep distance from their partner in intimate situations. Consistent across all three studies, people high in attachment avoidance reported endorsing more sexual exchange norms (i.e., they were more likely to endorse tracking and trading sexual benefits to keep things even) and fewer sexual communal norms (i.e., they were less motivated to meet their partner's sexual needs). When assessing gender moderations to see if effects differed for men compared to women, we only found two significant associations and there was no consistent pattern, suggesting that the effects were largely consistent for men versus women. In addition, as in the past research (Muise & Impett, 2015; Muise et al., 2013), being sexually communal and having a communal partner were associated with higher quality sex lives and relationships. However, although the specific links between sexual exchange and sexual and relationship quality differed somewhat across studies, overall, tracking and trading sexual benefits in a relationship was associated with having more negative experiences and lower satisfaction and commitment. Endorsing sexual exchange norms in daily life also accounted for declines in avoidantly attached people's relationship satisfaction 3 months later.

An Attachment Perspective on Sexual Need Fulfillment

Research on sexual communal norms—being motivated to meet a partner's sexual needs—has demonstrated benefits for romantic couples (e.g., higher sexual desire, relationship satisfaction, and commitment; Muise & Impett, 2015; Muise et al., 2013). In line with past work, our findings demonstrated that endorsing sexual communal norms (or having a partner who endorses sexual communal norms) was associated with greater sexual satisfaction, relationship satisfaction, and commitment, and more positive and less negative sexual experiences. One reason why people who endorsed sexual communal norms report these benefits is because they are more likely to pursue sex to promote positive relationship outcomes, including higher intimacy and closeness

(Muise & Impett, 2016; Muise et al., 2013). As expected, our findings showed that avoidantly attached people were less likely to endorse sexual communal norms, which may be explained by their chronic discomfort with closeness and lack of responsiveness to their partners (Bartz & Lydon, 2008; Feeney & Collins, 2001). Avoidantly attached people tend to be less responsive, lack trust in others, and perceive their partners as being less responsive (e.g., Bartz & Lydon, 2006; Mikulincer, 1998; Mizrahi, Kanat-Maymon, & Birnbaum, 2018). Thus, endorsing sexual communal norms in a relationship may introduce an element of risk for avoidantly attached people. That is, avoidantly attached people may be less inclined to meet their partner's needs because they lack trust and have low expectations that a partner will be responsive to their needs.

Compared to research on sexual communal norms, past work on the role of sexual exchange norms on satisfaction has been mixed. On the one hand, feeling that a sexual relationship is equitable leads people to feel more satisfied with their relationships and sex lives (Hatfield et al., 1982), but feeling under- or over-benefitted in a sexual relationship is linked to sexual dissatisfaction, distress, and frustration (e.g., Hatfield et al., 1982; Sprecher, 1998, 2001). In line with the latter findings, we demonstrated that when people endorsed exchange norms in their sexual relationship (i.e., they track and trade sexual benefits with the goal of keeping things even), they did not report greater sexual satisfaction and, if anything, they feel less committed and have more negative sexual interactions. In fact, our findings suggest that people who more chronically endorse exchange norms in their sexual relationship report declines in relationship satisfaction over time. In the context of romantic attachment, avoidantly attached partners seek to exert control over sexual experiences to prevent them from becoming overly intimate (Birnbaum et al., 2006; Davis et al., 2004), and endorsing exchange norms has been theorized as one way those high in attachment avoidance establish boundaries when others are getting too close (Bartz & Lydon, 2006). Tracking and trading benefits may also enable avoidantly attached people to ensure sexual favors are evenly reciprocated, especially given their lack of trust and low perceived partner responsiveness (Mikulincer, 1998; Mizrahi et al., 2018). It is also possible that avoidantly attached people see sexual exchange as a way for them to keep shared intimacy and closeness at bay, despite negative consequences of endorsing sexual exchange norms for sexual and relationship quality.

Consistent with the “dance of distance” (i.e., partners of avoidantly attached people decrease their own motivations for sex and intimacy given their partner's motivation to distance themselves from intimacy; Gewirtz-Meydan & Finzi-Dottan, 2018; Middelberg, 2001), we found several novel associations between a partner's attachment avoidance and endorsement of sexual norms. Specifically, people with avoidantly attached partners were more likely to endorse sexual exchange norms

in daily life and over the course of the diary study. Although we did not find consistent partner effects in Studies 2 and 3, we found evidence that people were more likely to endorse sexual exchange norms when they have avoidantly attached partners (perhaps because avoidant partners may also be more sexual exchange-oriented). We also demonstrated the importance of considering both partners when exploring associations between attachment avoidance and sexual exchange norms.

In addition, some of the associations between the endorsement of sexual exchange norms and sexual and relationship quality were null or inconsistent, suggesting that there may be important moderators of the associations between the endorsement of sexual exchange norms and sexual and relationship quality. In the current set of studies, we were able to test whether the associations between sexual exchange and sexual and relationship quality differed based on attachment avoidance. Given that avoidantly attached people are more likely to endorse sexual exchange norms, it is possible that this approach might have benefits for them; however, the evidence was mixed across studies. In Study 1, attachment avoidance did not interact with sexual communal or sexual exchange norms to predict satisfaction or commitment. In Study 2, when partners were less avoidantly attached, endorsing sexual exchange norms was associated with lower relationship and sexual satisfaction, but when partners were more avoidantly attached, endorsing sexual exchange norms was associated with higher sexual satisfaction. In addition, when their partner endorsed sexual exchange norms, avoidantly attached people had more negative daily sexual experiences, and those with partners high in attachment avoidance reported lower daily commitment. In Study 3, when partners were less avoidantly attached, having a partner who endorsed more daily sexual exchange norms was associated with lower daily sexual satisfaction, but when partners were more avoidantly attached, having a partner who endorsed more daily sexual exchange norms was associated with higher daily sexual satisfaction. In addition, when their partner endorsed more sexual exchange norms over the course of the diary study, highly avoidantly attached people had more daily negative sexual experiences. Overall, however, attachment avoidance did not consistently moderate the associations between sexual exchange, satisfaction, and commitment. With one exception—the association between endorsing sexual exchange norms and greater sexual satisfaction in Study 2—endorsing sexual exchange norms was largely not beneficial for the sex lives and relationships of avoidantly attached people. These findings suggest that avoidantly attached people may actually reap benefits in their relationships and sex lives from being less exchange and more communally oriented in their sexual relationships (even though they tend to endorse exchange norms more and communal norms less).

To clarify these inconsistencies and to better understand the costs and benefits of sexual exchange norms in relationships, future research could consider the extent to which congruence

between partners in sexual exchange norms is associated with sexual and relationship well-being. A powerful test of whether matching in sexual exchange norms is better for avoidantly attached individuals' well-being than mismatching (and whether matching on high or low levels of sexual exchange norms is more beneficial) is to use response surface analysis (Humberg, Nestler, & Back, 2018; Schönbrodt, 2016), a recent statistical tool that requires a larger sample size than the current research includes. Although we generally found negative links between sexual exchange norms and well-being outcomes, it is possible that if avoidantly attached people and their partners both endorse sexual exchange norms to a greater extent, they would not experience the lower relationship or sexual satisfaction that is typical of endorsing exchange norms and might even report greater relationship and sexual quality. The above inconsistencies also suggest that there may be other important moderating factors of the associations between the endorsement of sexual exchange norms and sexual and relationship quality. Clark et al. (2010) theorized that low satisfaction and a lack of trust might be driving avoidantly attached people's adherence to general exchange norms in committed relationships, and our findings suggest that when partners are highly avoidantly attached, people may report greater sexual satisfaction than they typically experience when they are high in sexual exchange. Taken together, both past and current findings suggest that differences in relationship security (e.g., trust, commitment, satisfaction) may explain why highly avoidantly attached people (i.e., those who report lower trust and commitment) adhere more to, and sometimes even benefit from, endorsing sexual exchange norms compared to less avoidantly attached partners who instead endorse and benefit more from endorsing sexual communal norms.

Limitations, Implications, and Future Directions

The current study provided initial evidence that attachment avoidance underlies approaches to sexual need fulfillment. Despite the strengths of this work (e.g., including data collected from both partners over time in their relationship), there were limitations. First, although we provided evidence in Study 3 that endorsing sexual exchange norms over the course of the diary study was associated with lower sexual and relationship quality at the daily level and over time, our studies were correlational and cannot provide evidence for causality. The past work has shown that it is possible to enhance people's endorsement of sexual communal norms, at least temporarily, but this work has used hypothetical scenarios (Day et al., 2015). It is not yet clear if it is possible to enhance sexual communal norms for a more sustained period of time and whether this would have implications for couples' sexual and relationship satisfaction. Given the current and past research findings suggesting that a communal approach to a sexual relationship is associated with greater relationship and sexual satisfaction, even for those high

in attachment avoidance, future work could consider whether it is possible to enhance people's endorsement of sexual communal norms, and if doing so would be beneficial for both people low and high in attachment avoidance. Moreover, clinicians could consider whether partners are following communal or exchange norms in their relationship and if both partners are following the same norms. Being focused on tracking and trading benefits in relationships could limit intimacy between partners and clinicians might be able to facilitate a discussion of sexual norms in the relationship.

Relatedly, it is not clear whether sexual communal strength is a predictor of a happy relationship or if being in a happy relationship is a predictor of higher sexual communal strength. Sexual communal strength has typically been measured as a general relationship motivation that is fairly stable over time. However, some research has also demonstrated that sexual communal strength varies day to day (Muise, Bergeron, Impett, & Rosen, 2017, 2018). That is, researchers have assessed people's communal motivation for a specific sexual encounter and have shown that on days when people engage in sex for more communal reasons, they report higher relationship and sexual quality (Impett et al., 2019). Research has also shown that by encouraging people to think about their sex life from their partner's perspective, they make more communal sexual decisions in a hypothetical scenario (Day et al., 2015), and by orienting people to their partner's high sexual communal motivation, they feel more satisfied compared to a partner who is low in sexual communal strength or a control condition (Balzarini et al., in press). Taken together, although sexual communal strength is often assessed as a trait or relationship-specific motivation, there is some evidence that it varies, suggesting that it might be possible to increase a person's sexual communal motivation. Future experimental work in which sexual communal and exchange norms are manipulated could also help provide stronger evidence of the direction of our findings.

It is also possible that the effects of endorsing sexual exchange norms on sexual and relationship quality are dependent on whether partners feel that things are, in fact, even. For example, the act of tracking and trading could emphasize people's concerns about favors being imbalanced, and this may explain why endorsing sexual exchange norms was linked to poorer outcomes over time. However, if people are exchange-oriented and feel that the exchange of benefits is even (i.e., partners are not under- or over-benefitted), their sexual and relationship quality may not be negatively impacted. There may be some benefits to being mindful of maintaining equity in a relationship (e.g., when both partners receive benefits equally), but it seems that when people are specifically actively oriented to keeping things even, they can end up feeling less satisfied because this approach is often less partner-focused and is associated with lower intimacy and responsiveness, which are all aspects of a relationship that also tend to be associated with satisfaction. Future work could test whether associations between endorsing

sexual exchange norms and sexual and relationship quality differ based on partners' perceptions of whether exchanges are generally equitable in the relationship, or based on whether partners track and trade the exchange of benefits to ensure they receive something of equal value after they give or do something for their partner.

The current work also does not indicate why avoidantly attached people endorse more sexual exchange norms and fewer sexual communal norms. For example, endorsing sexual exchange norms may help avoidantly attached people to minimize intimacy in their sexual interactions (e.g., Birnbaum et al., 2006). That is, tracking and trading sexual favors may enable avoidantly attached people to capitalize on their highly valued independence (Mikulincer & Shaver, 2003) by limiting intimate sexual favors to situations of repayment, rather than understanding and aiming to be responsive to a partner's sexual needs as they arise. Although not always, endorsing exchange norms also tends to be characteristic of casual relationships (e.g., acquaintances or business partners; Bartz & Lydon, 2006, 2008; Clark & Mills, 1993; Clark, Mills, & Powell, 1986), which are avoidantly attached people's preferred sexual relationship (Birnbaum et al., 2006; Brennan & Shaver, 1995; Gentzler & Kerns, 2004; Schachner & Shaver, 2004). In the current research on committed couples, it is possible that highly avoidantly attached people are less comfortable and confident with endorsing sexual communal (rather than sexual exchange) norms as commitment increases over time (Clark et al., 2010). This may also explain why highly avoidantly attached people (i.e., those who have more positive attitudes about casual [vs. committed] sex and are uncomfortable with communal tendencies; Bartz & Lydon, 2008; Ridge & Feeney, 1998) endorsed more sexual exchange norms and ultimately experienced poorer relationship quality over time, whereas less avoidantly attached people endorsed more sexual communal norms (and fewer sexual exchange norms). Given their inclination toward short-term relationships, avoidantly attached people are less personally impacted when their partner is distressed (Monin, Schulz, Feeney, & Cook, 2010) and instead, they are typically more focused on their own needs (Birnbaum et al., 2006; Brennan & Shaver, 1995; Gentzler & Kerns, 2004; Schachner & Shaver, 2004). These findings suggest that avoidantly attached people may prefer to pursue sexual exchange norms as a way to make their relationship feel less intimate and committed. Future research could test possible mechanisms (e.g., independence, fear of intimacy) for why avoidantly attached people endorse sexual exchange norms.

Conclusion

The current study extends previous work on attachment and approaches to sexual need fulfillment by demonstrating that highly avoidantly attached people endorse more sexual exchange norms and fewer sexual communal norms. Our

findings contribute to a growing body of research on the associations between sexual communal and exchange norms and sexual and relationship quality (e.g., Hatfield et al., 1982; Muise & Impett, 2016), and to research on the sexual and relationship outcomes for avoidantly attached partners (e.g., Birnbaum et al., 2006). We also provided initial evidence that endorsing sexual exchange norms in relationships is one reason why avoidantly attached people experience lower relationship satisfaction over time. The findings advance theory in the study of romantic attachment and sexual need fulfillment by demonstrating that even though avoidantly attached people are less likely to endorse sexual exchange norms, endorsing sexual exchange (compared to sexual communal) norms in the bedroom does not benefit, and may actually detract from, sexual and relationship quality.

Funding This work has been supported by a Social Science and Humanities Research Council of Canada (SSHRC) graduate scholarship awarded to Stephanie Raposo and SSHRC Insight Grants awarded to Amy Muise and Emily A. Impett.

Compliance with Ethical Standard

Conflict of interest The authors declare no conflict of interest.

Ethical approval Ethics approval was granted by the Social Sciences and Humanities Research Ethics Board of the University of Toronto-Mississauga (September 7, 2012/ No. 28083), and the Human Participants Review Sub-Committee of York University (October 27, 2017/ No. e2017-3240 and May 11, 2018/ No. e2018-124).

Informed consent All participants in this research provided informed consent for publication.

References

- Balzarini, R. N., Muise, A., Dobson, K., Kohut, T., Raposo, S., & Campbell, L. (in press). The detriments of unmet sexual ideals and buffering effect of sexual responsiveness. *Journal of Personality and Social Psychology*.
- Bartz, J. A., & Lydon, J. E. (2004). Close relationships and the working self-concept: Implicit and explicit effects of priming attachment on agency and communion. *Personality and Social Psychology Bulletin*, 30, 1389–1401. <https://doi.org/10.1177/0146167204264245>.
- Bartz, J. A., & Lydon, J. E. (2006). Navigating the interdependence dilemma: Attachment goals and the use of communal norms with potential close others. *Journal of Personality and Social Psychology*, 91, 77–96. <https://doi.org/10.1037/0022-3514.91.1.77>.
- Bartz, J. A., & Lydon, J. E. (2008). Relationship-specific attachment, risk regulation, and communal norm adherence in close relationships. *Journal of Experimental Social Psychology*, 44, 655–663. <https://doi.org/10.1016/j.jesp.2007.04.003>.
- Birnbaum, G. E. (2015). On the convergence of sexual urges and emotional bonds. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 170–194). New York: Guilford Press.
- 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. <https://doi.org/10.1037/0022-3514.91.5.929>.
- Blanchflower, D. G., & Oswald, A. J. (2004). Money, sex, and happiness: An empirical study. *Scandinavian Journal of Economics*, 106, 393–415. <https://doi.org/10.1111/j.0347-0520.2004.00369.x>.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, 54, 579–616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>.
- Bolger, N., & Laurenceau, J. P. (2013). *Intensive longitudinal methods: An introduction to diary and experience sampling research*. New York: Guilford Press.
- Brassard, A., Shaver, P. R., & Lussier, Y. (2007). Attachment, sexual experience, and sexual pressure in romantic relationships: A dyadic approach. *Personal Relationships*, 14, 475–493. <https://doi.org/10.1111/j.1475-6811.2007.00166.x>.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.
- Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin*, 21, 267–283. <https://doi.org/10.1177/0146167295213008>.
- Butzer, B., & Campbell, L. (2008). Adult attachment, sexual satisfaction, and relationship satisfaction: A study of married couples. *Personal Relationships*, 15, 141–154. <https://doi.org/10.1111/j.1475-6811.2007.00189.x>.
- Byers, E. S., & Wang, A. (2004). Understanding sexuality in close relationships from the social exchange perspective. In J. H. Harvey, A. Wenzel, & S. Sprecher (Eds.), *Handbook of sexuality in close relationships* (pp. 203–234). Mahwah, NJ: Erlbaum.
- Campbell, L., Simpson, J. A., Boldry, J., & Kashy, D. A. (2005). Perceptions of conflict and support in romantic relationships: The role of attachment anxiety. *Journal of Personality and Social Psychology*, 88, 510–531. <https://doi.org/10.1037/0022-3514.88.3.510>.
- Clark, M. S., Lemay, E. P., Jr., Graham, S. M., Pataki, S. P., & Finkel, E. J. (2010). Ways of giving benefits in marriage: Norm use, relationship satisfaction, and attachment-related variability. *Psychological Science*, 21, 944–951. <https://doi.org/10.1177/0956797610373882>.
- Clark, M. S., & Mills, J. (1979). Interpersonal attraction in exchange and communal relationships. *Journal of Personality and Social Psychology*, 37, 12–24. <https://doi.org/10.1037/0022-3514.37.1.12>.
- Clark, M. S., & Mills, J. (1993). The difference between communal and exchange relationships: What it is and is not. *Personality and Social Psychology Bulletin*, 19, 684–691. <https://doi.org/10.1177/0146167293196003>.
- Clark, M. S., & Mills, J. (2012). A theory of communal (and exchange) relationships. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 232–250). Los Angeles: Sage.
- Clark, M. S., Mills, J., & Powell, M. C. (1986). Keeping track of needs in communal and exchange relationships. *Journal of Personality and Social Psychology*, 51, 333–338.
- Davis, D., Shaver, P. R., & Vernon, M. L. (2004). Attachment style and subjective motivations for sex. *Personality and Social Psychology Bulletin*, 30, 1076–1090. <https://doi.org/10.1177/0146167204264794>.
- 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. <https://doi.org/10.1177/0146167215580129>.

- Fabrigar, L. R., & Wegener, D. T. (2012). *Exploratory factor analysis*. New York: Oxford University Press.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*, 272–299. <https://doi.org/10.1037/1082-989X.4.3.272>.
- Feeney, B. C., & Collins, N. L. (2001). Predictors of caregiving in adult intimate relationships: An attachment theoretical perspective. *Journal of Personality and Social Psychology, 80*, 972–994. <https://doi.org/10.1037/0022-3514.80.6.972>.
- Fletcher, G. J., Simpson, J. A., & Thomas, G. (2000). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality and Social Psychology Bulletin, 26*, 340–354. <https://doi.org/10.1177/0146167200265007>.
- Gentzler, A. L., & Kerns, K. A. (2004). Associations between insecure attachment and sexual experiences. *Personal Relationships, 11*, 249–265. <https://doi.org/10.1111/j.1475-6811.2004.00081.x>.
- Gewirtz-Meydan, A., & Finzi-Dottan, R. (2018). Sexual satisfaction among couples: The role of attachment orientation and sexual motives. *Journal of Sex Research, 55*, 178–190. <https://doi.org/10.1080/00224499.2016.1276880>.
- Hatfield, E., Greenberger, D., Traupmann, J., & Lambert, P. (1982). Equity and sexual satisfaction in recently married couples. *Journal of Sex Research, 17*, 18–32. <https://doi.org/10.1080/00224498209551131>.
- Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry, 5*, 1–22. https://doi.org/10.1207/s15327965pli0501_1.
- Hughes, T. G., & Snell, W. E. (1990). Communal and exchange approaches to sexual relations. *Annals of Sex Research, 3*, 149–163. <https://doi.org/10.1177/107906329000300202>.
- Humberg, S., Nestler, S., & Back, M. D. (2018). Response surface analysis in personality and social psychology: Checklist and clarifications for the case of congruence hypotheses. *Social Psychological and Personality Science, 10*, 409–419. <https://doi.org/10.1177/1948550618757600>.
- Impett, E. A., Gordon, A., & Strachman, A. (2008). Attachment and daily sexual goals: A study of dating couples. *Personal Relationships, 15*, 375–390. <https://doi.org/10.1111/j.1475-6811.2008.00204.x>.
- Impett, E. A., Muise, A., & Harasymchuk, C. (2019). Giving in the bedroom: The costs and benefits of responding to a partner's sexual needs in daily life. *Journal of Social and Personal Relationships, 36*, 2455–2473. <https://doi.org/10.1177/0265407518787349>.
- Kenny, D. A., & Ackerman, R. A. (2019). *Power analysis for the actor-partner interdependence model*. Retrieved July, 2019, from <https://robert-ackerman.shinyapps.io/APIMPowerR/>.
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York: Guilford.
- Kleiman, E. (2019). *Power curves for multi-level studies*. Retrieved July, 2019, from <https://kleimanlab.org/power-curves/>.
- Lawrance, K. A., & Byers, E. S. (1995). Sexual satisfaction in long-term heterosexual relationships: The Interpersonal Exchange Model of Sexual Satisfaction. *Personal Relationships, 2*, 267–285. <https://doi.org/10.1111/j.1475-6811.1995.tb00092.x>.
- Lawrance, K. A., & Byers, E. S. (1998). Interpersonal Exchange Model of Sexual Satisfaction questionnaire. In C. M. Davis, W. L. Yarber, R. Baureman, G. Schreer, & S. L. Davis (Eds.), *Sexuality related measures: A compendium* (2nd ed., pp. 514–519). Thousand Oaks, CA: Sage.
- Lemay, E. P., Jr., Clark, M. S., & Feeney, B. C. (2007). Projection of responsiveness to needs and the construction of satisfying communal relationships. *Journal of Personality and Social Psychology, 92*, 834–853. <https://doi.org/10.1037/0022-3514.92.5.834>.
- MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*, 84–99. <https://doi.org/10.1037/1082-989X.4.1.84>.
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research, 39*, 99–128. https://doi.org/10.1207/s15327906mbr3901_4.
- Maisel, N. C., & Gable, S. L. (2009). The paradox of received social support: The importance of responsiveness. *Psychological Science, 20*, 928–932. <https://doi.org/10.1111/j.1467-9280.2009.02388.x>.
- Marjanovic, Z., Struthers, C. W., Cribbie, R., & Greenglass, E. R. (2014). The Conscientious Responders Scale: A new tool for discriminating between conscientious and random responders. *Sage Open, 4*, 1–10. <https://doi.org/10.1177/2158244014545964>.
- Middelberg, C. V. (2001). Projective identification in common couple dance. *Journal of Marital and Family Therapy, 27*, 341–352. <https://doi.org/10.1111/j.1752-0606.2001.tb00329.x>.
- Mikulincer, M. (1998). Attachment working models and the sense of trust: An exploration of interaction goals and affect regulation. *Journal of Personality and Social Psychology, 74*, 1209–1224. <https://doi.org/10.1037/0022-3514.74.5.1209>.
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. *Advances in Experimental Social Psychology, 35*, 56–152. [https://doi.org/10.1016/S0065-2601\(03\)01002-5](https://doi.org/10.1016/S0065-2601(03)01002-5).
- Mills, J., Clark, M. S., Ford, T. E., & Johnson, M. (2004). Measurement of communal strength. *Personal Relationships, 11*, 213–230. <https://doi.org/10.1111/j.1475-6811.2004.00079.x>.
- Mizrahi, M., Kanat-Maymon, Y., & Birnbaum, G. E. (2018). You haven't been on my mind lately: Partner responsiveness mediates the link between attachment insecurity and sexual fantasies. *Journal of Social and Personal Relationships, 35*, 440–459. <https://doi.org/10.1177/0265407517743083>.
- Monin, J. K., Schulz, R., Feeney, B. C., & Cook, T. B. (2010). Attachment insecurity and perceived partner suffering as predictors of personal distress. *Journal of Experimental Social Psychology, 46*, 1143–1147. <https://doi.org/10.1016/j.jesp.2010.05.009>.
- Muise, A., Bergeron, S., Impett, E. A., & Rosen, N. O. (2017). The costs and benefits of sexual communal motivation for couples coping with vulvodynia. *Health Psychology, 37*, 819–827. <https://doi.org/10.1037/hea0000470>.
- Muise, A., Bergeron, S., Impett, E. A., & Rosen, N. O. (2018). Communal motivation in couples coping with vulvodynia: Sexual distress mediates associations with pain, depression and anxiety. *Journal of Psychosomatic Research, 106*, 34–40. <https://doi.org/10.1016/j.jpsychores.2018.01.006>.
- 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. <https://doi.org/10.1177/1948550614553641>.
- Muise, A., & Impett, E. A. (2016). Applying theories of communal motivation to sexuality. *Social and Personality Psychology Compass, 10*, 455–467. <https://doi.org/10.1111/spc3.12261>.
- 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. <https://doi.org/10.1177/1948550612457185>.
- O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32*, 396–402. <https://doi.org/10.3758/BF03200807>.
- Preacher, K. J., & MacCallum, R. C. (2003). Repairing Tom Swift's electric factor analysis machine. *Understanding Statistics, 2*, 13–43. https://doi.org/10.1207/S15328031US0201_02.
- Raposo, S., Rosen, N. O., & Muise, A. (2020). Self-expansion is associated with greater relationship and sexual well-being for couples coping with low sexual desire. *Journal of Social and Personal*

- Relationships*, 37, 602–623. <https://doi.org/10.1177/0265407519875217>.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., & Congdon, R. T. (2004). *HLM 6: Hierarchical linear and nonlinear modeling*. Chicago: Scientific Software International.
- Ridge, S. R., & Feeney, J. A. (1998). Relationship history and relationship attitudes in gay males and lesbians: Attachment style and gender differences. *Australian and New Zealand Journal of Psychiatry*, 32, 848–859. <https://doi.org/10.3109/00048679809073875>.
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, 5, 357–387. <https://doi.org/10.1111/j.1475-6811.1998.tb00177.x>.
- Sakaluk, J. K., & Short, S. D. (2017). A methodological review of exploratory factor analysis in sexuality research: Used practices, best practices, and data analysis resources. *Journal of Sex Research*, 54, 1–9. <https://doi.org/10.1080/00224499.2015.1137538>.
- Schachner, D. A., & Shaver, P. R. (2004). Attachment dimensions and sexual motives. *Personal Relationships*, 11, 179–195. <https://doi.org/10.1111/j.1475-6811.2004.00077.x>.
- Schönbrodt, F. D. (2016). *Testing fit patterns with polynomial regression models*. Retrieved August, 2019, from osf.io/3889z.
- Sprecher, S. (1998). Social exchange theories and sexuality. *Journal of Sex Research*, 35, 32–43. <https://doi.org/10.1080/00224499809551915>.
- Sprecher, S. (2001). Equity and social exchange in dating couples: Associations with satisfaction, commitment, and stability. *Journal of Marriage and Family*, 63, 599–613. <https://doi.org/10.1111/j.1741-3737.2001.00599.x>.
- Tracy, J. L., Shaver, P. R., Albino, A. W., & Cooper, M. L. (2003). Attachment styles and adolescent sexuality. In P. Florsheim (Ed.), *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications* (pp. 137–159). Mahwah, NJ: Lawrence Erlbaum Associates.
- Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationship Scale (ECR)-Short Form: Reliability, validity, and factor structure. *Journal of Personality Assessment*, 88, 187–204. <https://doi.org/10.1080/00223890701268041>.
- Zhang, Z., Zyphur, M. J., & Preacher, K. J. (2009). Testing multilevel mediation using hierarchical linear models: Problems and solutions. *Organizational Research Methods*, 12, 695–719. <https://doi.org/10.1177/1094428108327450>.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Terms and Conditions

Springer Nature journal content, brought to you courtesy of Springer Nature Customer Service Center GmbH (“Springer Nature”).

Springer Nature supports a reasonable amount of sharing of research papers by authors, subscribers and authorised users (“Users”), for small-scale personal, non-commercial use provided that all copyright, trade and service marks and other proprietary notices are maintained. By accessing, sharing, receiving or otherwise using the Springer Nature journal content you agree to these terms of use (“Terms”). For these purposes, Springer Nature considers academic use (by researchers and students) to be non-commercial.

These Terms are supplementary and will apply in addition to any applicable website terms and conditions, a relevant site licence or a personal subscription. These Terms will prevail over any conflict or ambiguity with regards to the relevant terms, a site licence or a personal subscription (to the extent of the conflict or ambiguity only). For Creative Commons-licensed articles, the terms of the Creative Commons license used will apply.

We collect and use personal data to provide access to the Springer Nature journal content. We may also use these personal data internally within ResearchGate and Springer Nature and as agreed share it, in an anonymised way, for purposes of tracking, analysis and reporting. We will not otherwise disclose your personal data outside the ResearchGate or the Springer Nature group of companies unless we have your permission as detailed in the Privacy Policy.

While Users may use the Springer Nature journal content for small scale, personal non-commercial use, it is important to note that Users may not:

1. use such content for the purpose of providing other users with access on a regular or large scale basis or as a means to circumvent access control;
2. use such content where to do so would be considered a criminal or statutory offence in any jurisdiction, or gives rise to civil liability, or is otherwise unlawful;
3. falsely or misleadingly imply or suggest endorsement, approval, sponsorship, or association unless explicitly agreed to by Springer Nature in writing;
4. use bots or other automated methods to access the content or redirect messages
5. override any security feature or exclusionary protocol; or
6. share the content in order to create substitute for Springer Nature products or services or a systematic database of Springer Nature journal content.

In line with the restriction against commercial use, Springer Nature does not permit the creation of a product or service that creates revenue, royalties, rent or income from our content or its inclusion as part of a paid for service or for other commercial gain. Springer Nature journal content cannot be used for inter-library loans and librarians may not upload Springer Nature journal content on a large scale into their, or any other, institutional repository.

These terms of use are reviewed regularly and may be amended at any time. Springer Nature is not obligated to publish any information or content on this website and may remove it or features or functionality at our sole discretion, at any time with or without notice. Springer Nature may revoke this licence to you at any time and remove access to any copies of the Springer Nature journal content which have been saved.

To the fullest extent permitted by law, Springer Nature makes no warranties, representations or guarantees to Users, either express or implied with respect to the Springer nature journal content and all parties disclaim and waive any implied warranties or warranties imposed by law, including merchantability or fitness for any particular purpose.

Please note that these rights do not automatically extend to content, data or other material published by Springer Nature that may be licensed from third parties.

If you would like to use or distribute our Springer Nature journal content to a wider audience or on a regular basis or in any other manner not expressly permitted by these Terms, please contact Springer Nature at

onlineservice@springernature.com