









## Being Responsive and Self-Determined When it Comes to Sex: How and Why Sexual Motivation is Associated with Satisfaction and Desire in Romantic Relationships

Ariel Shoikhedbrod <sup>a</sup>, Natalie O. Rosen <sup>b</sup>, Serena Corsini-Munt <sup>c</sup>, Cheryl Harasymchuk <sup>d</sup>, Emily A. Impett <sup>e</sup>, and Amy Muise <sup>a</sup>

<sup>a</sup>Department of Psychology, York University; <sup>b</sup>Departments of Psychology and Neuroscience and Obstetrics and Gynaecology, Dalhousie University; <sup>c</sup>School of Psychology, University of Ottawa; <sup>d</sup>Department of Psychology, Carleton University; <sup>e</sup>Department of Psychology, University of Toronto Mississauga

### ABSTRACT

Couples experience greater satisfaction and desire when they are motivated to meet each other's sexual needs (sexual communal strength); however, doing so at the expense of one's own sexual needs (unmitigated sexual communion) can detract from satisfaction and desire. Self-determination theory suggests engaging in sex for pleasure and value (autonomous reasons) versus out of pressure and obligation (controlled reasons) may account for these differences. Across two dyadic studies, one cross-sectional ( $N = 103$  couples) and one longitudinal ( $N = 147$  couples), people higher in sexual communal strength had sex for more autonomous and less controlled reasons, and in turn, reported greater satisfaction and desire, overall, in daily life, and over time. In contrast, people higher in unmitigated sexual communion endorsed more controlled reasons for engaging in sex, and in turn reported lower satisfaction. Partners of people higher in sexual communal strength reported less controlled reasons for engaging in sex, and in turn, both partners felt more satisfied, whereas partners of people high in unmitigated sexual communion endorsed more controlled reasons and reported lower satisfaction. This research furthers our understanding of when and why being motivated to be responsive to a partner's sexual needs enhances or detracts from sexual and relationship quality.

### KEYWORDS

Sexuality; romantic relationships; sexual motivation; couples; self-determination theory

People in satisfying romantic relationships tend to live longer, healthier, and happier lives (Holt-Lunstad et al., 2010), in part because romantic partners help people meet their needs by providing emotional support, affection, and intimacy (Baumeister & Leary, 1995; Deci & Ryan, 2000). Being motivated to be responsive to a partner's needs may be particularly salient in the domain of sexuality in which partners, at least those in monogamous relationships, rely on one another to meet their sexual needs (Blanchflower & Oswald, 2004). Despite the benefits of sexually satisfying romantic relationships to health and well-being (Diamond & Huebner, 2012), partners often differ in their sexual interests (Mark & Murray, 2012), which can present the dilemma of weighing one's own versus a partner's sexual needs. Whereas some people can assert their own sexual needs and be responsive to their partner's needs (high *sexual communal strength*), which is associated with greater relationship and sexual satisfaction as well as sexual desire, others struggle to respond to their partner's sexual needs without neglecting their own needs (high *unmitigated sexual communion*) and report lower satisfaction (see reviews by Impett et al., 2020; Muise & Impett, 2016). Why do individuals high in sexual communal strength and unmitigated sexual communion experience divergent outcomes despite both being highly motivated to meet their partner's sexual needs? Drawing on self-determination theory (Ryan & Deci, 2017), we suggest one answer might lie in a person's reasons for engaging in sex with their partner. We draw the distinction

between people engaging in sex because they enjoy and value doing so (*autonomous reasons*) versus feeling pressured and obligated to do so (*controlled reasons*). Across two studies using dyadic and longitudinal methods, we tested whether people higher in sexual communal strength report more self-determined reasons for engaging in sex (i.e., more autonomous, less controlled), if people higher in unmitigated communion report less self-determined reasons for engaging in sex (i.e., less autonomous, more controlled), and if these different reasons accounted for the divergent associations between sexual communal motivation and satisfaction as well as desire in relationships.

### Sexual Communal Motivation

In romantic relationships, partners are often oriented toward caring for one another (Clark & Mills, 2012). People higher in *communal strength* (Mills et al., 2004) are motivated to be responsive to their partner's needs without the expectation of direct reciprocation and report higher personal and relationship well-being (Le et al., 2018). A growing body of research has extended theories of communal motivation to the domain of sexuality (Impett et al., 2020). *Sexual communal strength* refers to the motivation to be responsive to a partner's sexual needs (Muise et al., 2013), in contrast to *sexual exchange*, which refers to motivation to provide sexual benefits to a partner with the expectation of receiving equal or comparable benefits in

return (Raposo et al., 2020). While research testing the role of sexual exchange on couple's sexual and relationship quality has produced mixed findings (see Lawrance & Byers, 1995; Raposo et al., 2020; Sprecher, 1998) sexual communal strength has been consistently associated with greater relationship satisfaction, sexual satisfaction, and sexual desire for both partners (Day et al., 2015; Impett et al., 2019; Muise & Impett, 2015; Muise et al., 2013).

There are, however, limits to when being communally responsive to a partner's needs is beneficial. The tendency to excessively care for others while neglecting oneself – referred to as *unmitigated communion* (Fritz & Helgeson, 1998)—has been linked with higher relationship well-being but lower personal well-being (Le et al., 2018). Research applying communal theories to sexuality has begun distinguishing sexual communal strength from *unmitigated sexual communion*, the motivation to prioritize a partner's sexual needs to the exclusion of one's own needs. While people higher on sexual communal strength and unmitigated sexual communion are both motivated to be responsive to a partner's sexual needs (Le et al., 2018), the key distinction is that unmitigated sexual communion entails self-neglect whereas sexual communal strength involves responsiveness while still asserting one's own sexual needs (Muise & Impett, 2016). In a daily diary study of community couples, people higher in sexual communal strength reported higher sexual and relationship satisfaction whereas people higher in unmitigated sexual communion reported lower sexual but not relationship satisfaction (Impett et al., 2019). These findings have been extended to clinical samples of couples in which a woman experiences pain during sex (Muise et al., 2017, 2018) and is coping with low sexual desire (Bockaj et al., 2019; Hogue et al., 2019).

Identifying the reasons *why* people are motivated to respond to their partners' sexual needs to the benefit or detriment of their own needs is particularly important to understanding how people higher in sexual communal strength versus unmitigated sexual communion differ in satisfaction and desire. Sexual communal strength may be distinguished from unmitigated sexual communion by the extent to which communal motivation reflects an intrinsic interest in connecting with a partner and seeing them fulfilled compared to being responsive to their needs primarily out of extrinsic concerns contingent on maintaining self-esteem or preventing negative evaluations by a partner (Helgeson & Fritz, 1999; Muise & Impett, 2016). Insights from self-determination theory (Ryan & Deci, 2017), a leading theory of intrinsic and extrinsic motivation, can inform why sexual communal strength and unmitigated sexual communion are differentially associated with satisfaction and desire in romantic relationships.

### **Self-Determined Sexual Motivation**

The existing literature on *self-determined motivation* in romantic relationships suggests engaging with a partner in a freely chosen and self-endorsed manner is more conducive to need fulfillment and relationship functioning than feeling pressured by internal expectations or external demands from a partner (for a review, see Knee et al., 2013). More recently, research has applied self-determination theory to sexual motivation and

distinguished engaging in sex for *autonomous reasons*—deriving inherent pleasure and value from sex – from *controlled reasons*—pressuring oneself or feeling obligated to have sex (Gravel et al., 2020). Cross-sectional and daily diary studies have consistently shown that self-determined (i.e., more autonomous, less controlled) reasons for engaging in sex were associated with greater sexual need fulfillment, relationship quality, and general well-being for both partners (Brunell & Webster, 2013; Gravel et al., 2016, 2018; Jenkins, 2003; Smith, 2007; Vrangalova, 2015; Wongsomboon et al., 2022; Wood et al., 2018, 2021)

Autonomous and controlled reasons for engaging in sex can be further understood within the interpersonal context of being motivated to respond to a partner's needs. Although people in romantic relationships are motivated to be responsive to their partner's needs, they may be doing so for different reasons. For example, partners of people diagnosed with cancer who were motivated to help for more autonomous and less controlled reasons reported less depression, more life satisfaction, and greater benefits from caregiving than those who felt less autonomous and more controlled (Kim et al., 2008). Research on couples in which one partner was diagnosed with chronic pain has also shown that more autonomous and less controlled forms of helping motivation were associated with less distress, greater psychological well-being, and better relationship functioning for both the person with chronic pain and their partner (Kindt et al., 2016). That is, people in romantic relationships derive greater need fulfillment from helping their partner out of genuine care and concern rather than helping out of guilt or fear of disappointing their partner.

Feeling a sense of volition or pressure to respond to a partner's needs can extend to the sexual domain. People who are higher in sexual communal strength report having sex for approach goals, that is seeking positive and pleasurable sexual experiences with their partner, rather than having sex out of obligation or solely for their own interests (Hogue et al., 2019; Muise et al., 2013). Even in situations that have the potential to elicit pressure from a partner, such as times when a partner's desire is high but the person is not in the mood for sex (Day et al., 2015), or when couples are coping with a sexual dysfunction (Hogue et al., 2019; Muise et al., 2018), people who are higher in sexual communal strength remain genuinely motivated to be responsive to their partners' needs. In contrast, people higher in unmitigated sexual communion typically experience negative motivational states like distraction, boredom, and detachment during sex, indicating they may not find responding to their partners' sexual needs particularly enjoyable or meaningful (Impett et al., 2019). Instead, those higher in unmitigated sexual communion experience greater distress during sex possibly because they feel guilty for expressing their own sexual needs or fear being negatively evaluated by their partner (Muise et al., 2018).

A person's sexual communal motivation may also influence their partner's reasons for engaging in sex. People higher in sexual communal strength are perceived by their partner as being more sexually responsive (Muise & Impett, 2015). Partner responsiveness is a central feature of autonomy support (Deci et al., 2006; Knee et al., 2013), which involves acknowledging a partner's perspective, providing choice, and

encouraging self-initiation to support a partner's needs. As such, partners of people higher in sexual communal strength may be more motivated to enjoy and value having sex with someone who is autonomously supportive. Given that sexual communal strength also involves being motivated to be responsive to a partner's sexual needs without the expectation of direct reciprocation (Mills et al., 2004; Muise & Impett, 2016), partners of people higher in sexual communal strength may feel more comfortable expressing their sexual needs without feeling pressured. The overlapping feature of being responsive to a partner's sexual needs in unmitigated sexual communion may also be construed by partners as supportive (Le et al., 2018); however, the self-sacrificing nature of people higher in unmitigated sexual communion could have interpersonal consequences for partners who may feel guilty for not being as sexually responsive in return or construe the self-neglect as dissatisfaction in their relationship and sex life.

An area in which communal and self-determined theories converge is the integration of partner responsiveness with personal need fulfillment in romantic relationships. Self-determination theory suggests people are inherently motivated to internalize social values and behaviors, including being responsive to a partner's sexual needs, into their core sense of self (Deci et al., 1994; Knee et al., 2013). When people enjoy and value engaging in sex with their partner for autonomous reasons, they should feel more authentically congruent with their "true" self, which corresponds to experiencing optimal outcomes in their relationship. In contrast, people who feel pressured and obligated to have sex with a partner for controlled reasons assume they need to engage in sex without personally endorsing it, which negatively impacts their relationship. As such, one reason why people higher in sexual communal strength may experience higher satisfaction and desire in their relationship is because they engage in sex for autonomous reasons that align with their true self whereas people higher in unmitigated sexual communion may report lower satisfaction and desire because they engage in sex for controlled reasons predicated on self-neglect.

## Overview of Current Research

Although being motivated to meet a partner's sexual needs is central to relationship and sexual quality, people higher in sexual communal strength and unmitigated sexual communion report divergent effects on sexual satisfaction and desire despite both being highly responsive. Self-determination theory suggests that people may be responsive to a partner's sexual needs for different reasons, ranging from seeking enjoyment and value in having sex for autonomous reasons to feeling pressured and obligated to engage in sex for controlled reasons (Gravel et al., 2020). The aim of the current research was to test self-determined reasons for engaging in sex as one explanation for the associations between sexual communal motivation and satisfaction and desire in romantic relationships. We predicted that people higher in sexual communal strength and their partners would endorse more autonomous and less controlled reasons for engaging in sex, and in turn, both members of the

couple will report greater relationship satisfaction, sexual satisfaction, and sexual desire overall and over time. In contrast, we predicted that people higher in unmitigated sexual communion and their partners would report lower satisfaction and desire overall and over time on account of being motivated to engage in sex for less autonomous and more controlled reasons. We also explored whether the findings for sexual communal motivation and self-determined reasons for engaging in sex differ between men and women as well as between those in short- and long-term relationships based on inconsistent effects of gender and relationship length found in past research (Gravel et al., 2016). We tested these predictions in an initial cross-sectional pilot study of people in romantic relationships (see online supplemental materials; OSM), a dyadic cross-sectional sample (Study 1), and a dyadic longitudinal sample (Study 2). Study materials, data, and syntax are available on the Open Science Framework: <https://osf.io/dakb2/>

## Pilot Study

As a preliminary step to inform our hypotheses, we ran a pilot study with a cross-sectional sample of individuals in romantic relationships ( $N = 248$ ), recruited from Prolific Academic, an online crowdsourcing platform. A detailed summary of the participant demographics, methods, and results, which supported our key predictions, is provided in the OSM. In response to reviewers, we also conducted confirmatory factor analyses using this data to compare models in which sexual communal strength and unmitigated sexual communion are distinct constructs versus facets of the same construct. The findings, which are provided in the OSM, suggest that sexual communal strength and unmitigated sexual communion are indeed distinct constructs.

## Study 1

In Study 1, a cross-sectional sample of couples, we tested whether, for both partners, self-determined reasons for engaging in sex accounted for the associations between sexual communal motivation and satisfaction and desire.

## Participants and Procedure

We recruited both members of romantic couples using online (e.g., Kijiji, Facebook, Twitter, and Reddit) and physical (e.g., hospitals, universities, and community buildings) advertisements across North America. To be eligible, both partners had to agree to participate and be 18 years or older, fluent in English, and in a relationship with each other for at least six months, with a minimum of four in-person contacts per week during the last month, and not report any sexual problems. We aimed to recruit at least 100 couples based on guidelines for average sample sizes in dyadic research (Kenny et al., 2006). The final sample consisted of 206 participants ( $N = 103$  couples). Participant demographics are reported in Table 1. A sensitivity analysis using G\*Power (Faul et al., 2007), indicated a sample of 103 couples accommodated the detection of

**Table 1.** Comparison of sample characteristics across studies.

Characteristic	Study 1		Study 2	
	<i>M</i> or <i>n</i>	<i>SD</i> or %	<i>M</i> or <i>n</i>	<i>SD</i> or %
Age (years)	30.7	9.4	32.6	7.5
Relationship duration (years)	6.2	6.8	7.8	5.1
Race				
White	71.4		70.7	
Black	4.4		0.7	
Asian	14.1		16	
Hispanic	3.4		1.7	
Multi-racial/Cultural	3.9		7.1	
Identities not listed	2.8		3.8	
Relationship status				
Dating	23.3		1	
Cohabiting	22.8		21.1	
Common Law	5.8		29.6	
Married	46.1		48.3	
Status not listed	2		0	
Sexual orientation				
Bisexual	12.6		8.2	
Lesbian/gay	2.9		6.5	
Heterosexual	71.8		82.7	
Orientation not listed	12.7		2.6	
Gender				
Man	46.1		47.6	
Woman	51.5		50.7	
Gender not listed	2.4		1.7	

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.

a minimum unstandardized slope of .034 for the association between sexual communal strength and sexual satisfaction ( $ICC = .44$ ), with 80% power and  $\alpha$  (two-sided) = .05.<sup>1</sup>

Couples were initially screened over the phone to confirm their eligibility. Each member of the couple was sent an individualized link and, after providing consent to participate, they were able to access the online survey. Partners completed the survey separately and were asked not to discuss their responses with each other. Once both members of the couple completed the survey, they were debriefed and each compensated \$10 CAD with an Amazon gift card.

## Measures

### Sexual Communal Motivation

**Sexual communal strength** was assessed with the Sexual Communal Strength Scale (SCSS; Muise et al., 2013), which included six items (e.g., “How far would you be willing to go to meet your partner’s sexual needs?”  $M = 3.18$ ,  $SD = .48$ ;  $\alpha = .67$ ,  $\omega = .66$ ), rated on a 5-point scale (0 = *not at all*, 4 = *extremely*). **Unmitigated sexual communion** was assessed with the Unmitigated Sexual Communion Scale (USCS; Hogue et al., 2019), which included seven items (e.g., “I always place my partner’s sexual needs above my own.”  $M = 3.16$ ,  $SD = .71$ ;  $\alpha = .72$ ,  $\omega = .73$ ) rated on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

<sup>1</sup>The sample sizes used for sensitivity analyses were corrected for non-independence in the data to determine the number of independent observations. Effective sample size =  $N / (1 + [n - 1] * ICC)$ , where  $N$  = total number of observations,  $n$  = cluster size (e.g., number of partners within a couple and/or number of repeated assessments within partners), and  $ICC$  = within-cluster correlation. See Wiley and Wiley (2019), pp. 455–456.

### Self-Determined Reasons for Engaging in Sex

The Sexual Motivation Scale (SMS; Gravel et al., 2016) was used to measure self-determined reasons for engaging in sex with a partner. Participants rated the extent to which they were motivated to engage in sex for **autonomous reasons** (e.g., “Because sex is exciting;” 12 items;  $M = 5.76$ ,  $SD = 1.03$ ;  $\alpha = .91$ ,  $\omega = .91$ ) and **controlled reasons** (e.g., “To prove to myself that I am a good lover;” 12 items;  $M = 2.23$ ,  $SD = .98$ ;  $\alpha = .86$ ,  $\omega = .88$ ), on a 7-point scale (1 = *Does not correspond at all*, 7 = *Corresponds completely*).<sup>2,3</sup>

### Relationship Satisfaction

Relationship satisfaction was measured using the Couple Satisfaction Index (CSI; Funk & Rogge, 2007). The CSI consists of 16 items (e.g., “In general, how often do you think that things between you and your partner are going well?”  $M = 4.26$ ,  $SD = .73$ ;  $\alpha = .95$ ,  $\omega = .96$ ) rated on 5-point scales with anchors tailored to specific items (e.g., 0 = *Never*, 5 = *All the time*).

### Sexual Satisfaction

Sexual satisfaction was measured with the Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1995). Participants’ sexual satisfaction with their partner was rated with five bipolar items on a 7-point scale (e.g., My sex life is “very bad” to “very good;”  $M = 6.29$ ,  $SD = .79$ ,  $\alpha = .92$ ,  $\omega = .92$ ).

### Sexual Desire

Sexual desire was measured with the partner-focused dyadic subscale of the Sexual Desire Inventory-2 (SDI-2; Moyano et al., 2017; Spector et al., 1996). Participants rated their sexual desire for their partner with seven items (e.g., “When you have sexual thoughts, how strong is your desire to engage in sexual behavior with a partner?”  $M = 5.93$ ,  $SD = 1.28$ ;  $\alpha = .84$ ,  $\omega = .84$ ) on 9-point scales with anchors tailored to specific items (e.g., 0 = *no desire*, 8 = *strong desire*).

## Data Analysis

We analyzed the data with multilevel modeling using mixed models in SPSS 27. In line with our pre-registered analytic plan (<https://osf.io/39sxxq>), we first examined the descriptive statistics and bivariate correlations among the primary variables (see

<sup>2</sup>Gravel et al. (2016) originally distinguished self-determined (i.e., intrinsic, identified, and integrated) from non-self-determined (i.e., introjected, external, amotivation) sexual motives subscales, which we respectively refer to as autonomous and controlled reasons for engaging in sex across studies. Previous research has suggested that amotivation may reflect an impersonal motivational orientation that is distinct from the introjected and external elements of a controlled motivational orientation (Deci & Ryan, 1985). However, when analyzing our data with the amotivation items included versus excluded from the controlled subscale, our findings largely remained the same (see OSM).

<sup>3</sup>In addition to self-determined reasons for engaging in sex, approach and avoidance sexual goals were also measured and examined as competing motivational mechanisms based on previous research (Muise et al., 2013). We re-ran our primary mediation models of self-determined reasons for engaging in sex mediating the effects of sexual communal motivation on satisfaction while controlling for approach and avoidance sexual goals, and largely, the findings reported in the results remained. (see OSM).



**Table 2.** Correlations in Study 1.

	1	2	3	4	5	6	7
1. Sexual Communal Strength	<b>.22**</b>						
2. Unmitigated Sexual Communion	.39***	<b>-.17*</b>					
3. Autonomous Reasons	.30***	.01	<b>.20**</b>				
4. Controlled Reasons	-.18**	.29***	-.13	<b>.31***</b>			
5. Relationship Satisfaction	.27***	-.06	.25***	-.39***	<b>.62***</b>		
6. Sexual Satisfaction	.43***	.05	.32***	-.39***	.69***	<b>.50***</b>	
7. Sexual Desire	.39***	.21**	.55***	-.21**	.29***	.47**	<b>.21**</b>

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

Table 2). To account for the non-independence of the dyadic data, analyses were conducted in accordance with the Actor-Partner Interdependence Model (APIM; Cook & Kenny, 2005). We tested two-level indistinguishable models in which individuals were nested within dyads (Kenny et al., 2006). To test whether sexual communal strength and unmitigated sexual communion were associated with relationship satisfaction, sexual satisfaction, and sexual desire through autonomous and controlled reasons for engaging in sex for both partners, we conducted multilevel mediation analyses guided by APIM (Ledermann et al., 2011). All predictors were mean-centered. Actors' and partners' sexual communal strength and unmitigated sexual communion were entered simultaneously as predictors and autonomous and controlled reasons for engaging in sex were tested as simultaneous mediators. We used the Monte Carlo Method for Assessing Mediation (MCMAM; Selig & Preacher, 2008) with 20,000 resamples and 95% Confidence Intervals (CIs). Significant indirect effects were present if the 95% CIs did not contain zero. We also conducted exploratory moderation analyses by gender and relationship duration. Largely, the effects were consistent for people in shorter and longer relationships and for men and women (see OSM).

## Results

First, we tested whether sexual communal strength and unmitigated sexual communion were associated with satisfaction and desire (see total effects in Table 3). After controlling for unmitigated sexual communion, people higher in sexual communal strength reported significantly higher relationship satisfaction, sexual satisfaction, and sexual desire, as did their partners. In contrast, people higher in unmitigated sexual communion reported lower sexual desire but not lower relationship and sexual satisfaction after controlling for sexual communal strength, and there were no significant associations with their partner's satisfaction and desire.

Next, consistent with our predictions, people higher in sexual communal strength endorsed engaging in sex for more autonomous reasons (see Table 3 for total effects), and in turn, reported greater relationship satisfaction ( $b = .11$ ,  $SE = .05$ ,  $t(164.93) = 2.36$ ,  $p = .019$ , 95% CI[.02, .20]), sexual satisfaction ( $b = .14$ ,  $SE = .05$ ,  $t(188.70) = 2.96$ ,  $p = .003$ , 95% CI[.05, .23]), and sexual desire ( $b = .52$ ,  $SE = .06$ ,  $t(192.61) = 8.22$ ,  $p < .001$ , 95% CI[.40, .64]). Autonomous reasons for engaging in sex significantly mediated the associations between sexual communal strength and relationship satisfaction, sexual

satisfaction, and sexual desire (see direct and indirect effects in Table 2).<sup>4</sup>

Controlled reasons for engaging in sex reported by both partners also significantly mediated the association between sexual communal strength and relationship satisfaction, sexual satisfaction, and sexual desire for both partners (see total, direct and indirect effects in Table 3). People higher in sexual communal strength endorsed less controlled reasons for engaging in sex, and in turn, reported greater relationship satisfaction ( $b = .20$ ,  $SE = .05$ ,  $t(174.11) = 3.88$ ,  $p < .001$ , 95% CI[.30, .10]), sexual satisfaction ( $b = .21$ ,  $SE = .05$ ,  $t(192.40) = 4.00$ ,  $p < .001$ , 95% CI[.11, .31]), and sexual desire ( $b = .23$ ,  $SE = .07$ ,  $t(192.50) = 3.24$ ,  $p < .001$ , 95% CI[.10, .37]); however, their partner reported less sexual desire ( $b = -.17$ ,  $SE = .07$ ,  $t(192.50) = -2.367$ ,  $p = .019$ , 95% CI[-.31, -.03]) and there was a trending positive association with a partner's relationship satisfaction ( $b = .10$ ,  $SE = .05$ ,  $t(174.11) = 1.90$ ,  $p = .059$ , 95% CI[-.01, .20]). People higher in sexual communal strength also had partners who reported engaging in sex for less controlled reasons, and in turn, they reported greater sexual satisfaction but lower sexual desire whereas partners reported greater relationship satisfaction, sexual satisfaction, and sexual desire.

Controlled reasons for engaging in sex also significantly mediated the associations between unmitigated sexual communion and relationship satisfaction, sexual satisfaction, and sexual desire (see total, direct and indirect effects in Table 3). People higher in unmitigated sexual communion reported engaging in sex for more controlled reasons (but there was no association with autonomous reasons), and in turn, reported lower relationship satisfaction, sexual satisfaction, and sexual desire, but these findings did not extend to partners.

In sum, the findings from Study 1, while cross-sectional, demonstrated that people higher in sexual communal strength and their partners reported greater satisfaction and desire because they endorsed engaging in sex for more autonomous and less controlled reasons whereas people higher in unmitigated sexual communion reported lower satisfaction and desire because they endorsed being sexually motivated for primarily more controlled reasons. The mediating role of controlled reasons for engaging in sex extended to partners of people higher in sexual communal

<sup>4</sup>Given that people may be motivated to have sex in the presence or absence of sexual desire, we were interested in whether our effects on relationship and sexual satisfaction were specific to sexual motivation and not solely driven by desire. We reran the models examining the mediating effects of self-determined reasons for engaging in sex on the associations between sexual communal motivation and relationship and sexual satisfaction while controlling for sexual desire and found no significant changes to the findings.

**Table 3.** Total, direct and indirect effects in Study 1.

Effects	Autonomous reasons	Controlled reasons	Actor's relationship satisfaction	Partner's relationship satisfaction	Actor's sexual satisfaction	Partner's sexual satisfaction	Actor's sexual desire	Partner's sexual desire
<b>Sexual Communal Strength (effects mediated by actor's reasons)</b>								
Total Effect	.73***(.16)	-.57***(.14)	.41***(.10)	.35***(.10)	.64***(.11)	.47***(.11)	.76***(.17)	.35*(.17)
Direct Effect	—	—	.18(.11)	.17(.11)	.39**(.11)	.33**(.11)	.31 <sup>a</sup> (.16)	.29 <sup>b</sup> (.16)
Indirect Effect (Autonomous) <sub>1</sub>	—	—	<b> [.01, .16]</b>	[-.01, .04]	<b> [.03, .20]</b>	[-.02, .03]	<b> [.22, .60]</b>	[-.02, .03]
Indirect Effect (Controlled) <sub>2</sub>	—	—	<b> [.04, .20]</b>	[-.00, .09]	<b> [.05, .22]</b>	[-.01, .07]	<b> [.04, .25]</b>	<b> [-.14, -.00]</b>
<b>Sexual Communal Strength (effects mediated by partner's reasons)</b>								
Total Effect	.13(.16)	-.34*(.14)	.41***(.10)	.35***(.10)	.64***(.11)	.47***(.11)	.76***(.17)	.35*(.17)
Direct Effect	—	—	.18(.11)	.17(.11)	.39**(.11)	.33**(.11)	.31 <sup>a</sup> (.16)	.29 <sup>b</sup> (.16)
Indirect Effect (Autonomous) <sub>1</sub>	—	—	[-.03, .11]	[-.02, .06]	[-.05, .01]	[-.03, .08]	[-.08, .11]	[-.09, .24]
Indirect Effect (Controlled) <sub>2</sub>	—	—	[-.00, .13]	<b> [.01, .14]</b>	<b> [.02, .11]</b>	<b> [.01, .15]</b>	<b> [-.20, -.02]</b>	<b> [.01, .17]</b>
<b>Unmitigated Sexual Communion (effects mediated by actor's reasons)</b>								
Total Effect	-.16(.11)	.54***(.10)	-.17*(.08)	-.13(.08)	-.07(.08)	.01(.08)	.16(.11)	-.07(.11)
Direct Effect	—	—	-.03(.08)	-.05(.08)	.08(.08)	.08(.08)	.34**(.10)	-.14(.10)
Indirect Effect (Autonomous) <sub>1</sub>	—	—	[-.05, .01]	[-.02, .02]	[-.06, .01]	[-.01, .04]	[-.20, .03]	[-.01, .02]
Indirect Effect (Controlled) <sub>2</sub>	—	—	<b> [-.18, -.05]</b>	[-.04, .01]	<b> [-.20, -.05]</b>	[-.03, .01]	<b> [-.22, -.04]</b>	[-.01, .07]
<b>Unmitigated Sexual Communion (effects mediated by partner's reasons)</b>								
Total Effect	.01(.11)	.12(.10)	-.17*(.08)	-.13(.08)	-.07(.08)	.01(.08)	.16(.11)	-.07(.11)
Direct Effect	—	—	-.03(.08)	-.05(.08)	.08(.08)	.08(.08)	.34**(.10)	-.14(.10)
Indirect Effect (Autonomous) <sub>1</sub>	—	—	[-.03, .01]	[-.02, .03]	[-.03, .01]	[-.03, .04]	[-.03, .02]	[-.10, .12]
Indirect Effect (Controlled) <sub>2</sub>	—	—	[-.11, .00]	[-.07, .01]	[-.10, .02]	[-.07, .01]	[-.01, .07]	[-.08, .02]

Numbers outside parentheses are unstandardized coefficients; numbers inside parentheses are SEs; numbers inside brackets are upper and lower limits of 95% confidence intervals from Monte Carlo Method for Assessing Mediation (MCMAM) mediation analyses. Dyads in these analyses are indistinguishable and actor and partner effects are tested in the same model, therefore, the total and direct effects are the same for the actor and partner mediation models.<sub>1</sub> Indirect effects of sexual communal strength/sexual unmitigated communion → autonomous reasons for engaging in sex → relationship satisfaction/sexual satisfaction/sexual desire  
<sub>2</sub>Indirect effects of sexual communal strength/sexual unmitigated communion → controlled reasons for engaging in sex → relationship satisfaction/sexual satisfaction/sexual desire.

Significant indirect effects are bolded.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ,  $a = .052$ ,  $b = .065$ .

strength but not to partners of people higher in unmitigated sexual communion. People higher in sexual communal strength had partners who endorsed less controlled reasons for engaging in sex, which was associated with greater satisfaction for both partners and greater sexual desire for the partner; however, controlled reasons reported by a partner was positively associated with one's own sexual desire, which was inconsistent with our predictions.

## Study 2

In Study 2, a multi-part dyadic study, we extended the cross-sectional findings from Study 1 using longitudinal methods to better capture the temporal sequence of sexual communal motivation, self-determined reasons for engaging in sex, satisfaction, and desire among romantic couples. In particular, we used measures captured at three different time points to determine if individual differences in sexual communal strength and unmitigated sexual communion (measured in a baseline survey) were associated with people's daily reports of their autonomous and controlled reasons for engaging in sex (measured in a 21-day survey), and in turn, whether self-determined reasons predicted relationship satisfaction, sexual satisfaction, and sexual desire over time (measured in a 3-month follow-up survey).

## Participants and Procedure

Couples were recruited using online advertisements (e.g., Reddit) across Canada as part of a larger study. To be eligible, both partners had to agree to participate, be 18 years or older,

fluent in English, in a relationship with each other for at least two years, and spend five out of seven nights together per week. We aimed to recruit at least 150 couples to account for attrition at the daily and follow-up stages of the study. The final sample consisted of 294 participants at baseline ( $N = 147$  couples), 284 participants at the daily level, and 280 participants at follow up. Participant demographics are shown in Table 1. A sensitivity analysis using G\*Power (Faul et al., 2007) indicated a sample of 140 couples accommodated the detection of a minimum unstandardized slope of .014 for the association between sexual communal strength at baseline and sexual satisfaction at follow up ( $ICC = .22$ ) with 80% power and  $\alpha$  (two-sided) = .05.

Couples were pre-screened over the phone to confirm their eligibility. After providing their informed consent, each member of the couple was provided with an individualized link to complete a 60-minute baseline survey, which consisted of demographic items and our key measures in addition to other measures included as part of a broader research project. Starting on the following day, each partner was sent a 15-minute survey for 21 consecutive days, which they were instructed to complete separately before bed each night. Participants completed an average of 19.43 (out of 21) daily entries. Three months after completing their final daily survey, participants were sent a 20-minute follow up survey that included a smaller battery of questionnaires that overlapped with the baseline survey for our key measures over time. Each partner was paid up to CAD \$65 in Amazon.ca gift cards for participating with payment prorated depending on the number

of daily surveys completed and the completion of the follow-up survey.

### Baseline Measures

**Sexual communal strength** and **unmitigated sexual communion** were exclusively measured at baseline using the SCSS ( $M = 5.27$ ,  $SD = .87$ ;  $\alpha = .70$ ,  $\omega = .70$ ) and the USCS ( $M = 4.10$ ,  $SD = 1.13$ ;  $\alpha = .71$ ,  $\omega = .73$ ), on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). **Relationship satisfaction** was measured at baseline with three items from the relationship satisfaction subscale of the Perceived Relationship Quality Component Inventory (PRQC; Fletcher et al., 2000) on a 7-point scale (1 = *not at all*; 7 = *extremely*  $M = 6.20$ ,  $SD = .82$ ;  $\alpha = .90$ ,  $\omega = .90$ ). **Sexual satisfaction** was measured at baseline with the GMSEX ( $M = 5.60$ ,  $SD = 1.29$ ;  $\alpha = .93$ ,  $\omega = .93$ ). **Sexual desire** was measured with six items from the dyadic subscale of the SDI-2 ( $M = 5.30$ ,  $SD = 1.58$ ;  $\alpha = .90$ ,  $\omega = .90$ ) on a 9-point scale (e.g., 0 = *no desire*, 8 = *strong desire*).

### Daily Measures

Daily self-determined reasons for engaging in sex were measured with a shortened version of the SMS, which consisted of five items for **autonomous reasons** ("Because I felt that having sex is meaningful;  $M = 5.01$ ,  $SD = 1.12$ ,  $\alpha = .63$ ,  $\omega = .63$ ) and four items for **controlled reasons** ("To prove to myself that I am a good lover;  $M = 2.22$ ,  $SD = 1.39$ ,  $\alpha = .79$ ,  $\omega = .81$ ). The SMS has been previously adapted and validated in a daily context (Gravel et al., 2020). Self-determined reasons for engaging in sex were only assessed on days when couples engaged in sex. **Relationship satisfaction** at the daily level was measured with a single item, "How satisfied were you with your relationship today?" ( $M = 5.99$ ,  $SD = 1.17$ ). **Sexual satisfaction** at the daily level was measured with the GMSEX ( $M = 4.94$ ,  $SD = 1.59$ ). **Sexual desire** was measured at the daily level with a single item, "I felt a great deal of sexual desire for my partner today" ( $M = 4.40$ ,  $SD = 1.73$ ).

### Follow-Up Measures

The relationship satisfaction subscale from the PRQC ( $M = 5.93$ ,  $SD = 1.12$ ;  $\alpha = .94$ ,  $\omega = .94$ ), the GMSEX ( $M = 5.58$ ,  $SD = 1.36$ ;  $\alpha = .95$ ,  $\omega = .95$ ), and the dyadic subscale of SDI-2 ( $M =$

4.99,  $SD = 1.58$ ;  $\alpha = .90$ ,  $\omega = .90$ ) from baseline were reassessed at the 3-month follow up.

### Data Analysis

We analyzed the data with multilevel modeling using mixed models in SPSS 27 based on our pre-registered analytic plan (<https://osf.io/pw5yg/>). We first examined the descriptive statistics and bivariate correlations among the primary variables (see Table 4). For the daily diary portion of the study, we ran two-level cross-classified models in which people were nested within dyads, and people and days were crossed to account for both partners completing daily surveys on the same days (Kenny et al., 2006). To avoid confounding between- and within-person variance, daily predictor variables were aggregated and person-mean centered (Raudenbush et al., 2004; Zhang et al., 2009). As such, these analyses accounted for between-person differences in autonomous and controlled reasons for engaging in sex and assess whether day-to-day changes from a participant's own mean on the self-determined reasons variables are associated with corresponding changes in daily relationship satisfaction, sexual satisfaction, and sexual desire. Given that self-determined reasons for engaging in sex were only assessed on days when sexual activity occurred, the analyses only included sexual activity days (992 total days).

We then conducted multilevel mediation analyses guided by APIM (Ledermann et al., 2011) to longitudinally test whether sexual communal strength and unmitigated sexual communion at baseline were associated with relationship satisfaction, sexual satisfaction, and sexual desire three months later through autonomous and controlled reasons for engaging in sex aggregated over the 21-day period for both partners. Actors' and partners' sexual communal strength and unmitigated sexual communion were mean-centered and entered simultaneously as predictors. Aggregated values of actor's and partner's autonomous and controlled reasons for engaging in sex during the 21-day period were simultaneously entered as mediators in the models. We controlled for baseline satisfaction and desire on outcomes three months later in the corresponding mediation models. We used the MCMAM (Selig & Preacher, 2008) with 20,000 resamples and 95% CIs. We conducted exploratory moderation analyses by gender and relationship duration. Largely, the effects were consistent for people in shorter and longer relationships and for men and women (see OSM).

**Table 4.** Correlations in Study 2.

	1	2	3	4	5	6	7	8	9	10
1. Baseline Sexual Communal Strength	<b>-.14***</b>									
2. Baseline Unmitigated Sexual Communion	.56***	<b>-.06***</b>								
3. Baseline Relationship Satisfaction	.12***	.07***	<b>.35***</b>							
4. Baseline Sexual Satisfaction	.28***	.02	.46***	<b>.50***</b>						
5. Baseline Sexual Desire	.57***	.28***	.09***	.47***	<b>.31***</b>					
6. Daily Autonomous Reasons	.21**	.03**	.16***	.32***	.41***	<b>.27***</b>				
7. Daily Controlled Reasons	-.22***	.12***	-.15***	-.25***	-.13***	.12***	<b>.33***</b>			
8. Follow-up Relationship Satisfaction	.16***	.07***	.56***	.27***	.06***	.06***	-.25***	<b>.50***</b>		
9. Follow-up Sexual Satisfaction	.19***	.01	.47***	.59***	.26***	.25***	-.32***	.55***	<b>.51***</b>	
10. Follow-up Sexual Desire	.45***	.23***	.15***	.37***	.74***	.38***	-.10***	.26***	.48***	<b>.36***</b>

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Correlations between partners are bolded on the diagonal. Daily variables are aggregate values across the 21-day period.

## Results

### Daily Associations

Our main goal in the daily analyses was to test whether daily changes (within-person fluctuations) in autonomous and controlled reasons for engaging in sex were associated with our key outcomes. However, we first examined whether sexual communal strength and unmitigated sexual communion at baseline were associated with autonomous and controlled reasons for engaging in sex during the 21-day period. People higher in sexual communal strength at baseline endorsed more autonomous ( $b = .30$ ,  $SE = .08$ ,  $t(227.42) = 3.76$ ,  $p < .001$ , 95% CI[.14, .46]) and less controlled reasons ( $b = -.60$ ,  $SE = .10$ ,  $t(235.89) = -5.95$ ,  $p < .001$ , 95% CI[-.80, -.40]) for engaging in sex during the 21-day period and their partner reported less daily controlled reasons ( $b = -.22$ ,  $SE = .10$ ,  $t(238.11) = -2.16$ ,  $p = .032$ , 95% CI[-.42, -.19]). In contrast, people higher in unmitigated sexual communion at baseline reported more controlled reasons for engaging in sex ( $b = .37$ ,  $SE = .07$ ,  $t(238.15) = 4.91$ ,  $p < .001$ , 95% CI[.22, .53]) during the 21-day period and their partner did as well ( $b = .18$ ,  $SE = .07$ ,  $t(238.35) = 2.39$ ,  $p = .018$ , 95% CI[.03, .33]).

We then examined the within-person effects of self-determined reasons for engaging in sex on satisfaction and desire during the 21-day period. On days when people reported more autonomous reasons for engaging in sex during the 21-day period, they reported greater relationship satisfaction ( $b = .20$ ,  $SE = .04$ ,  $t(610.60) = 5.53$ ,  $p < .001$ , 95% CI[.13, .27]), sexual satisfaction ( $b = .40$ ,  $SE = .03$ ,  $t(567.86) = 12.25$ ,  $p < .001$ , 95% CI[.33, .46]), and sexual desire ( $b = .37$ ,  $SE = .04$ ,  $t(634.71) = 8.29$ ,  $p < .001$ , 95% CI[.29, .46]), and their partner reported marginally greater sexual satisfaction ( $b = .06$ ,  $SE = .03$ ,  $t(567.86) = 1.88$ ,  $p = .060$ , 95% CI[-.00, .12]). In contrast, on days when people reported more controlled reasons for engaging in sex during the 21-day period, they reported lower daily relationship satisfaction ( $b = -.12$ ,  $SE = .04$ ,  $t(587.14) = -2.91$ ,  $p = .004$ , 95% CI[-.20, -.04]), sexual satisfaction ( $b = -.24$ ,  $SE = .04$ ,  $t(551.47) = -6.33$ ,  $p < .001$ , 95% CI[-.31, -.16]), and sexual desire ( $b = -.22$ ,  $SE = .05$ ,  $t(646.40) = -4.39$ ,  $p < .001$ , 95% CI[-.32, -.12]); however, partners reported greater sexual desire ( $b = .11$ ,  $SE = .05$ ,  $t(647.21) = 2.19$ ,  $p = .029$ , 95% CI[.01, .21]).

### Mediation Analyses

To best test our key mediation models, we used the longitudinal data and tested whether sexual communal motivation at baseline was associated with the aggregates of self-determined reasons for engaging in sex during the 21-day daily experience study, and in turn sexual satisfaction, relationship satisfaction and sexual desire at the three-month follow-up, accounting for the corresponding outcomes at baseline (see Table 5 for total effects). After controlling for satisfaction and desire at baseline, the positive association between a person's sexual communal strength and relationship satisfaction at follow-up was trending in the expected direction ( $p = .09$ ), and partners of people higher in sexual communal strength reported higher sexual satisfaction three months later.

Next, as predicted, people higher in sexual communal strength at baseline reported being sexually motivated for more autonomous reasons during the 21-day period, and in turn, reported higher sexual satisfaction ( $b = .15$ ,  $SE = .07$ ,  $t(231.25) = 2.01$ ,  $p = .046$ , 95% CI[.00, .30]) and sexual desire ( $b = .16$ ,  $SE = .08$ ,  $t(233.00) = 2.05$ ,  $p = .042$ , 95% CI[.01, .32]) three months later. Autonomous reasons for engaging in sex during the 21-day period significantly mediated the effect of sexual communal strength at baseline on sexual satisfaction and desire at follow up (see Table 5 for total, direct, and indirect effects).

Controlled reasons for engaging in sex during the 21-day period also significantly mediated the associations between baseline sexual communal strength and satisfaction at follow-up for both partners (see Table 5 for total, direct, and indirect effects). People higher in sexual communal strength and their partners reported less controlled reasons for engaging in sex, and in turn reported greater relationship satisfaction ( $b = .14$ ,  $SE = .05$ ,  $t(231.60) = 2.60$ ,  $p = .010$ , 95% CI[.03, .25]) and sexual satisfaction ( $b = .22$ ,  $SE = .06$ ,  $t(230.29) = 3.73$ ,  $p < .001$ , 95% CI[.11, .34]), but not sexual desire three months later. Partners who endorsed engaging in sex for less controlled reasons across the 21-day period reported greater relationship satisfaction ( $b = .12$ ,  $SE = .08$ ,  $t(233.76) = 2.29$ ,  $p = .023$ , 95% CI[.02, .22]), but not sexual desire or sexual satisfaction at follow-up, although this latter effect trended in a positive direction ( $b = .11$ ,  $SE = .06$ ,  $t(238.93) = 1.95$ ,  $p = .052$ , 95% CI[.00, .23]), but not sexual desire at follow-up.

Controlled reasons for engaging in sex during the 21-day period also significantly accounted for the associations between unmitigated sexual communion and satisfaction at follow-up for both partners (see Table 5 for total, direct, and indirect effects). People higher in unmitigated sexual communion endorsed more controlled reasons for engaging in sex across the three weeks and, in turn, reported lower sexual satisfaction and both partners reported lower relationship satisfaction, but not sexual desire three months later. Partners who endorsed engaging in sex for more controlled reasons during the daily period reported lower sexual satisfaction and both partners reported lower relationship satisfaction at follow-up.

In sum, Study 2 replicated and extended the cross-sectional and dyadic findings from Study 1 to show that people higher in sexual communal strength and their partners reported greater satisfaction and desire over time because they endorsed engaging in sex for more autonomous and less controlled reasons during the 21-day-period, whereas people higher in unmitigated sexual communion and their partners reported lower satisfaction over time because they reported being sexually motivated for more controlled reasons. The mediating role of controlled reasons for engaging in sex on satisfaction extended to partners of those higher in sexual communal and partners higher in unmitigated sexual communion over time. Consistent with Study 1, on days when partners endorsed more controlled reasons for engaging in sex, they reported greater daily sexual desire; however, this effect did not replicate over time.



**Table 5.** Total, direct and indirect effects in Study 2.

Effects	Daily autonomous reasons	Daily controlled reasons	Actor's follow-up relationship satisfaction	Partner's follow-up relationship satisfaction	Actor's follow-up sexual satisfaction	Partner's follow-up sexual satisfaction	Actor's Follow-up sexual desire	Partner's follow-up sexual desire
<b>Sexual Communal Strength</b> (effects mediated by actor's reasons)								
Total Effect	.32***(.08)	-.58***(.10)	.14 <sup>a</sup> (.08)	.13(.08)	.11(.10)	.26**(.10)	.11(.11)	.01(.10)
Direct Effect	—	—	.07(.19)	.04(.10)	.00(.11)	.12(.11)	.04(.12)	-.04(.11)
Indirect Effect (Autonomous) <sub>1</sub>	—	—	[-.04, .04]	[-.02, .01]	<b>[.00, .11]</b>	[-.03, .02]	<b>[.00, .12]</b>	[-.02, .01]
Indirect Effect (Controlled) <sub>2</sub>	—	—	<b>[.02, .15]</b>	<b>[.00, .07]</b>	<b>[.06, .22]</b>	[-.00, .07]	[-.04, .10]	[-.02, .05]
<b>Sexual Communal Strength</b> (effects mediated by partner's reasons)								
Total Effect	-.05(.08)	-.22*(.10)	.14 <sup>a</sup> (.08)	.13(.08)	.11(.10)	.26**(.10)	.11(.11)	.01(.10)
Direct Effect	—	—	.07(.19)	.04(.10)	.00(.11)	.12(.11)	.04(.12)	-.04(.11)
Indirect Effect (Autonomous) <sub>1</sub>	—	—	[-.02, .06]	[-.01, .01]	[-.01, .09]	[-.04, .02]	[-.04, .06]	[-.04, .02]
Indirect Effect (Controlled) <sub>2</sub>	—	—	<b>[.01, .14]</b>	<b>[.00, .08]</b>	<b>[.00, .14]</b>	<b>[.01, .11]</b>	[-.04, .11]	[-.02, .05]
<b>Unmitigated Sexual Communion</b> (effects mediated by actor's reasons)								
Total Effect	-.09(.06)	.37***(.08)	-.01(.06)	-.05(.06)	-.04(.07)	-.08(.07)	-.01(.07)	-.00(.07)
Direct Effect	—	—	.06(.07)	.02(.07)	.07(.08)	.05(.08)	.05(.08)	.02(.08)
Indirect Effect (Autonomous) <sub>1</sub>	—	—	[-.02, .02]	[-.01, .03]	[-.04, .01]	[-.00, .05]	[-.05, .01]	[-.02, .03]
Indirect Effect (Controlled) <sub>2</sub>	—	—	<b>[-.10, -.01]</b>	<b>[-.05, -.00]</b>	<b>[-.14, -.03]</b>	[-.05, .00]	[-.07, .03]	[-.04, .10]
<b>Unmitigated Sexual Communion</b> (effects mediated by partner's reasons)								
Total Effect	.13(.06)	.18*(.08)	-.01(.06)	-.05(.06)	-.04(.07)	-.08(.07)	-.01(.07)	-.00(.07)
Direct Effect	—	—	.06(.07)	.02(.07)	.07(.08)	.05(.08)	.05(.08)	.02(.08)
Indirect Effect (Autonomous) <sub>1</sub>	—	—	[-.03, .01]	[-.02, .02]	[-.04, .01]	[-.00, .05]	[-.02, .02]	[-.00, .06]
Indirect Effect (Controlled) <sub>2</sub>	—	—	<b>[-.09, -.01]</b>	<b>[-.06, -.00]</b>	[-.09, .00]	<b>[-.08, -.00]</b>	[-.07, .02]	[-.04, .01]

Numbers outside parentheses are unstandardized coefficients; numbers inside parentheses are SEs; numbers inside brackets are upper and lower limits of 95% confidence intervals from Monte Carlo Method for Assessing Mediation (MCMAM) mediation analyses. Dyads in these analyses are indistinguishable and actor and partner effects are tested in the same model; therefore, the total and direct effects are the same for the actor and partner mediation models. Baseline relationship satisfaction, sexual satisfaction and sexual desire are controlled for in the mediation models. Indirect effects of baseline sexual communal strength/sexual unmitigated communion → daily autonomous reasons for engaging in sex → follow-up relationship satisfaction/sexual satisfaction/sexual desire. Indirect effects of sexual communal strength/sexual unmitigated communion → daily controlled reasons for engaging in sex → follow-up relationship satisfaction/sexual satisfaction/sexual desire.

Significant indirect effects are bolded.

\* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $a = .09$ .

## General Discussion

Being motivated to meet a partner's needs is central to maintaining satisfaction and desire in relationships – especially in the sexual domain in which partners are more likely to rely on each other for sexual need fulfillment – but only when partner responsiveness does not come at the expense of attending to one's own needs. In two dyadic studies, we tested whether engaging in sex for self-determined reasons explains why people higher in sexual communal strength and unmitigated sexual communion and their partners fundamentally differ in their satisfaction and desire. We found that people higher in sexual communal strength endorsed more autonomous and less controlled reasons for engaging in sex and, in turn, reported greater overall satisfaction and desire, in addition to reporting greater satisfaction and desire three months later. In contrast, people higher in unmitigated sexual communion who endorsed engaging in sex for more controlled reasons, in turn, reported lower overall satisfaction and desire, and felt less satisfied over time.

The findings extended to partners as well in both studies. People higher in sexual communal strength had partners who felt less pressured or obligated to have sex, which accounted for both partners feeling more satisfied overall and over time. Unique to Study 2, partners of people higher in unmitigated sexual communion also endorsed more controlled reasons for engaging in sex across the 21-day period and, in turn, experienced lower satisfaction three months later.

Interestingly, people higher in sexual communal strength whose partners endorsed engaging in sex for less controlled reasons reported *lower* sexual desire overall in Study 1, which was the opposite of our predicted direction. The daily diary analyses in Study 2 further revealed that on days when partners endorsed being sexually motivated for more controlled reasons, people reported greater sexual desire during the 21-day-period. It is possible these potential indirect effects could be construed in the opposite direction instead; if one partner has lower desire, the other partner may feel less pressured to engage in sex, drawing on their communal motivation to meet their partner's sexual needs despite their lack of interest. It may be equally possible if one partner has higher sexual desire, the other partner feels more sexual pressure or obligation and, in turn, is less motivated to meet a partner's sexual needs. The longitudinal analyses in Study 2, which provided more appropriate tests of directionality, suggested that the mediating effect of a partners' controlled reasons on sexual desire did not replicate over time, but did for satisfaction, which appears to more robust across both studies.

## Theoretical Contributions and Implications

The current research is the first to our knowledge to integrate theories of communal motivation (Clark & Mills, 2012; Helgeson & Fritz, 1999) and self-determination theory (Ryan & Deci, 2017) in the context of romantic relationships and sexuality. Although both sexual communal strength and

unmitigated sexual communion involve being motivated to meet a partner's sexual needs, a distinguishing feature between the two forms of sexual motivation is the extent to which people balance being responsive with asserting their own sexual needs in the relationship (Muise & Impett, 2016). The current findings suggest that self-determination theory provides a useful framework for explaining how partner responsiveness can be integrated with personal need fulfillment in the sexual domain. People higher in sexual communal strength experienced greater satisfaction and desire because they genuinely chose to engage in sex with their partner rather than feeling compelled to engage in sex. Being motivated to meet a partner's sexual needs is internalized among those higher in sexual communal strength as their responsiveness more closely aligns with their "true" sense of self (Deci et al., 1994). In contrast, people higher in unmitigated sexual communion experienced poorer sexual and relationship quality because they felt pressured and obligated to have sex. Responsiveness that entails self-sacrificing is more inauthentic and externalized as people higher in unmitigated communion have their self-worth contingent on whether their partner's expectations are met (Knee et al., 2013).

The current studies further replicated and extended the existing literatures on sexual communal motivation and self-determined reasons for engaging in sex. Although previous work on sexual communal motivation has examined sexual goals and attentional cues during sex as mechanisms in daily experiences of couples (Le et al., 2018; Muise et al., 2013), these are the first studies to identify the motivational processes distinguishing sexual communal strength and unmitigated sexual communion over time in a longitudinal design, which is more suitable for testing mediation (Preacher, 2015). Additionally, the existing research on self-determined reasons for engaging in sex has primarily drawn on cross-sectional and undergraduate samples of people in dating relationships (Gravel et al., 2016), whereas the current work applied dyadic and longitudinal methods to generalize these findings to community couples in long-term and committed relationships. Another unique contribution of the current research is that the mediating effects of self-determined reasons for engaging in sex extended to partners.

Although past work has demonstrated that partners of people higher in sexual communal strength experience greater satisfaction and desire (Impett et al., 2020), our studies are the first to show sexual communal strength influences a partner's motivational processes as well. Partners of people higher in sexual communal strength found the lack of pressure or obligation to have sex to be particularly satisfying and experienced more desire because they felt encouraged to pursue sex for pleasure and meaning. These findings align with previous research showing that people higher in sexual communal strength are perceived as more responsive by their partners and, in turn, the partner reports greater satisfaction (Muise & Impett, 2015). One central aspect of partner responsiveness involves encouraging self-expression in a relationship through understanding, validating, and caring for a partner (Reis et al., 2004). In this sense, sexual communal strength may draw on elements of autonomy support in romantic

relationships (Deci et al., 2006; Knee et al., 2013). In the context of sexuality, people with partners who are communally motivated to meet their sexual needs may feel more self-determined because their opinions and values related to sex are respected and their sense of sexual agency and choice is encouraged by their partner.

Partners of people higher in unmitigated sexual communion, in contrast, experienced more pressure and obligation to engage in sex, which left both partners feeling less satisfied. This may stem from partners being unsure of how to meet the needs of people higher in unmitigated communion who are known to be uncomfortable with self-disclosure and receiving support from others (Helgeson & Fritz, 1999). The resistance to being cared for by a partner could be construed as a way people higher in unmitigated communion exercise control in their relationship by allowing their partner to depend on them but not allowing themselves to depend on their partner (Helgeson & Fritz, 1999). Despite being motivated to meet a partner's sexual needs, people higher in unmitigated sexual communion restrict a partner from being responsive in return, which undermines rather than supports a partner's sense of autonomy.

### **Limitations and Future Directions**

The present research is not without its limitations. First, the studies relied on self-report measures and people may be motivated to present their relationship and sex lives in a positive light, wanting to appear more sexually communal and autonomous rather than unmitigated and controlled. To account for this concern, we simultaneously controlled for sexual communal strength and unmitigated sexual communion as well as autonomous and controlled reasons for engaging in sex across all the mediational models tested. Doing so accounts for the shared variance and distinguishes the unique effects of both positively and negatively salient aspects of sexual motivation in relationships. These concerns can be further addressed by experimentally manipulating sexual communal motivation and self-determined reasons for engaging in sex to account for confounding factors and establish causal conclusions. Past experimental work has demonstrated that it is possible to increase sexual communal strength in hypothetical scenarios (Day et al., 2015) and perceive a partner as more sexually responsive (Balzarini et al., 2021), as well as foster greater autonomous motivation to help and accommodate in relationships (Kluwer et al., 2020; Weinstein & Ryan, 2010).

Although non-contingent responsiveness (i.e., meeting a partner's needs without the expectation of direct reciprocity) is an aspect of communal giving (Clark & Mills, 2012), the measure of sexual communal strength used in the current study does not fully capture this aspect and instead assesses a person's motivation to be responsive to their partner's sexual needs. Future research may want to consider a multifaceted measure of sexual communal strength that fully captures the non-contingent aspect of communal giving to better test its role in shaping sexual and relationship satisfaction. In addition, the current research was focused on contrasting different types

of motivations for sexual responsiveness (sexual communal strength and unmitigated sexual communion) and did not consider more self-focused sexual motivation. In their original theorizing of general and unmitigated forms of communion, Helgeson and Fritz (1999) contrasted communion with agency, suggesting that agency could also be unmitigated. Existing work on self-focused sexual motives demonstrates that agentic motivations can have divergent associations with sexual and relationship satisfaction, with high sexual assertiveness being associated with higher sexual and relationship quality (e.g., Greene & Faulkner, 2005; Haavio-Mannila & Kontula, 1997), whereas sexual narcissism, which also taps into high sexual agency, is largely associated with lower satisfaction (e.g., Widman & McNulty, 2010). However, to our knowledge agentic and communal motivation in the sexual domain have not been compared. Future research may explore how motivations related to sexual responsiveness and sexual agency are differentially associated with sexual and relationship satisfaction.

Another important consideration with the current work is the generalizability of the findings as the studies predominantly consisted of White and cisgender participants in mixed-gender relationships. Given that the phenomenological experience of sexual motivation can be expressed differently for racial and sexual minorities (Frost et al., 2014), future research should aim to extend these findings with more diverse samples of couples. Participants also reported being in fairly satisfied relationships and their experiences may differ from couples who are less satisfied or those coping with a sexual issue. Building on previous work demonstrating the costs and benefits of sexual communal motivation among couples in which a woman experiences clinically low levels of sexual desire or pain during sex (Bockaj et al., 2019; Hogue et al., 2019; Muise et al., 2018, 2019), future research could examine self-determined reasons for engaging in sex in the context of couples coping with sexual dysfunction who may particularly struggle to derive pleasure and value from having sex and instead feel sexually pressured and obligated. Sexual motivation is a major catalyst for change that can be targeted in couples and sex therapy (Hall & Binik, 2020; Hawton & Catalan, 1986), such that partners can experience benefits by drawing on their motivation to be responsive to each other's sexual needs while navigating a sexual issue. Clinical interventions might draw on cognitive-behavioral techniques promoting more autonomous and less controlled reasons for engaging in sex to bolster sexual communal strength while keeping unmitigated sexual communion in check to help couples foster greater relationship and sexual quality.

The replication of these results across different relationship types and contexts is another avenue for future research. Although the current studies examined sexual motivation among primarily monogamous couples, past work has shown that people in consensually non-monogamous relationships also experience greater sexual need fulfillment as well as relationship and sexual satisfaction with their primary and secondary partners when they are more sexually communal (Muise et al., 2019) and self-determined (Wood et al., 2018, 2021). Future work could examine whether having a primary partner who is higher in sexual communal strength or unmitigated sexual communion influences the extent to which one feels

sexually autonomous or controlled in another, concurrent relationship, and in turn, the corresponding associations with relational and sexual outcomes across relationships. In addition, given that our samples primarily consisted of long-term couples, it would also be worthwhile to apply this work to the early stages of a romantic relationship and determine how communal and self-determined forms of sexual motivation develop or evolve over the course of a relationship, with implications for the trajectories of their sexual and relationship well-being. Lastly, the dynamic between sexual communal motivation and self-determined reasons for engaging in sex may also be particularly salient during common situations in relationships that elicit sexual compliance (Impett & Peplau, 2003), such as rejecting a partner's sexual advances (Kim et al., 2020; Muise et al., 2017) or engaging in sex with a partner despite not being in the mood (Day et al., 2015).

## Conclusion

By integrating communal and self-determined theories of sexual motivation in romantic relationships, the current research identified autonomous and controlled reasons for engaging in sex as mechanisms accounting for the divergent associations between sexual communal strength and unmitigated sexual communion with satisfaction and desire. The findings highlight that genuinely choosing to be responsive to a partner's sexual needs offers relationship and sexual benefits for both partners, whereas feeling compelled to be responsive to a partner's sexual needs by sacrificing one's own needs can backfire with costs to both partner's relationship and sexual well-being

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

The work was supported by the Canadian Institutes of Health Research (New Investigator Award awarded to Natalie O. Rosen) and the Social Sciences and Humanities Research Council of Canada (Canada Graduate Scholarship awarded to Ariel Shoikhedbrod; Insight Grant awarded to Amy Muise and Emily A. Impett; Insight Grant awarded to Cheryl Harasymchuk, Emily A. Impett, and Amy Muise; Postdoctoral Fellowship awarded to Serena Corsini-Munt).

## ORCID

Ariel Shoikhedbrod  <http://orcid.org/0000-0002-5295-7838>  
 Natalie O. Rosen  <http://orcid.org/0000-0002-4525-0770>  
 Serena Corsini-Munt  <http://orcid.org/0000-0001-5552-4387>  
 Cheryl Harasymchuk  <http://orcid.org/0000-0002-9872-0035>  
 Emily A. Impett  <http://orcid.org/0000-0003-3348-7524>  
 Amy Muise  <http://orcid.org/0000-0002-9000-4106>

## References

- Balzarini, R. N., Muise, A., Dobson, K., Kohut, T., Raposo, S., & Campbell, L. (2021). The detriments of unmet sexual ideals and buffering effect of sexual communal strength. *Journal of Personality and*



- Social Psychology*, 120(6), 1521–1550. <https://doi.org/10.1037/pspi0000323>
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497–529. <https://doi.org/10.1037/0033-2909.117.3.497>
- Blanchflower, D. G., & Oswald, A. J. (2004). Money, sex and happiness: An empirical study. *The Scandinavian Journal of Economics*, 106(3), 393–415. <https://doi.org/10.1111/j.0347-0520.2004.00369.x>
- Bockaj, A., Rosen, N. O., & Muise, A. (2019). Sexual motivation in couples coping with female sexual interest/arousal disorder: A comparison with control couples. *Journal of Sex & Marital Therapy*, 45(8), 796–808. <https://doi.org/10.1080/0092623X.2019.1623356>
- Brunell, A. B., & Webster, G. D. (2013). Self-determination and sexual experience in dating relationships. *Personality & Social Psychology Bulletin*, 39(7), 970–987. <https://doi.org/10.1177/0146167213485442>
- Clark, M. S., & Mills, J. R. (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). Sage Publications. Ltd. <https://doi.org/10.1111/10.4135/9781446249222.n38>
- Cook, W. L., & Kenny, D. A. (2005). The actor–partner interdependence model: A model of bidirectional effects in developmental studies. *International Journal of Behavioral Development*, 29(2), 101–109. <https://doi.org/10.1080/0165025044000405>
- 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 & Social Psychology Bulletin*, 41(6), 791–804. <https://doi.org/10.1177/0146167215580129>
- Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality*, 62(1), 119–142. <https://doi.org/10.1111/j.1467-6494.1994.tb00797.x>
- Deci, E. L., La Guardia, J. G., Moller, A. C., Scheiner, M. J., & Ryan, R. M. (2006). On the benefits of giving as well as receiving autonomy support: Mutuality in close friendships. *Personality & Social Psychology Bulletin*, 32(3), 313–327. <https://doi.org/10.1177/0146167205282148>
- Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, 19(2), 109–134. [https://doi.org/10.1016/0092-6566\(85\)90023-6](https://doi.org/10.1016/0092-6566(85)90023-6)
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. [https://doi.org/10.1111/10.1207/S15327965PLI1104\\_01](https://doi.org/10.1111/10.1207/S15327965PLI1104_01)
- Diamond, L. M., & Huebner, D. M. (2012). Is good sex good for you? Rethinking sexuality and health. *Social and Personality Psychology Compass*, 6(1), 54–69. <https://doi.org/10.1111/j.1751-9004.2011.00408.x>
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G\* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. doi:10.3758/bf03193146
- Fletcher, G. J., Simpson, J. A., & Thomas, G. (2000). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality & Social Psychology Bulletin*, 26(3), 340–354. <https://doi.org/10.1177/0146167200265007>
- Fritz, H. L., & Helgeson, V. S. (1998). Distinctions of unmitigated communion from communion: Self-neglect and overinvolvement with others. *Journal of Personality and Social Psychology*, 75(1), 121–140. <https://doi.org/10.1111/10.1037/0022-3514.75.1.121>
- Frost, D. M., McClelland, S. I., Clark, J. B., & Boylan, E. A. (2014). Phenomenological research methods in the psychological study of sexuality. In D. L. Tolman, M. Diamond, J. A. Bauermeister, W. H. George, J. G. Pfaus, & L. M. Ward (Eds.), *APA handbook of sexuality and psychology, vol. 1. Person-based approaches* (pp. 121–141). American Psychological Association. doi:10.1111/10.1037/14193-006
- Funk, J. L., & Rogge, R. D. (2007). Testing the ruler with item response theory: Increasing precision of measurement for relationship satisfaction with the couples satisfaction index. *Journal of Family Psychology*, 21(4), 572–583. <https://doi.org/10.1037/0893-3200.21.4.572>
- Gravel, E. E., Pelletier, L. G., & Reissing, E. D. (2016). “Doing it” for the right reasons: Validation of a measurement of intrinsic motivation, extrinsic motivation, and amotivation for sexual relationships. *Personality and Individual Differences*, 92, 164–173. <https://doi.org/10.1016/j.paid.2015.12.015>
- Gravel, E. E., Reissing, E. D., & Pelletier, L. G. (2018). Global, relational, and sexual motivation: A test of hierarchical versus heterarchical effects on well-being. *Journal of Happiness Studies*, 20(7), 2269–2289. <https://doi.org/10.1007/s10902-018-0047-3>
- Gravel, E. E., Reissing, E. D., & Pelletier, L. G. (2020). The ebb and flow of sexual well-being: The contributions of basic psychological needs and autonomous and controlled sexual motivation to daily variations in sexual well-being. *Journal of Social and Personal Relationships*, 37(7), 2286–2306. <https://doi.org/10.1177/0265407520921558>
- Greene, K., & Faulkner, S. L. (2005). Gender, belief in the sexual double standard, and sexual talk in heterosexual dating relationships. *Sex Roles*, 53(3), 239–251. <https://doi.org/10.1007/s11199-005-5682-6>
- Haavio-Mannila, E., & Kontula, O. (1997). Correlates of increased sexual satisfaction. *Archives of Sexual Behavior*, 26(4), 399–419. <https://doi.org/10.1111/10.1023/A:1024591318836>
- Hall, K. S., & Binik, Y. M. (2020). *Principles and practice of sex therapy*. Guilford Publications.
- Hawton, K., & Catalan, J. (1986). Prognostic factors in sex therapy. *Behaviour Research and Therapy*, 24(4), 377–385. [https://doi.org/10.1016/0005-7967\(86\)90002-1](https://doi.org/10.1016/0005-7967(86)90002-1)
- Helgeson, V. S., & Fritz, H. L. (1999). Unmitigated agency and unmitigated communion: Distinctions from agency and communion. *Journal of Research in Personality*, 33(2), 131–158. <https://doi.org/10.1006/jrpe.1999.2241>
- Hogue, J. V., Rosen, N. O., Bockaj, A., Impett, E. A., Muise, A., & Velten, J. (2019). Sexual communal motivation in couples coping with low sexual interest/arousal: Associations with sexual well-being and sexual goals. *PLoS One*, 14(7), e0219768. <https://doi.org/10.1371/journal.pone.0219768>
- Holt-Lunstad, J., Smith, T. B., Layton, J. B., & Brayne, C. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Medicine*, 7(7), e1000316–e1000316. <https://doi.org/10.1371/journal.pmed.1000316>
- Impett, E. A., Kim, J. J., & Muise, A. (2020). A communal approach to sexual need responsiveness in romantic relationships. *European Review of Social Psychology*, 31(1), 287–318. <https://doi.org/10.1080/10463283.2020.1796079>
- 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(8), 2455–2473. <https://doi.org/10.1177/0265407518787349>
- Impett, E. A., & Peplau, L. A. (2003). Sexual compliance: Gender, motivational, and relationship perspectives. *Journal of Sex Research*, 40(1), 87–100. <https://doi.org/10.1080/00224490309552169>
- Jenkins, S. S. (2003). *Gender and self-determination in sexual motivation*. University of Rochester. Department of Clinical and Social Sciences in Psychology (Available from ProQuest Dissertations and Theses Database. (UMI No. 3114928).
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *The analysis of dyadic data*. Guilford Press.
- Kim, Y., Carver, C. S., Deci, E. L., & Kasser, T. (2008). Adult attachment and psychological well-being in cancer caregivers: The mediational role of spouses’ motives for caregiving. *Health Psychology*, 27(2S), S144–S154. [https://doi.org/10.1037/0278-6133.27.2\(Suppl.\).S144](https://doi.org/10.1037/0278-6133.27.2(Suppl.).S144)
- Kim, J. J., Muise, A., Sakaluk, J. K., Rosen, N. O., & Impett, E. A. (2020). When tonight is not the night: Sexual rejection behaviors and satisfaction in romantic relationships. *Personality & Social Psychology Bulletin*, 46(10), 1476–1490. <https://doi.org/10.1177/0146167220907469>
- Kindt, S., Vansteenkiste, M., Loeys, T., & Goubert, L. (2016). Helping motivation and well-being of chronic pain couples: A daily diary study. *Pain*, 157(7), 1551–1562. <https://doi.org/10.1097/j.pain.0000000000000550>
- Kluwer, E. S., Karremans, J. C., Riedijk, L., & Knee, C. R. (2020). Autonomy in relatedness: How need fulfillment interacts in close



- relationships. *Personality & Social Psychology Bulletin*, 46(4), 603–616. <https://doi.org/10.1177/0146167219867964>
- Knee, C. R., Hadden, B. W., Porter, B., & Rodriguez, L. M. (2013). Self-determination theory and romantic relationship processes. *Personality and Social Psychology Review*, 17(4), 307–324. <https://doi.org/10.1177/1088868313498000>
- Lawrance, K. A., & Byers, E. S. (1995). Sexual satisfaction in long-term heterosexual relationships: The interpersonal exchange model of sexual satisfaction. *Personal Relationships*, 2(4), 267–285. <https://doi.org/10.1111/j.1475-6811.1995.tb00092.x>
- Ledermann, T., Macho, S., & Kenny, D. A. (2011). Assessing mediation in dyadic data using the actor-partner interdependence model. *Structural Equation Modeling: A Multidisciplinary Journal*, 18(4), 595–612. <https://doi.org/10.1080/10705511.2011.607099>
- Le, B. M., Impett, E. A., Lemay, E. P., Muise, A., & Tskhay, K. O. (2018). Communal motivation and well-being in interpersonal relationships: An integrative review and meta-analysis. *Psychological Bulletin*, 144(1), 1–25. <https://doi.org/10.1037/bul0000133>
- Mark, K. P., & Murray, S. H. (2012). Gender differences in desire discrepancy as a predictor of sexual and relationship satisfaction in a college sample of heterosexual romantic relationships. *Journal of Sex & Marital Therapy*, 38(2), 198–215. <https://doi.org/10.1080/0092623X.2011.606877>
- Mills, J., Clark, M. S., Ford, T. E., & Johnson, M. (2004). Measurement of communal strength. *Personal Relationships*, 11(2), 213–230. <https://doi.org/10.1111/j.1475-6811.2004.00079.x>
- Moyano, N., Vallejo-Medina, P., & Sierra, J. C. (2017). Sexual desire inventory: Two or three dimensions? *Journal of Sex Research*, 54(1), 105–116. <https://doi.org/10.1080/00224499.2015.1109581>
- Muise, A., Bergeron, S., Impett, E. A., Delisle, I., & 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(2), 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(8), 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(3), 267–273. <https://doi.org/10.1177/1948550612457185>
- Muise, A., Kim, J. J., Impett, E. A., & Rosen, N. O. (2017). Understanding when a partner is not in the mood: Sexual communal strength in couples transitioning to parenthood. *Archives of Sexual Behavior*, 46(7), 1993–2006. <https://doi.org/10.1007/s10508-016-0920-2>
- Muise, A., Laughton, A. K., Moors, A., & Impett, E. A. (2019). Sexual need fulfillment and satisfaction in consensually nonmonogamous relationships. *Journal of Social and Personal Relationships*, 36(7), 1917–1938. <https://doi.org/10.1177/0265407518774638>
- Preacher, K. J. (2015). Advances in mediation analysis: A survey and synthesis of new developments. *Annual Review of Psychology*, 66(1), 825–852. <https://doi.org/10.1146/annurev-psych-010814-015258>
- Raposo, S., Impett, E. A., & Muise, A. (2020). Avoidantly attached individuals are more exchange-oriented and less communal in the bedroom. *Archives of Sexual Behavior*, 49(8), 2863–2881. <https://doi.org/10.1111/10.1007/s10508-020-01813-9>
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., & Congdon, R. T. (2004). *HLM 6: Hierarchical linear and nonlinear modeling*. Scientific Software International.
- Reis, H. T., Clark, M. S., & Holmes, J. G. (2004). Perceived partner responsiveness as an organizing construct in the study of intimacy and closeness. In D. J. Mashek & A. P. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 201–225). Erlbaum.
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. The Guilford Press. <https://doi.org/10.1521/978.14625/28806>
- Selig, J. P., & Preacher, K. J. (2008). Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects [computer software].
- Smith, C. V. (2007). In pursuit of 'good' sex: Self-determination and the sexual experience. *Journal of Social and Personal Relationships*, 24(1), 69–85. <https://doi.org/10.1177/0265407507072589>
- Spector, I. P., Carey, M. P., & Steinberg, L. (1996). The Sexual Desire Inventory: Development, factor structure, and evidence of reliability. *Journal of Sex & Marital Therapy*, 22(3), 175–190. doi:10.1111/10.1080/00926239608414655.
- Sprecher, S. (1998). Social exchange theories and sexuality. *Journal of Sex Research*, 35(1), 32–43. <https://doi.org/10.1111/10.1080/00224499809551915>
- Vrangalova, Z. (2015). Does casual sex harm college students' well-being? A longitudinal investigation of the role of motivation. *Archives of Sexual Behavior*, 44(4), 945–959. <https://doi.org/10.1007/s10508-013-0255-1>
- Weinstein, N., & Ryan, R. M. (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *Journal of Personality and Social Psychology*, 98(2), 222–244. <https://doi.org/10.1037/a0016984>
- Widman, L., & McNulty, J. K. (2010). Sexual narcissism and the perpetration of sexual aggression. *Archives of Sexual Behavior*, 39(4), 926–939. <https://doi.org/10.1007/s10508-008-9461-7>
- Wiley, M., & Wiley, J. F. (2019). Glms: Introduction. In: *Advanced R statistical programming and data models*. Apress. [https://doi.org/10.1111/10.1007/978-1-4842-2872-2\\_10](https://doi.org/10.1111/10.1007/978-1-4842-2872-2_10)
- Wongsomboon, V., Webster, G. D., & Burleson, M. H. (2022). It's the "why": Links between (non) autonomous sexual motives, sexual assertiveness, and women's orgasm in casual sex. *Archives of Sexual Behavior*, 51(1), 621–632. <https://doi.org/10.1007/s10508-021-02103-8>
- Wood, J., Desmarais, S., Burleigh, T., & Milhausen, R. (2018). Reasons for sex and relational outcomes in consensually nonmonogamous and monogamous relationships: A self-determination theory approach. *Journal of Social and Personal Relationships*, 35(4), 632–654. <https://doi.org/10.1111/10.1177/0265407517743082>
- Wood, J., Quinn-Nilas, C., Milhausen, R., Desmarais, S., Muise, A., Sakaluk, J., & Morgan, E. (2021). A dyadic examination of self-determined sexual motives, need fulfillment, and relational outcomes among consensually non-monogamous partners. *PLoS One*, 16(2), e0247001. <https://doi.org/10.1371/journal.pone.0247001>
- Zhang, Z., Zyphur, M. J., & Preacher, K. J. (2009). Testing multilevel mediation using hierarchical linear models: Problems and solutions. *Organizational Research Methods*, 12(4), 695–719. <https://doi.org/10.1177/1094428108327450>