6-10-2020 11:00 AM

# Recognizing Relational Boredom and Coping With It Through the Introduction of Novelty

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Psychology

# Abstract

Relational boredom is a pervasive and potentially damaging relationship experience, but accurately perceiving these experiences in one's partner may offer the opportunity for corrective action. The current studies examine whether romantic partners are accurate and biased in their perceptions of each other's relational boredom (Studies 1-3), how these (in)accurate perceptions are associated with relationship quality (Studies 1-3), and the best practices for incorporating relationship maintenance behaviours to cope with the knowledge of one's partner's boredom (Studies 4-6). Studies 1 and 2 examine romantic couples' accuracy, bias, and the consequences of these constructs on relationship quality cross-sectionally, while Study 3 examines these effects over time. Study 3 also examines whether accuracy and bias predict romantic partners' engagement in corrective action through common boredom coping behaviours. These studies demonstrate that romantic partners are fairly accurate in their perceptions of each other's relational boredom, although they tend to overestimate. In addition, accuracy and bias were consistently associated with both perceiver and partner relationship satisfaction, commitment, and trust. However, perceptions were not associated with later corrective action, indicating partners may benefit from information regarding how to effectively incorporate this corrective action into their relationships. Study 4 examines the best practices for how to incorporate novel sexual behaviours, examining whether certain types of incorporation tactics are perceived more positively than others. Findings indicate that greater use of direct-verbal initiation tactics are beneficial for relationships. Studies 5 and 6 examine the best practices for when to incorporate novel behaviours, determining what the normative timeline is for both novel sexual and nonsexual behaviours (Studies 5A and 5B) and whether there are perceived relational benefits associated with following this normative timeline (Study 6). Results demonstrate that opting not to follow the normative timeline for initiating novel nonsexual behaviours is perceived as detrimental to romantic relationships through increased negative affect and likelihood of breakup, but this was not the case for incorporating novel sexual behaviours. This research provides greater understanding of how romantic couples may effectively navigate one of romantic relationship's most prevalent detrimental relationship experiences in order to maintain the relationship and increase relationship quality.

## Keywords

Romantic relationships, relational boredom, sexuality, novelty

# Summary for Lay Audience

This research examines whether romantic partners are accurate and biased in their perceptions of each other's relational boredom (Studies 1-3), how these (in)accurate perceptions are associated with relationship quality (Studies 1-3), and the best practices for coping with knowing your partner is bored (Studies 4-6). Studies 1 and 2 examine romantic couples' accuracy, bias, and the consequences of these constructs on relationship quality at one time point, while Study 3 examines these effects over time. Study 3 also examines whether accuracy and bias predict romantic partners' engagement in common boredom coping behaviours. These studies demonstrate that romantic partners are fairly accurate in their perceptions of each other's relational boredom, although they tend to overestimate. In addition, accuracy and bias were consistently associated with both romantic partners' relationship satisfaction, commitment, and trust. However, perceptions were not associated with later boredom coping, indicating partners may benefit from information regarding how to effectively incorporate these coping behaviours into their relationships. Study 4 examines the best practices for how to incorporate novel sexual behaviours, examining whether certain types of incorporation tactics are seen as more positive than others. Findings indicate that greater use of direct-verbal initiation tactics are beneficial for relationships. Studies 5 and 6 examine the best practices for when to incorporate novel behaviours, determining what the normative timeline is for both novel sexual and nonsexual behaviours (Studies 5A and 5B) and whether there are perceived relational benefits associated with following this normative timeline (Study 6). Results demonstrate that opting not to follow the normative timeline for initiating novel nonsexual behaviours is perceived as bad for romantic relationships through increased negative emotions and likelihood of breakup, but this was not the case for incorporating novel sexual behaviours. This research provides greater understanding of how romantic couples may effectively navigate one of romantic relationship's most prevalent detrimental relationship experiences in order to maintain the relationship and increase relationship quality.

# Acknowledgments

I would like to thank my supervisor, Dr. Lorne Campbell, for supporting me and my research through both the Master's and Ph.D. programs at Western. The excitement with which you approach research and the freedom you encourage in the pursuit of various ideas has allowed me to explore my interests and find areas of research that I truly enjoy.

Thank you to my supervisory committee, Drs. Erin Heerey and Samantha Joel, as well as my dissertation examiners for your time and feedback, which will undoubtedly make improve the quality of this document.

To Dr. Sarah Stanton, thank you for helping me push through the final details this research, and for your unfailing positivity and support over the years.

I would also like to thank other (past and current) members of the Love Lab, Dr. Rhonda Balzarini, Dr. Taylor Kohut, Dr. Christian Hahn, Rebecca Koessler, and Nicolyn Charlot. You have all been so supportive while also challenging me to improve, and I am a better researcher for knowing you.

Thank you to the Social Sciences and Humanities Research Council of Canada, whose scholarship funding helped me pursue my research interests over the course of my Master's and Ph.D. degrees.

And finally, I wish to recognize my partner, family, and friends, who have provided me with unconditional love and support and made me believe this was possible.

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# Introduction

Despite my best efforts, over the course of reading this 100+ page document it is very likely that at some point you will experience boredom. Your attention may wander, you may skim a page and have to read it again, or perhaps you even "skip to the good parts" to find the information you deem most relevant to your needs. This does not necessarily speak to your character, or hopefully to the content of my dissertation, but rather to the nature of boredom itself. Boredom is both a pervasive and powerful human experience. Theories pertaining to state boredom have attributed it to a variety of factors, including properties of the environment (such as insufficient stimulation and external constraints; e.g. Cox, 1980; London et al., 1972; Mikulas & Vodanovich, 1993; Posner et al., 2005), a failure to regulate attention (Eastwood et al., 2012; C. D. Fisher, 1993; Leary et al., 1986; C. A. Smith & Ellsworth, 1985), as a signal of information regarding one's circumstances (Elpidorou, 2014, 2018), and as a combination of deficits in attention and meaning (Westgate & Wilson, 2018). In some cases, both recognizing and alleviating boredom may be as simple as realizing your attention has wandered and switching to a new task. But what do you do when what you are bored with is your romantic relationship? There are a variety of additional factors that need to be considered in this situation that may create difficulty in even recognizing the experience, let alone effectively alleviating it. In this research I examine the experience of relational boredom specifically, determining whether romantic partners are able to accurately recognize this experience in one another, and examine the best practices in attempting to alleviate this boredom through the introduction of novelty.

Engaging in satisfying and exciting romantic relationships is an important part of life satisfaction and emotional well-being (Lucas & Dyrenforth, 2006; Myers, 2000). However, maintaining a satisfying, fulfilling romantic relationship long-term is a task many couples struggle with. In fact, romantic couples face a number of challenges when attempting to maintain satisfying, long-term relationships. One of the more subtle and understudied challenges encountered by partners is *relational boredom*, which is the tendency for partners to feel "tired" of each other or the relationship, or to believe that the relationship is no longer stimulating (Harasymchuk & Fehr, 2010, 2012). According to the Emotion-in-relationships Model (ERM; Berscheid, 1983, 1986, 1991; Berscheid et al., 1984), as romantic partners get

to know each other they develop expectations for one another's behaviour, and it is the violation of one's expectations that generates intense emotion (e.g. receiving an unexpected gift, one's partner forgetting one's birthday for the first time after having been together for years, etc.). Boredom occurs as one's expectations are repeatedly met, and thus continually fail to induce intense emotion. Therefore, similar to experiences of boredom generally (e.g. Raffaelli et al., 2018), relational boredom is most commonly associated with low arousal, low pleasure feelings representing a lack of positive emotion (e.g., being unexcited, tired, depressed, or lonely), but is also associated with high arousal, low pleasure feelings (e.g., being frustrated, anxious, or restless; Harasymchuk & Fehr, 2010). Considering the negative feelings associated with relational boredom, it is perhaps unsurprising that boredom has been cited as a reason for relationship problems (McKenna, 1989; Reissman et al., 1993). Relational boredom has been linked to less investment and less satisfaction with one's romantic relationship (Gillen, 2013), a higher perceived quality of alternatives (Gillen, 2013), a greater willingness to engage in infidelity (Gillen et al., 2012; Weiser et al., 2014), and is a significant predictor of relationship dissolution (A. Aron & Aron, 1986; Gigy & Kelly, 1993).

Thus, to date researchers know quite a lot about experiences of relational boredom at the individual level. Intimate relationships, however, are inherently interdependent, meaning that the thoughts, feelings, and behaviors of one partner are informed by, and also influence, the thoughts, feelings, and behaviors of the other partner (see Kelley et al., 2003; Kelley & Thibaut, 1978). Due to this, insights into whether romantic partners accurately perceive one another's relational boredom may be an essential component to understanding boredom's impact on relationships. In three studies, I therefore examine whether romantic partners are able to accurately perceive one another's relational boredom experiences and how this (in)accuracy is associated with their relationship evaluations.

Like other relationship experiences, boredom conveys information (cf. Clore et al., 2001; Elpidorou, 2014), primarily that continuing the current course of action "as is" is neither fulfilling nor worthwhile (see Westgate, 2020). Several causes of relational boredom have been detailed in previous research, including a lack of novelty, lack of stimulation, and external causes such as work spillover or having a limited income (Harasymchuk & Fehr, 2010). It follows then, that the most common coping mechanisms romantic partners report

using to deal with knowledge of one's relational boredom are active, relationship-focused strategies geared towards increasing novelty, stimulation, and communication (Harasymchuk & Fehr, 2010). This is consistent with self-expansion theory (E. N. Aron & Aron, 1996), which proposes that people are driven to engage in novel and self-expanding behaviours, and doing so with one's romantic partner is associated with greater relationship satisfaction and less boredom (A. Aron et al., 2003; A. Aron & Fraley, 1999). According to the self-expansion model, close relationships are the primary source of self-expansion (A. Aron et al., 2013; A. Aron & Aron, 1986). Romantic partners in particular may provide opportunities for self-expansion, as they share their perspectives, identities and resources, and engage in unique and novel activities such as sharing a hobby or discovering new places together (Mattingly & Lewandowski, 2014). This serves an adaptive function and has been linked with positive relational outcomes such as higher relationship quality, satisfaction, intimacy, closeness, and commitment (A. Aron et al., 2000, 2013; Girme et al., 2014; Graham, 2008). One's self expansion also has the potential to influence one's partner's relationship outcomes, as past research has shown that greater actor self-expansion predicts greater partner relationship quality, even when controlling for the partner's own levels of self-expansion. Novelty in particular has been linked to a variety of relational benefits including increased sexual desire (Muise et al., 2019; Sims & Meana, 2010), which in turn is associated with higher relationship satisfaction over time (Muise et al., 2019).

Thus, a solution to the problem of how to deal with relational boredom knowledge has been put forth in the form of novel, self-expanding behaviours. However, recent research (Harasymchuk et al., 2017), in addition to one of the current studies, suggests that although people are aware that growth-enhancing behaviours (e.g. novelty) are a beneficial coping mechanism to combat relational boredom, these beliefs are not consistently translated into coping intentions or actual coping behaviours. However, specificity of the task was associated with greater behavioural intentions in this previous research (Harasymchuk et al., 2017), indicating that providing specific instructions on how to incorporate novelty into romantic relationships to cope with relational boredom knowledge may increase the likelihood it is actually used. Studies 4-6 therefore investigate the "best practices" in initiating novelty in romantic relationships.

In sum, what is currently lacking from the literature is an assessment of what specific processes related to relational boredom and novelty, over and above having higher or lower absolute levels, might be linked with relationship quality. That is, whether and how relational boredom is detected, interpreted, and relieved has the potential to influence relationship outcomes. As such, Studies 1-3 examine the interplay of directional bias (mean tendency to over- or underestimate) and tracking accuracy (accurately tracking the pattern of partners' responses) in partners' perceptions of each other's relational boredom, and how these perceptual processes are associated with partners' relationship quality. Studies 1 and 2 examine whether partners are aware of each other's relational boredom at one time point, while Study 3 examines whether partners can accurately track fluctuations in relational boredom across a 21-day diary study. Studies 4-6 then transition to examining the "best practices" in the incorporation of novelty into one's romantic relationship. In particular, Study 4 examines how the behaviours that romantic partners use to initiate new sexual behaviours are perceived by the partner who is receiving them, and their association with sexual satisfaction. Finally, I examine when various novel behaviours are typically incorporated into romantic relationships (Studies 5A and 5B), and the consequences of doing so outside of the typical trajectory of relationship events (Study 6).

# Chapter 1

## 1 Study 1

When examining experiences of boredom generally, previous research has focused on factors that contribute to boredom and how the individual's boredom is associated with potential consequences for themselves (e.g. Sharp et al., 2017; van Hooff & van Hooft, 2014). However, with regards to relational boredom specifically, additional factors need to be considered given that relationships with others are inherently interdependent. The individuals involved close relationships have the potential to directly impact one another's experiences, and according to interdependence theory (Kelley, 1979; Rusbult & Van Lange, 2003; Thibaut & Kelley, 1959), individuals' perceptions of their romantic partner's experiences are a critical component to understanding their later responses and relationship evaluations. Therefore, I will examine, for the first time, whether romantic partners' perceptions of each other's relational boredom are accurate or biased, and how these perceptions are associated with relationship evaluations.

In general, accurately perceiving a romantic partner's thoughts and feelings is associated with relationship benefits, such as greater satisfaction and stability (e.g., Kahn, 1970; Kenny & Acitelli, 2001; Noller, 1980; Noller & Ruzzene, 1991). However, accurately perceiving a partner's thoughts and feelings in relationship *threatening* situations is negatively correlated with satisfaction and stability (e.g., Ickes & Simpson, 1997; Sillars et al., 1984; Simpson et al., 1995). I proposed that attempting to intuit a partner's relational boredom represents a potentially threatening relationship context. To illustrate this point, imagine Derek and Meredith are a couple, and Meredith believes that Derek is bored with their relationship. These beliefs may lead Meredith to view Derek as more likely to end their relationship, which might heighten her concerns related to being rejected or hurt. The empathic accuracy model (Ickes & Simpson, 1997) proposes that in situations such as these—where accurate knowledge of a partner's feelings may threaten one's self-esteem, feelings towards one's partner, or feelings about one's relationship—people may be motivated to inaccurately perceive their partner's feelings. *Underestimating* a partner's boredom, then, is likely to be a self-protective reaction to a

potential relationship threat (i.e., knowing your partner is bored with your relationship). Thus, I predicted that, in general, perceivers would underestimate the degree to which their partner is bored with their relationship (i.e., demonstrate negative directional bias; Hypothesis 1).

However, according to risk regulation theory (Murray et al., 2006) protecting oneself only serves one of two innate drives. People also have a need for connectedness and belonging (Baumeister & Leary, 1995). These connections and their accompanied dependence on others then creates opportunities for painful rejection (Braiker & Kelley, 1979; Leary et al., 1998; Leary & Baumeister, 2000). Thus, the risk regulation system balances these needs by attempting to achieve the optimal levels of both low risk and high closeness (Murray et al., 2006). High levels of relational boredom have the potential to threaten the stability and happiness of a relationship (A. Aron & Aron, 1986), and thus partners should, to some extent, be attuned to each other's boredom in order to effectively assess the level of risk involved in continuing to pursue intimacy goals. Additionally, past research suggests that accurately understanding one's partner is important for the relationship (e.g., Fletcher & Kerr, 2010; Lackenbauer et al., 2010; Swann, 2012). Accurately tracking the pattern of features comprising one's partner's boredom may provide a balance between the need to protect oneself, and the need to accurately perceive one's partner (Murray et al., 2006). In other words, Derek should be motivated to correctly detect the pattern of features comprising Meredith's boredom because doing so not only will help him understand when he is not meeting Meredith's needs, but also may protect him from overly investing in a relationship that Meredith finds unfulfilling. I expected, therefore, that partners would accurately track each other's levels of relational boredom (Hypothesis 2).

In addition, close others are often similar in several domains (Kenny & Acitelli, 2001), and when making interpersonal judgments they may project their own feelings onto their perceptions of their partner. Relational boredom is likely one domain in which romantic partners are inherently similar to some degree; that is, the shared experiences partners have may be unlikely to be perceived as extremely boring by one partner and very exciting by the other. Therefore, if Meredith is bored with her relationship, she should

assume to some extent that Derek is as well. I predicted, then, that partners would assume similarity in their judgments of each other's relational boredom (Hypothesis 3).

Finally, perceivers' directional bias and ability to accurately track their partner's thoughts and feelings have been shown to be associated with other relationship outcomes (e.g., (Hammond & Overall, 2013; Muise et al., 2016; Overall & Hammond, 2013). Due to the self-protective function of underestimating a partner's relational boredom, and consistent with the concept of motivated inaccuracy (Ickes & Simpson, 1997), I hypothesized that negative directional bias (i.e., underestimation; Hypothesis 4) and high accuracy (Hypothesis 5) in judgments of relational boredom would be associated with higher relationship quality for the perceiver, characterized by higher relationship satisfaction, commitment, and trust. I also explored whether the relationship consequences of bias and accuracy differ for perceivers versus their partners.

## 1.1 Method

### 1.1.1 Participants

The original goal was to recruit 100 heterosexual romantic couples (200 individuals); when data collection was stopped, 84 couples had been recruited. There were four same-sex couples, which were removed from analyses because there were not enough to make meaningful comparisons between same-sex and opposite-sex couples. Thus, the final sample was 80 heterosexual romantic couples (160 individuals).[1] Couples were recruited from the University of Western Ontario and the surrounding London, Ontario community and participated in the study in exchange for CAD-$30.00 (CAD-$15.00 per member of the couple). Participants were 18-68 years of age ($M_{years}$ = 23.64, $SD_{years}$ = 8.21) and were in relationships lasting 1 month to 38 years ($M_{years}$ = 2.83, $SD_{years}$ = 5.33). Approximately 83% of couples reported that they were casually or exclusively dating and 17% reported being common-law, engaged, or married. A minority (36%) of couples were cohabiting.

[1] Prior but unrelated data from this sample was published in (Muise et al., 2016).

### 1.1.2 Procedure

Couples arrived at the lab together and provided written informed consent. Each partner then separately and privately completed a battery of questionnaires as part of a larger preregistered study on relationship processes in couples (see osf.io/jh2s5; Stanton & Campbell, 2017). After completing all study questionnaires, participants were debriefed, compensated, and dismissed.

### 1.1.3 Measures

#### 1.1.3.1 Relational boredom

Partners completed two versions of the Relational Boredom Scale (RBS; Harasymchuk & Fehr, 2012), a 15-item measure rated on a 7-point scale (1 = *Not at all true*, 7 = *Completely true*) in which they indicated how well a series of brief descriptors characterized their current romantic relationship (e.g., "dull"; "full of surprises," reverse-scored). In one version, they were asked to report their *own* levels of relational boredom, and in the second version they were to provide reports of their perceptions of their *partner's* levels of relational boredom. Each partner thus created a relational boredom profile for themselves ($\alpha = .89$, $M = 2.22$, $SD = .88$) as well as a profile for their perceptions of their partner ($\alpha = .89$, $M = 2.27$, $SD = .88$). The 15 relational boredom items were later treated as repeated measures within individuals; calculation of bias and accuracy in perceptions of relational boredom involves specifications of the Truth & Bias (T&B) Model (West & Kenny, 2011) detailed in the Results section below.

#### 1.1.3.2 Relationship Satisfaction

Satisfaction was assessed with the 7-item Relationship Assessment Scale (RAS; Hendrick, 1988) which is rated on a 5-point scale (1 = *Not at all/extremely poor*, 5 = *A great deal/extremely good*) and assesses how happy individuals are in their current romantic relationship (e.g., "How good is your relationship compared to most?"; $\alpha = .86$; $M = 4.30$, $SD = .59$).

#### 1.1.3.3 Trust

Trust was assessed with Rempel and colleague's (1985) 17-item measure rated on a 7-point scale (1 = *Strongly disagree,* 7 = *Strongly agree*) that taps the extent to which individuals believe their partner is dependable and honest (e.g., "My partner has proven to be trustworthy and I am willing to let him/her engage in activities which other partners find too threatening"; α = .85; $M$ = 5.76; $SD$ = .77).

#### 1.1.3.4 Commitment

Commitment was assessed with 7-items from the Investment Model Scale (IMS; Rusbult et al., 1998), which is rated on a 9-point scale (0 = *Do not agree at all*, 8 = *Agree completely*) and taps the extent to which individuals are dedicated to their romantic relationship (e.g., "I want our relationship to last for a very long time"; α = .89; $M$ = 6.85, $SD$ = 1.49).

## 1.2 Results

To test whether partners demonstrated directional bias, tracking accuracy, and assumed similarity in their perceptions of each other's relational boredom, I used West and Kenny's (2011) T&B Model of Judgment. My data have a nested structure, with perceivers' and partners' multiple ratings of relational boredom across the 15 items (level 1) nested within dyad (level 2). First, I examined the associations between the perceivers' judgments of their partner's relational boredom and the partners' actual reported relational boredom (the level 1 repeated measures variables) to test the degree to which judgments of the partner's relational boredom were biased and accurate. The basic equation is below:

$$J_{ij} = b_{0j} + b_{1j} \text{ (actual rating for relational boredom } i \text{ by perceiver } j\text{'s partner)} + b_{2j} \text{ (perceiver } j\text{'s own rating for relational boredom } i\text{)} + e_{ij},$$

where $J$ represents perceiver $j$'s judgment of their partner's rating for a particular relational boredom item ($i$); $b_0$ represents perceiver $j$'s intercept (directional bias); $b_1$ represents the effect of the actual rating for relational boredom $i$ by perceiver $j$'s *partner*

(tracking accuracy); $b_2$ represents the effect of perceiver *j*'s own rating for relational boredom *i* (assumed similarity); and $e_{ij}$ represents random error and all other unmeasured biases that influenced perceiver *j*'s judgments. The intercept and effect of partners' actual relational boredom ratings was averaged across perceivers (see also Kenny et al., 2006; Overall et al., 2012).

In accordance with the T&B Model (West & Kenny, 2011), the perceiver's judgments of their partner's relational boredom (the outcome variable) were centered on the partner's actual relational boredom ratings by subtracting the grand mean of all the partners' relational boredom ratings (i.e., mean across dyads) from the perceiver's judgments for each behavior. Centering in this way means that the intercept represents the difference between the mean of the partner's actual relational boredom rating and the mean of the perceiver's judgments of that relational boredom rating. The average of this coefficient across perceivers tests whether their judgments differed from the partner's actual ratings across all relational boredom items, as well as indicating the direction of that bias (i.e., directional bias). A negative average intercept indicates that perceivers generally *underestimate* partners' relational boredom, whereas a positive average intercept indicates that perceivers generally *overestimate* partners' relational boredom. The effect (slope) of the partner's actual relational boredom ratings on the perceiver's judgments of those ratings reflects tracking accuracy, and the effect (slope) of the perceiver's own relational boredom ratings on their judgments of their partner's relational boredom reflects assumed similarity. A positive slope indicates greater tracking accuracy or assumed similarity, respectively.

The results of this analysis are displayed in Table 1. Inconsistent with Hypothesis 1, overall, perceivers marginally *overestimated* their partner's relational boredom. However, consistent with Hypotheses 2 and 3, they also demonstrated tracking accuracy and projected their own levels of relational boredom (i.e., assumed similarity) when making judgments of their partner.

**Table 1.** Study 1 effects of directional bias, tracking accuracy, and assumed similarity on perceptions of the partner's boredom using the Truth and Bias Model of Judgment.

| | Truth and Bias Model Estimates | | | | |
|---|---|---|---|---|---|
| Perceptions of Partners' Boredom | *b* | *SE* | *t* | 95% CI | $R^2$ |
| Directional Bias | .07 | .04 | 1.85+ | -.01, .14 | .05 |
| Tracking Accuracy | .11 | .02 | 5.82*** | .07, .15 | .35 |
| Assumed Similarity | .63 | .03 | 22.35*** | .58, .69 | .86 |

*Note*. Approximate effect sizes were computed using the formula $R^2 = \frac{(df_{Numerator}/df_{Denominator})*F}{1+((df_{Numerator}/df_{Denominator})*F)}$ (L. J. Edwards et al., 2008; Page-Gould, 2016). Degrees of freedom ranged from 62.81 to 80.28.
+$p \leq .10$, ***$p \leq .001$

Next, to explore the consequences of directional bias and tracking accuracy in perceptions of relational boredom, I conducted analyses using multilevel polynomial regression with response surface analyses (RSA; Edwards, 2002) following guidelines from previous research (Barranti et al., 2017; Shanock et al., 2010). These analyses allowed me to test how the degree of agreement between partners (i.e., accuracy) and how the direction of disagreement (i.e., directional bias) was associated with relationship satisfaction, commitment, and trust. As per the guidelines outlined in Shanock et al. (2010), I centered the scores for perceptions of a partner's boredom and the partner's actual reported boredom on the midpoint of the scale (i.e., 4). Next, I created squared versions of these variables and a product term (perceptions of the partner's boredom × the partner's actual boredom) and entered all five variables as predictors (see Table 2). Note that although the results are presented in a single table, separate models were run for each outcome variable (relationship satisfaction, commitment, and trust).[2]

[2] I originally created a composite score for relationship quality, calculated by computing the average of the standardized scores for relationship satisfaction, commitment, and trust, rather than testing these components separately. However, I was later concerned about the validity of this composite score and opted to run separate analyses for each component for comparison. One result was inconsistent across the two types of outcomes (underestimation was associated with higher composite relationship quality for perceivers than overestimation, but this effect was consistently not significant across the separate components). I therefore present the analyses for the separate components. However, hypotheses for Study 2 were preregistered prior to this change, and thus a hypothesis is included based on the significant composite effect.

The output obtained from the polynomial regression models is not interpreted directly; rather, the output is used to examine the significance of four surface test values ($a_1$, $a_2$, $a_3$, and $a_4$). I entered the five coefficients obtained from the polynomial regression analyses and their respective standard errors into an Excel spreadsheet provided by Shanock et al. (2010) to test the significance of the surface values. In RSA, the line of perfect agreement represents the levels of the relationship outcome when perceivers' and partners' ratings of boredom items are essentially the same. The slope of the line of perfect agreement is represented by $a_1$, which allows us to answer whether matches at high values have different outcomes than matches at low values. A significant positive value indicates that when perceptions of and partner's actual boredom are in agreement and increase, the relationship outcome is higher, whereas a significant negative value indicates that when perceptions of and partner's actual boredom are in agreement and increase, the relationship outcome is lower. The curvature along the line of perfect agreement is represented by $a_2$, which allows us to determine whether matches at extreme values have different outcomes than matches at less extreme values. A significant value suggests nonlinearity, indicating matches at extreme values have different outcomes than matches at less extreme values.

The line perpendicular to the line of perfect agreement is the line of incongruence, which represents the levels of the relationship outcome when perceivers' and partners' ratings of relational boredom are not in agreement. The slope of the line of incongruence is represented by $a_3$, which allows us to answer whether one mismatch is better or worse than the other (i.e., is overestimation better or worse than underestimation). A significant positive value indicates that overestimation of the partner's boredom (compared to underestimation) predicts higher outcome values, whereas a significant negative value indicates that underestimation (compared to overestimation) predicts higher outcome values. The curvature along the line of incongruence is represented by $a_4$ and is a proxy for tracking accuracy, as it allows us to answer whether matches in perceptions and actual ratings are better than mismatches in predicting outcomes (cf. Barranti et al., 2017). A significant positive value suggests that the greater the directional bias, the higher the

value of the relationship outcome (i.e. bias is associated with higher values of the outcome than accuracy).

This description of surface tests values indicates how each of them would be interpreted if it occurred in isolation (Barranti et al., 2017), and was the basis of my original hypotheses (Hypotheses 4 and 5)[3]. However, consistent with the concerns raised by Humberg et al. (2019), I later recognized that these effects rarely occur in isolation and therefore must be interpreted together, yet there is no strict guideline on how to so in this context. Therefore, it is up to the researcher to take into consideration the size of the effect and its validity based on previous research and theoretical consistency. Thus, although my primary focus was to examine how directional bias ($a_3$) and accuracy ($a_4$) are associated with relationship satisfaction, commitment, and trust, I report all surface test values and interpret their pattern as a whole.

Inconsistent with Hypothesis 4, results from the multilevel polynomial regressions with response surface analyses revealed effects of accuracy on relationship outcomes such that when perceptions of and the partner's actual relational boredom were in agreement and increased, perceivers' and partners' relationship satisfaction, commitment, and trust were lower ($a_1$); this association was nonlinear ($a_2$); and as a result, inaccuracy appears to be associated with higher values on all relationship outcomes than accuracy ($a_4$). However, when examining Figures 1 and 2, accuracy at low levels of relational boredom was not associated with decreased satisfaction commitment, and trust. Together, I interpret these surface test values and the resulting graphs to indicate that when both perceptions of and actual relational boredom are high, both perceivers' and partner's relationship outcomes are low. However, perceiver and partner relationship satisfaction, commitment, and trust

[3] As RSA is a relatively new statistical technique, new papers were being published (e.g. Barranti et al., 2017; Humberg et al., 2019) and concerns were being raised by statisticians in the field regarding independently interpreting the surface values after this study was conducted and the hypotheses for Study 2 were preregistered. Since that time, I have adjusted my interpretation of the effects to consider the overall shape of the surface plot (i.e. all four surface values together). Thus, the interpretation of the results as a whole may not correspond with the original wording of the hypotheses from Studies 1 and 2.

are preserved if perceptions of the partner's boredom, their actual boredom, or both are low.

Additionally, inaccuracy in one direction was associated with higher relationship outcomes for partners than inaccuracy in the opposite direction. That is, for partners *overestimation* (compared to underestimation) of their boredom by perceivers was linked to higher relationship satisfaction, commitment, and trust ($a_3$). Inconsistent with Hypothesis 5, there were no significant differences in relationship outcomes for perceivers based on directional bias. I plotted graphs representing these results using the R package RSA (Schönbrodt & Humberg, 2018; see Figures 1 and 2).

**Table 2.** Study 1 effects of directional bias and accuracy in perceptions of the partner's boredom on relationship outcomes using multilevel polynomial regression with response surface analyses.

| | **Response Surface Analysis Estimates** | | | |
|---|---|---|---|---|
| | Line of Agreement | | Line of Disagreement | |
| Relationship Outcome | Slope $a_1$ | Curvature $a_2$ | Slope $a_3$ | Curvature $a_4$ |
| Actor (Perceiver) RS | -.26 (.04)*** | -.05 (.01)*** | -.01 (.02) | .04 (.01)*** |
| Partner RS | -.29 (.04)*** | -.05 (.01)*** | .11 (.02)*** | .04 (.01)*** |
| Actor (Perceiver) C | -.43(.09)*** | -.10(.02)*** | -.03(.05) | .07(.02)** |
| Partner C | -.54(.09)*** | -.08(.02)*** | .21(.05)*** | .07(.03)* |
| Actor (Perceiver) T | -.34(.05)*** | -.07(.01)*** | .02(.03) | .04(.01)** |
| Partner T | -.34(.05)*** | -.08(.01)*** | .07(.03)* | .04(.01)** |

*Note*. I report unstandardized regression coefficients (standard errors in parentheses). RS = relationship satisfaction; C = commitment; T = Trust.
$+p \leq .10$, $*p \leq .05$, $**p \leq .01$, $***p \leq .001$

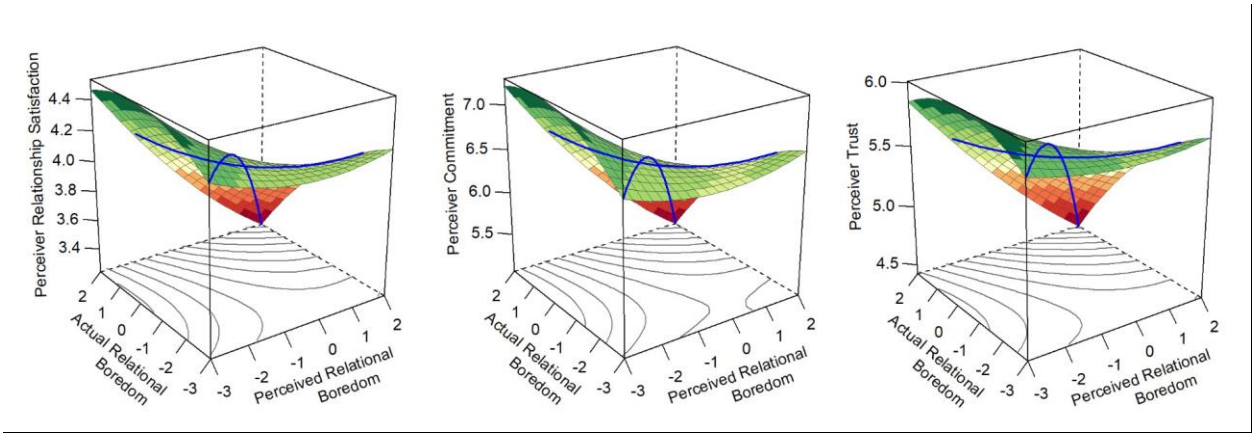


**Figure 1.** Study 1 response surface analyses for directional bias and accuracy in perceptions of the partner's boredom predicting perceiver relationship satisfaction, commitment, and trust.

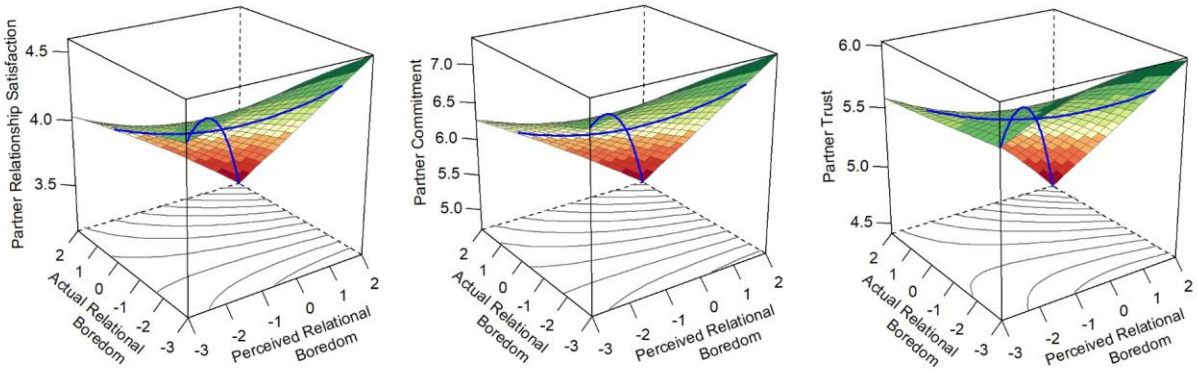


**Figure 2.** Study 1 response surface analyses for directional bias and accuracy in perceptions of the partner's boredom predicting partner relationship satisfaction, commitment, and trust.

## 1.3 Discussion

Study 1 addressed an important gap in the relational boredom literature by examining whether romantic partners are accurate and biased in their perceptions of each other's relational boredom, and what this (in)accuracy means for their and their partner's relationship quality. These findings provide initial evidence that romantic partners are

fairly accurate in their perceptions of each other's relational boredom, and that accuracy and bias are associated with differences in relationship quality. However, the effects of bias differ for perceivers and their partners. That is, inconsistent with my hypotheses I found no significant differences based on directional bias for perceivers, though exploratory analyses revealed overestimation was associated with higher relationship satisfaction, commitment, and trust for partners. Partially consistent with hypotheses, accuracy was associated with higher relationship satisfaction, commitment, and trust for perceivers and partners, but only at low levels of relational boredom. Considering the inconsistency of many of these results with my initial hypotheses, rather than interpret the results at this stage I sought to replicate these findings in an additional study.

# Chapter 2

## 2 Study 2

The purpose of this study was to replicate the findings of Study 1. In Study 1, I found a marginal tendency for participants to overestimate their partner's relational boredom, and proposed that this effect would be replicated in Study 2 (Hypothesis 1). Also consistent with Study 1, I hypothesized that romantic partners would demonstrate tracking accuracy (Hypothesis 2) and project their own levels of relational boredom onto their perceptions of their romantic partner (assumed similarity; Hypothesis 3). Additionally, similar to Study 1 I anticipated that bias and accuracy would be associated with relationship quality. I proposed that for both perceivers (Hypothesis 4) and partners (Hypothesis 5), accuracy would be associated with lower relationship quality than inaccuracy.[4] Additionally, I hypothesized that bias in judgments of relational boredom would be associated with relationship quality, but the effects would differ for perceivers and partners. I predicted that for perceivers, underestimation (compared to overestimation) of the partner's relational boredom would be linked to higher relationship quality (Hypothesis 6), whereas for partners, overestimation (compared to underestimation) of their boredom by perceivers would be linked to higher relationship quality (Hypothesis 7).

[4] In my original preregistration, two additional hypotheses were included: relationship security mediates the association between bias and relationship quality, such that underestimation would be associated with greater relationship security, and greater security would be associated with greater perceiver relationship quality (Hypothesis 8); and greater use of boredom coping strategies mediates the relation between bias and relationship quality, such that overestimation would be associated with greater use of boredom coping strategies, and greater use of coping strategies would be associated with greater partner relationship quality (Hypothesis 9). Given the reinterpretation of the RSA analyses from Study 1 to consider all surface test values in tandem, the fact that the effect of underestimation on perceiver relationship quality was no longer significantly different from overestimation when separated into its individual parts (satisfaction, commitment, and trust), and issues with the boredom coping measure (only asked about engagement in coping in the last day), I opted not to test these hypotheses in Study 2.

## 2.1 Method

### 2.1.1 Participants

Data for this study were collected as part of a larger study on romantic and sexual ideals. Couples were recruited by Qualtrics Panel where partners separately and consecutively completed two survey sessions. For Part 1, 6108 survey sessions were opened. Potential participants were then automatically removed by Qualtrics Panel if they or their partner failed to meet inclusion criteria (did not consent to participate, $n$ = 1269; under 18 years of age, $n$ = 28; not fluent in English, $n$ = 66; were not in a romantic relationship, $n$ = 1361; had not been together for at least 4 months, $n$ = 60; or were not heterosexual, $n$ = 697) or attention checks ($n$ = 2099), indicated they discussed responses to survey questions with their partner during the survey ($n$ = 181), or indicated they were unwilling to participate in Part 2 ($n$ = 211). The final sample was 136 heterosexual romantic couples (272 individuals). Compensation for this study was prorated. Part 1 was divided into 27 questionnaires and participants were compensated $.04 for each questionnaire of the survey they initiated. Part 2 of this study was divided into 14 questionnaires, and participants were compensated $.10 for each questionnaire of the survey they initiated. Therefore, participants could receive up to $1.08 (US) for participating in Part 1 of this study and $1.40 (US) for participating in Part 2, for a total of $2.48. Participants were 20-84 years of age ($M_{years}$ = 48.87, $SD_{years}$ = 14.58) and were in relationships lasting 7 months to 55 years ($M_{years}$ = 20.66, $SD_{years}$ = 14.57). Approximately 6% of couples reported that they were casually or exclusively dating and 94% reported being common-law, engaged, or married. The majority (96%) of couples were cohabiting.

### 2.1.2 Procedure

Participation in this study occurred online, and involved answering a number of questions regarding their romantic relationship at two time points (Part 1 and Part 2). In Part 1 of this study, each partner separately and privately completed a battery of questionnaires as part of a larger preregistered study on romantic and sexual ideals. After completing Part 1 of this study, participants were asked to complete Part 2 two weeks later. Part 2 consisted of questions about sexual ideals, communication, satisfaction, and health. For the

purposes of the current study, only Part 1 data regarding participants' experiences of relational boredom, their perceptions of their partner's boredom, satisfaction and commitment were used.

### 2.1.3 Measures

#### 2.1.3.1 Relational boredom

Consistent with Study 1, participants completed the 15-item RBS (Harasymchuk & Fehr, 2012) twice, once to measure their own relational boredom (α = .95, *M* = 2.88, *SD* = 1.42), and once to measure their perceptions of their partner's boredom (α = .95, *M* = 2.94, *SD* = 1.39). Also consistent with Study 1, the 15 relational boredom items were later treated as repeated measures within individuals.

#### 2.1.3.2 Relationship Satisfaction and Commitment

Relationship satisfaction and commitment were assessed using items from the corresponding subscales of the IMS (Rusbult et al., 1998). Satisfaction was measured with three items (e.g. "I feel satisfied with our relationship"; α = .94, *M* = 6.93, *SD* = 2.22), and commitment with four items (e.g. "I am committed to maintaining my relationship with my partner"*;* α = .96, *M* = 8.09, *SD* = 1.53). Possible responses were on a 9-point scale (1 = *Do not agree at all*, 9 = *Agree completely*).

## 2.2 Results

I again used the T&B Model (West & Kenny, 2011) to estimate directional bias, tracking accuracy, and assumed similarity, and RSA to determine how these processes are associated with relationship outcomes. The results of the T&B Model analysis are displayed in Table 3. Consistent with Study 1 and Hypotheses 1-3, overall, perceivers overestimated their partner's relational boredom, demonstrated tracking accuracy, and projected their own levels of relational boredom (i.e., assumed similarity) when making judgments of their partner.

**Table 3.** Study 2 effects of directional bias, tracking accuracy, and assumed similarity in perceptions of the partner's relational boredom using the Truth and Bias Model of Judgment.

| | Truth and Bias Model Estimates | | | | |
|---|---|---|---|---|---|
| Perceptions of Partner's Boredom | *b* | *SE* | *t* | 95% CI | $R^2$ |
| Directional Bias | .18 | .05 | 3.65*** | .08, .28 | .11 |
| Tracking Accuracy | .32 | .02 | 14.30*** | .28, .37 | .65 |
| Assumed Similarity | .46 | .03 | 17.78*** | .41, .52 | .72 |

*Note*. Approximate effect sizes were computed using the formula $R^2 = \frac{(df_{Numerator}/df_{Denominator})*F}{1+((df_{Numerator}/df_{Denominator})*F)}$ (L. J. Edwards et al., 2008; Page-Gould, 2016). Degrees of freedom ranged from 106.49 to 120.13.
***$p \leq .001$

Results from the multilevel polynomial regressions with response surface analyses revealed effects of accuracy on relationship outcomes such that as perceptions of and the partner's actual relational boredom were in agreement and increased, perceivers' and partners' relationship satisfaction and commitment was lower ($a_1$). Additionally, inaccuracy was typically associated with higher values on relationship outcomes than accuracy ($a_4$), although this effect was marginal for partner relationship satisfaction and nonsignificant for perceiver commitment. Consistent with Study 1, when examining Figures 3 and 4, accuracy at low levels of relational boredom was not associated with lower satisfaction and commitment. Together, I interpret these surface test values and the resulting graphs to indicate that, consistent with Hypotheses 4 and 5, when both perceptions of and actual relational boredom are high, both perceivers' and partners' relationship outcomes are low. However, perceivers' relationship satisfaction, perceivers' commitment, and partners' commitment were preserved if perceptions of the partner's boredom, their actual boredom, or both were low. Contrary to Study 1, underestimation did not appear to have a protective function for partners' relationship satisfaction in Study 2, as partners' relationship satisfaction was still low when their own boredom was high but the perceiver's perceptions of their boredom was low.

Additionally, inaccuracy in one direction was associated with higher relationship outcomes for partners than inaccuracy in the opposite direction. That is, consistent with Hypothesis 7, for partners *overestimation* (compared to underestimation) of their

boredom by perceivers was linked to higher relationship satisfaction and commitment ($a_3$). Inconsistent with Hypothesis 6, there were no significant differences in relationship outcomes for perceivers based on directional bias. I plotted graphs representing these results using the R package RSA (Schönbrodt & Humberg, 2018; see Figures 3 and 4).

**Table 4.** Study 2 effects of directional bias and accuracy in perceptions of the partner's boredom on relationship outcomes using multilevel polynomial regression with response surface analyses

| | **Response Surface Analysis Estimates** | | | |
|---|---|---|---|---|
| | Line of Agreement | | Line of Disagreement | |
| Relationship Outcome | Slope $a_1$ | Curvature $a_2$ | Slope $a_3$ | Curvature $a_4$ |
| Actor (Perceiver) RS | -.44 (.07)*** | -.06 (.03)* | -.10 (.07) | .13 (.06)* |
| Partner RS | -.49 (.06)*** | -.06 (.02)* | .26 (.06)*** | .09 (.06)+ |
| Actor (Perceiver) C | -.14(.04)*** | -.02(.02) | .01(.05) | .01(.05) |
| Partner C | -.29(.04)*** | -.003(.01) | .12(.06)* | .07(.02)*** |

*Note*. I report unstandardized regression coefficients (standard errors in parentheses). RS = relationship satisfaction; C = commitment.
+$p \leq .10$, * $p \leq .05$, **$p \leq .01$, ***$p \leq .001$

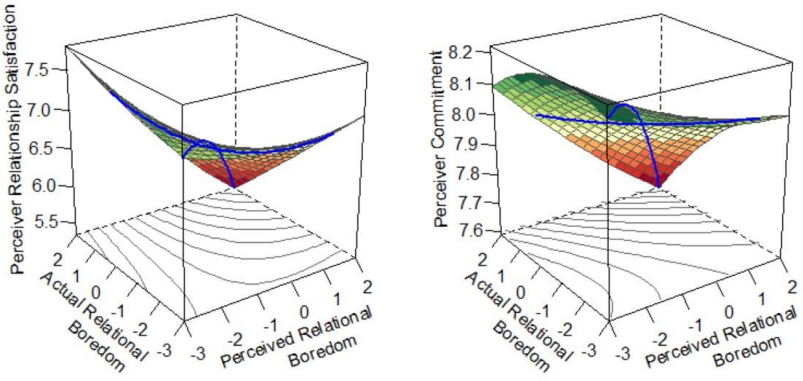


**Figure 3.** Study 2 response surface analyses for directional bias and accuracy in perceptions of the partner's boredom predicting perceiver relationship satisfaction and commitment.

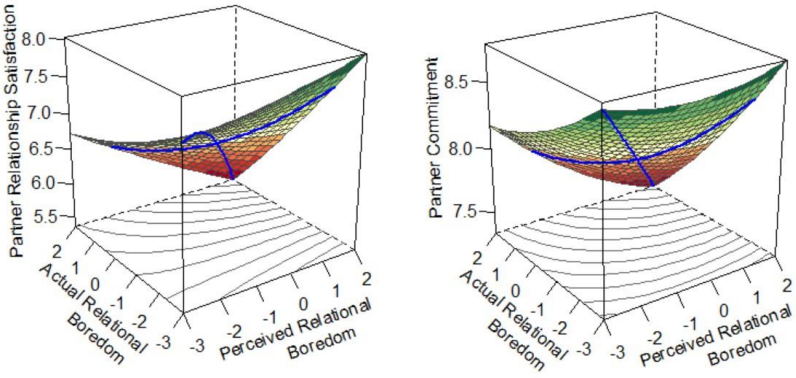


**Figure 4.** Study 2 response surface analyses for directional bias and accuracy in perceptions of the partner's boredom predicting partner relationship satisfaction and commitment.

## 2.3 Discussion

The results of Study 1 were largely replicated in Study 2. I found that romantic partners displayed high levels of assumed similarity (projecting their own experiences of boredom on to their perceptions of their partner) and tracking accuracy across the features that comprise relational boredom. In addition, a consistent effect emerged showing that romantic partners tend to overestimate each other's relational boredom, which is counter to my theoretically-driven hypothesis from Study 1. However, consistent with the results of Study 1, I found that overestimation, as opposed to underestimation, of the partner's relational boredom by the perceiver is associated with higher partner relationship satisfaction and commitment. Thus, this tendency towards overestimation may exist due to its associated benefits for the partner, despite the fact that overestimation poses no direct benefits to the perceiver themselves (beyond those gained by underestimating or being accurate at low levels of partner boredom). General boredom experiences may have a signaling function (Elpidorou, 2014, 2018), thus overestimation of the partner's boredom may signal the need for relationship maintenance behaviours, and when enacted by the perceiver, these behaviours contribute to greater relationship satisfaction and commitment for the partner. In addition, enacting these behaviours when they are not strictly necessary may be less costly than failing to engage in these behaviours when they

are required to sustain the relationship, leading perceivers to typically err in that direction (i.e. erring on the side of caution). This is consistent with Error Management Theory (Haselton & Buss, 2000; Haselton & Nettle, 2006), which suggests that a number of social cognitive biases have developed over time to minimize the costs associated with judgmental errors. Thus, romantic partners' negative perceptions may have a signaling function that is beneficial to both partner and general relational well-being in the long-term. I sought to test this possibility in a third and final study on perceptual accuracy with regards to relational boredom.

Additionally, one limitation of Studies 1 and 2 is that due to their cross-sectional nature, tracking accuracy represents how strongly perceivers can track the pattern of their partner's responses across the various features (items) that comprise relational boredom. However, a potentially more impactful method of examining tracking accuracy would be to instead examine whether perceivers can track the pattern of their partner's responses across time, that is, whether romantic partners detect fluctuations in each other's relational boredom. This limitation is also addressed in my final study regarding perceptual accuracy and bias in romantic partners' perceptions of each other's relational boredom (Study 3).

# Chapter 3

# 3 Study 3

Of all the relational challenges that exist, relational boredom is particularly pervasive, as researchers have speculated that all couples are likely to experience it during the typical ebb and flow over the course of romantic relationships (A. Aron & Aron, 1986). The relational boredom literature also typically describes boredom as something that fluctuates over time, with periods of change and low boredom (e.g. planning a wedding and experiencing the "honeymoon phase") followed by periods of stability and high boredom, and vice versa. Therefore, Study 3 involves determining whether romantic partners can accurately track each other's relational boredom over time, and whether changes in relationship quality can be predicted by changes in accuracy and bias. As Studies 1 and 2 sought to examine these phenomena across a variety of relationship lengths and life stages, Study 3 will also do so by examining whether a community sample of romantic partners can accurately track each other's relational boredom experiences at the daily level. I predicted that, consistent with Studies 1 and 2, romantic partners would display positive directional bias (Hypothesis 1), tracking accuracy across days (Hypothesis 2), and assumed similarity (Hypothesis 3) in their perceptions of each other's relational boredom. Additionally, similar to Studies 1 and 2, I anticipated that bias and accuracy would be associated with relationship quality (relationship satisfaction, commitment, and trust), such that when both perceptions of and actual relational boredom are high, both perceivers' and partners' relationship quality would be low (Hypothesis 4). However, if perceptions of the partner's boredom, their actual boredom, or both are low, I proposed this would have a protective function and relationship quality would be preserved (Hypothesis 5). Also consistent with Studies 1 and 2, I predicted that overestimation of the partner's relational boredom would be associated with higher partner relationship quality (Hypothesis 6).

The current study also sought to explore the mechanism behind the general tendency to overestimate one's partner's relational boredom, and how doing so is associated with better relational outcomes for the partner. If this tendency is in fact driven by perceiving

boredom having a signaling function that indicates relationship maintenance behaviours are required to sustain the relationship, biased boredom perceptions should be associated with relevant relationship maintenance behaviours. The most common coping mechanisms romantic partners report using to decrease relational boredom are active, relationship-focused strategies geared towards increasing novelty, stimulation, and communication (Harasymchuk & Fehr, 2010). These coping behaviours likely have a reciprocal relation with boredom perceptions, as failing to engage in them is likely a cue that the partner may be bored, and perceiving one's partner to be bored should signal a need for a greater frequency of these coping behaviours. I therefore explored whether accuracy and bias on a given day were associated with greater engagement in boredom coping strategies the following day, controlling for engagement in boredom coping strategies that day.

## 3.1 Method

### 3.1.1 Participants

Participants consisted of 130 cohabiting, heterosexual romantic couples recruited online via advertisements posted on Kijiji, Facebook, through an email list of couples who had previously participated in research in our lab, and through flyers posted around the London, Ontario community. Data from 15 couples were excluded because one or both partners did not consent to participate in the study ($n$ = 5), did not meet inclusion criteria ($n$ = 4 non-monogamous, $n$ = 1 same-sex couple, $n$ = 1 does not speak/read English fluently, $n$ = 4 one or both partners did not complete at least 3 diary surveys), resulting in a final sample of 115 couples. Compensation for this study was pro-rated; participants could earn $2 for taking the pretesting questionnaire, $1 for each daily survey they contributed, and $2 for taking the post-diary questionnaire, with a $10 bonus given to participants who contributed to all study elements, for a maximum of $35(CAD) per person.

Participants in the final sample ranged from 19-64 years of age ($M_{years}$ = 30.78, $SD_{years}$ = 8.99) and had been involved in their relationship from 5 months to 25.58 years ($M_{years}$ = 6.83, $SD_{years}$ = 5.87). Among participants, 41.74% of couples were dating, and 58.26%

were common-law, engaged, or married. Among couples in the present study, 41.30% reported they have children, and among couples with children, most (82.11%) had one or two.

### 3.1.2 Procedure

The data for this study were collected as part of a larger study of romantic couples' daily relational boredom and sexual experiences, which occurred entirely online. Participants were instructed to complete all surveys, including a 30-minute background survey, 10-minute daily surveys for 21 consecutive days, and a 30-minute post-diary survey, independently from their partner. Given the varied nature of the interests for this larger study, different questionnaires were provided to participants in the daily portion of the study based on whether it was an odd (boredom) or even diary day (sexual experiences). I used shortened versions of the focal measures in the daily portion of the study to reduce fatigue, increase efficiency, and minimize participant attrition (Bolger et al., 2003).

To maximize participant compliance with the daily diary responses, reminder emails were sent to the participants who had not completed their diaries within 3 hours of their start time each day. On average, participants completed 18.87 diaries across the 21-day study (range = 4-21) for a total of 4339 diary surveys completed across all participants. For the purposes of the current study, only responses from the daily diary portion of the study are included in analyses.[5]

### 3.1.3 Daily Diary Measures

On odd numbered days during the 21-day daily experience portion of the study, participants completed the RBS (Harasymchuk & Fehr, 2012) for both themselves (*Rc* = .84, *M* = 2.38, *SD* = 1.09) and their perceptions of their partner (*Rc* = .85, *M* = 2.49, *SD* = 1.18). Each day of the diary portion, participants also answered shortened questionnaires

[5] My original preregistration included using responses to the pre- and post-diary questionnaires and standardizing them to be comparable to the shortened daily questionnaires. After further consideration and consultation with statistical experts regarding the efficacy of this choice, I altered my plan and opted to only include the daily dairy responses in my analyses.

regarding their relationship satisfaction, commitment, trust, and engagement in boredom coping strategies that day.

#### 3.1.3.1 Relationship Satisfaction

Relationship satisfaction was measured with four items from the RAS (Hendrick, 1988; e.g. "How satisfied are you with your relationship?"), with possible responses on a 5-point scale (1 = *Not at all/extremely poor*, 5 = *A great deal/extremely good; Rc* = .80, *M* = 4.42, *SD* = .71).

#### 3.1.3.2 Commitment

Commitment was measured with three items from the IMS (e.g. "I feel very attached to our relationship"; Rusbult et al., 1998), with possible responses on a 9-point scale (0 = *Do not agree at all*, 8 = *Agree completely*; *Rc* = .90, *M* = 6.48, *SD* = .95).

#### 3.1.3.3 Trust

Trust was measured with three items (e.g. "My partner is dependable"), with possible responses rated on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*; *Rc* = .86, *M* = 6.35, *SD* = .96).

#### 3.1.3.4 Engagement in Boredom Coping Behaviours

Participants were also asked to indicate if they had engaged in a selection of seven common boredom coping strategies with their partner that day (e.g. "Try new things with your partner"; based on previous research by Harasymchuk & Fehr, 2010).

## 3.2 Results

All analyses are comparable to Studies 1 and 2, as again I used West and Kenny's (2011) T&B Model to test the degree to which people are accurate and biased in their judgments of their romantic partner's relational boredom and RSA to test the association of accuracy and bias with relationship outcomes. However, in the current study the data have a different nested structure, with both partners' ratings of boredom and perceptions of their partner's boredom across the 21 days (mean aggregate per day; Level 1) nested within

dyad (Level 2). The results of the T&B Model analysis are displayed in Table 5. Consistent with Studies 1 and 2 and Hypotheses 1 and 3, overall, perceivers *overestimated* their partner's relational boredom, and projected their own levels of relational boredom (i.e., assumed similarity) when making judgments of their partner. Additionally, consistent with Hypothesis 2 romantic partners displayed significant positive tracking accuracy, indicating that romantic partners tracked fluctuations in each other's relational boredom across days.

**Table 5.** Study 3 effects of directional bias, tracking accuracy, and assumed similarity on perceptions of the partner's boredom using the Truth and Bias Model of Judgment.

| | **Truth and Bias Model Estimates** | | | | |
|---|---|---|---|---|---|
| Perceptions of Partner's Boredom | *b* | *SE* | *t* | 95% CI | $R^2$ |
| Directional Bias | .11 | .03 | 3.51*** | .05, .18 | .12 |
| Tracking Accuracy | .14 | .03 | 4.36*** | .08, .21 | .15 |
| Assumed Similarity | .75 | .04 | 19.52*** | .67, .83 | .79 |

*Note*. Approximate effect sizes were computed using the formula $R^2 = \frac{(df_{Numerator}/df_{Denominator})*F}{1+((df_{Numerator}/df_{Denominator})*F)}$ (L. J. Edwards et al., 2008; Page-Gould, 2016). Degrees of freedom ranged from 89.74 to 102.02.
***$p \leq .001$

Results from the multilevel polynomial regressions with response surface analyses revealed effects of accuracy on relationship outcomes such that as perceptions of and the partner's actual relational boredom were in agreement and increased, perceivers' and partners' daily relationship satisfaction, commitment, and trust were lower ($a_1$); this association was nonlinear ($a_2$). These results are consistent with Hypothesis 4. Inconsistent with Study 1 but consistent with Study 2, in Study 3 inaccuracy was not consistently associated with higher values on relationship outcomes than accuracy ($a_4$). However, when examining Figures 5 and 6, consistent with Studies 1 and 2, accuracy at low levels of relational boredom was not associated with lower relationship satisfaction, commitment, or trust, but accuracy at high levels was associated with these detriments. Together, I interpret these surface test values and the resulting graphs to indicate that perceivers' relationship satisfaction, commitment, and trust were preserved when their perceptions of their partner's boredom, their partner's actual boredom, or both were low. Partners' relationship satisfaction, commitment, and trust were preserved when

perceivers overestimated or when both perceptions of and actual partner boredom were low, but not when perceivers underestimated. These results are partially consistent with Hypothesis 5.

Thus, inaccuracy in one direction was associated with higher relationship outcomes for partners than inaccuracy in the opposite direction. That is, for partners *overestimation* (compared to underestimation) of their boredom by perceivers was linked to higher relationship satisfaction, commitment, and trust ($a_3$). These results are consistent with Hypothesis 6. However, for perceivers, underestimation (compared to overestimation) was associated with higher relationship satisfaction, but no differences were found for commitment or trust. I plotted graphs representing these results using the R package RSA (Schönbrodt & Humberg, 2018; see Figures 5 and 6).

**Table 6.** Study 3 effects of directional bias and accuracy in perceptions of the partner's boredom on relationship outcomes using multilevel polynomial regression with response surface analyses.

| | **Response Surface Analysis Estimates** | | | |
|---|---|---|---|---|
| | Line of Agreement | | Line of Disagreement | |
| Relationship Outcome | Slope $a_1$ | Curvature $a_2$ | Slope $a_3$ | Curvature $a_4$ |
| Actor (Perceiver) RS | -.92 (.07)*** | -.17 (.03)*** | -.20 (.08)* | .08 (.04)* |
| Partner RS | -.74 (.03)*** | -.10 (.01)*** | .38 (.05)*** | -.05 (.02)** |
| Actor (Perceiver) C | -1.15 (.09)*** | -.22 (.04)*** | -.22 (.15) | .08 (.06) |
| Partner C | -.86 (.05)*** | -.16 (.02)*** | .52 (.08)*** | -.03 (.04) |
| Actor (Perceiver) T | -.73 (.06)*** | -.07 (.02)** | -.09 (.10) | .15 (.04)*** |
| Partner T | -.93 (.08)*** | -.15 (.03)*** | .35 (.12)** | -.10 (.05)* |

*Note*. I report unstandardized regression coefficients (standard errors in parentheses). RS = relationship satisfaction; C = commitment; T = Trust.
+$p \leq .10$, **$p \leq .01$, ***$p \leq .001$

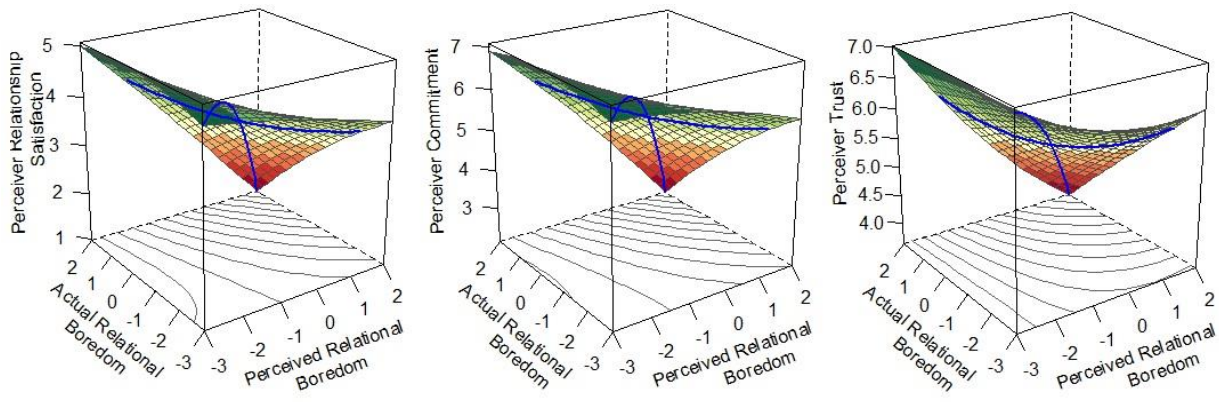


**Figure 5.** Study 3 response surface analyses for directional bias and accuracy in perceptions of the partner's boredom predicting perceiver relationship satisfaction, commitment, and trust.

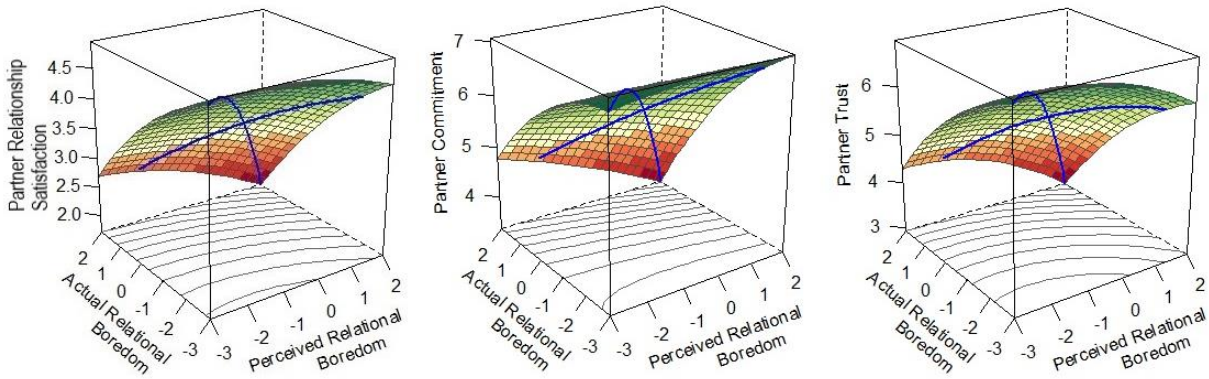


**Figure 6.** Study 3 response surface analyses for directional bias and accuracy in perceptions of the partner's boredom predicting partner relationship satisfaction, commitment, and trust.

### 3.2.1 Additional Analyses

I also ran additional exploratory models examining the lagged effects of accuracy and bias on actors' and partners' engagement in boredom coping strategies (i.e. whether accuracy and bias the previous day are associated with boredom coping today). In particular, I believed this could explain the relation between perceiver overestimation and partner relationship satisfaction, commitment, and trust if overestimation one day was

associated with the perceiver engaging in more boredom coping strategies on the following day. These results are summarized in Table 7.

I found no significant differences in perceivers' engagement in boredom coping strategies based on their perceptions of or their partner's actual experiences of relational boredom. Interestingly, I found effects for partners' engagement in boredom coping strategies based on the perceiver's accuracy and bias. As perceptions of and the partner's actual relational boredom were in agreement and increased, partners' engagement in boredom coping strategies decreased ($a_1$); this association was linear ($a_2$), and inaccuracy was associated with greater engagement in coping strategies than accuracy ($a_4$), with perceiver underestimation being associated with greater partner engagement in boredom coping than overestimation ($a_3$). Therefore, this did not explain the consistent results across three studies finding effects of overestimation of the partner's relational boredom by the perceiver predicting greater partner relationship satisfaction, commitment, and trust. However, given that partners' engagement in boredom coping behaviours was associated with perceivers' accuracy and bias, I then considered the possibility that engagement in boredom coping strategies is not a reaction to perceptions of boredom, but a precursor to it.

**Table 7.** Study 3 effects of directional bias and accuracy in perceptions of the partner's boredom on engagement in boredom coping behaviours using multilevel polynomial regression with response surface analyses.

| | **Response Surface Analysis Estimates** | | | |
|---|---|---|---|---|
| | Line of Agreement | | Line of Disagreement | |
| Relationship Outcome | Slope $a_1$ | Curvature $a_2$ | Slope $a_3$ | Curvature $a_4$ |
| Actor (Perceiver) BC | -.13 (.07) | .02 (.03) | .13 (.10) | .10 (.08) |
| Partner BC | -.16 (.07)* | -.001 (.03) | -.20 (.09)* | .21 (.07)** |

*Note*. I report unstandardized regression coefficients (standard errors in parentheses). BC = engagement in boredom coping behaviours.
*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

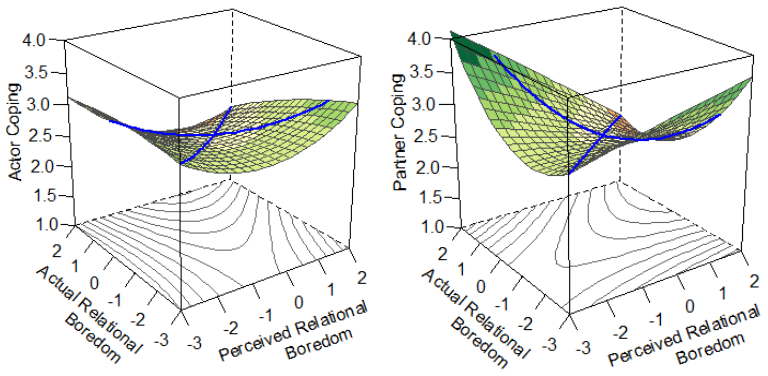


**Figure 7.** Study 3 response surface analyses for directional bias and accuracy in perceptions of the partner's boredom predicting perceiver and partner engagement in relational boredom coping behaviours.

Thus, I also explored whether partners' engagement in boredom coping strategies may be acting as a cue for perceivers regarding the partner's boredom. I tested two multilevel path models with indistinguishable dyads consistent with previous research (Bolger & Laurenceau, 2013; LaBuda et al., 2019). These models were conducted at level 1 (day), controlling for levels 2 (person) and 3 (couple). In these models, the actor's (perceiver's) perception of the partner's boredom was the outcome, predicted by the actor's own boredom and the partner's actual boredom. These variables were centered around the grand mean of partners' reports of boredom consistent with the T&B Model (West & Kenny, 2011), allowing for the simultaneous testing of tracking accuracy, assumed similarity, and directional bias. I also included partners' engagement in boredom coping to determine whether people rely on their partner's boredom coping behaviours as cues to judge their boredom, and whether doing so improves their perceptual accuracy (see Figure 8). If actors' and partners' actual relational boredom are associated with the partner's engagement in boredom coping, this indicates that the partner's boredom coping is a relevant cue for relational boredom, and if it in turn predicts actors' perceptions of partners' boredom then this is an indication that actors are actually using these behaviours as a cue. I also ran an additional model where partners' engagement in relational boredom coping strategies the previous day was used as a predictor of that day's actor boredom, partner boredom, partner coping, and actor perceptions of the partner's boredom (see Figure 9).

Results of both models are summarized in Table 8. Findings from the first model demonstrate that higher partner boredom that day predicted lower boredom coping that day, indicating that partners' boredom coping behaviour is a relevant cue regarding actual relational boredom experiences. Actor boredom was unrelated to partner boredom coping, and partner boredom coping was unrelated to actors' perceptions of partners' boredom, indicating that although it is a relevant cue of partner boredom, actors did not actually use partners' boredom coping behaviours as a cue of partner boredom.

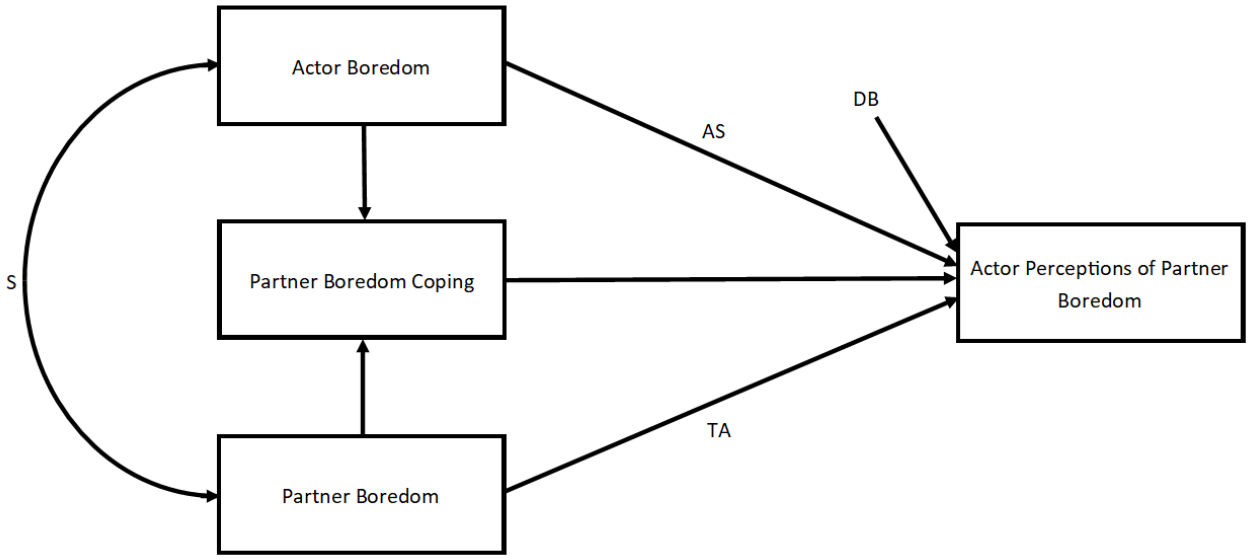


**Figure 8.** Conceptual model showing truth and bias model with partner's boredom coping behaviours as a cue. S = similarity; AS = assumed similarity; TA = tracking accuracy; DB = directional bias.

Results for the second model demonstrate that higher partner boredom coping one day prior predicts higher boredom coping, and lower actor and partner relational boredom that day, indicating lasting effects of engaging in boredom coping strategies and that yesterday's partner coping behaviour is also a relevant cue of today's partner boredom. However, partner boredom coping the previous day did not predict actor perceptions of

partner boredom that day, indicating that although it is a relevant cue, actors also did not actually use yesterday's boredom coping as a cue.

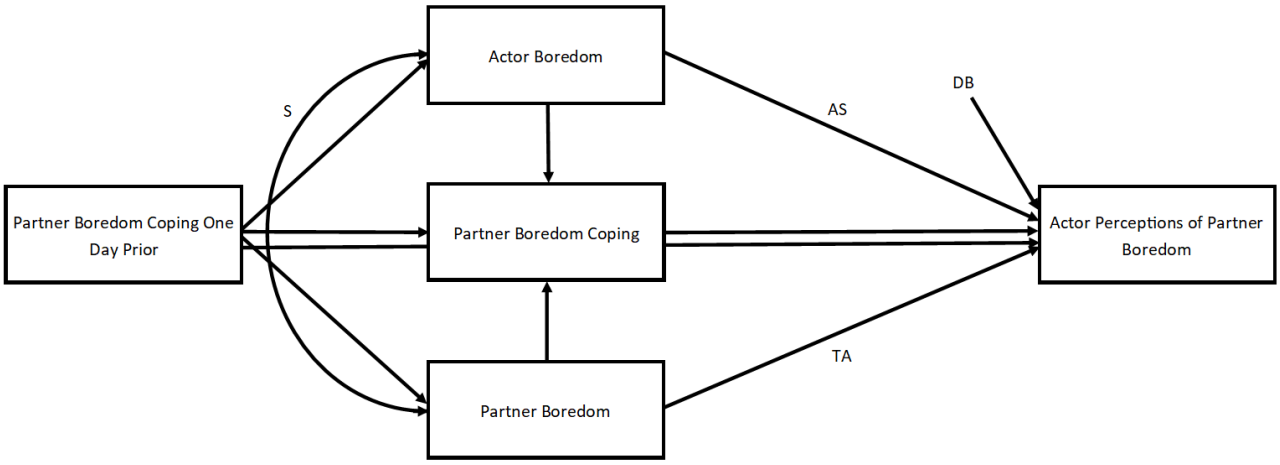


**Figure 9.** Conceptual model showing truth and bias model with partner's boredom coping behaviours yesterday and today as cues. S = similarity; AS = assumed similarity; TA = tracking accuracy; DB = directional bias.

**Table 8.** Study 3 model results for relational boredom and boredom coping behaviours as cues of perceivers' perceptions of partners' boredom.

| Path | *b* | *SE* | *p* |
|---|---|---|---|
| Model 1 | | | |
| Tracking accuracy (path TA) | .18 | .05 | <.001 |
| Assumed similarity (path AS) | .83 | .06 | <.001 |
| Similarity (S) | .74 | .14 | <.001 |
| Directional bias (DB, intercept) | .11 | .03 | <.001 |
| Actors' boredom →Partners' boredom coping behaviours | -.10 | .07 | .131 |
| Partners' boredom →Partners' boredom coping behaviours | -.37 | .07 | <.001 |
| Partners' boredom coping behaviours →Actors' perceptions of partners' boredom | .01 | .01 | .387 |
| Model 2 | | | |
| Tracking accuracy (path TA) | .16 | .05 | .001 |
| Assumed similarity (path AS) | .84 | .06 | <.001 |
| Similarity (S) | .68 | .13 | <.001 |
| Directional bias (DB, intercept) | .09 | .03 | .001 |
| Actors' boredom →Partners' boredom coping behaviours | -.03 | .04 | .441 |
| Partners' boredom →Partners' boredom coping behaviours | -.22 | .05 | <.001 |
| Partners' boredom coping behaviours →Actors' perceptions of partners' boredom | .01 | .01 | .313 |
| Partners' boredom coping behaviours yesterday →Actors' boredom | -.14 | .04 | <.001 |
| Partners' boredom coping behaviours yesterday →Partners' boredom | -.18 | .04 | <.001 |
| Partners' boredom coping behaviours yesterday →Partners' boredom coping behaviours today | .48 | .03 | <.001 |
| Partners' boredom coping behaviours yesterday →Actors' perceptions of partners' boredom | .01 | .01 | .611 |

*Note*. *b*s, *SE*s, and *p* values correspond to the unstandardized results.

## 3.3 Discussion

In three studies, the research presented thus far examined whether romantic partners are biased and accurate in their perceptions of each other's relational boredom, and whether these biased and (in)accurate perceptions are associated with relationship outcomes. Results revealed that romantic partners consistently overestimated each other's relational boredom (marginal in Study 1, significant in Studies 2 and 3), displayed significant tracking accuracy both across the features that comprise relational boredom (Studies 1 and 2) and across time (Study 3), and assumed similarity between their own experiences of relational boredom and their partner's.

Additionally, bias and accuracy were associated with relationship satisfaction, commitment, and trust, such that accurately perceiving high levels of boredom was associated with lower values on these outcomes for both perceivers and partners. However, perceiver outcomes were consistently preserved if perceptions of the partner's boredom, the partner's boredom, or both were low. That is, perceptions of and partners' actual relational boredom were only associated with lower perceiver relationship satisfaction, commitment, and trust if the partner's boredom was high and the perceiver accurately recognized their boredom as high. Finally, the buffering effects for partners' outcomes were less consistent. That is, perceivers accurately recognizing high levels of partner relational boredom was consistently associated with lower values on relational outcomes for partners, and overestimation and accuracy at low levels of relational boredom were consistently associated with higher values on relational outcomes. However, underestimation was associated with high values on all outcomes in Study 1, commitment but not relationship satisfaction in Study 2, and none of the relational outcomes in Study 3. Additionally, overestimation of the partner's boredom by the perceiver was consistently associated with higher partner relationship satisfaction, commitment, and trust than underestimation.

My findings regarding individuals' general tendency to overestimate, although inconsistent with my predictions prior to Study 1, was consistent across all three studies. As boredom represents a relationship threat, I hypothesized that underestimation would serve a self-protective function, and therefore most people would underestimate. However, it appears that people tend to overestimate, which in fact may be beneficial for their relationships. From an error-management theory perspective (Haselton & Buss, 2000; Haselton & Nettle, 2006), which proposes that many social cognitive biases exist to help minimize the costs associated with judgmental errors, this indicates that the costs associated with overestimating may be less severe than the costs associated with underestimating. That is, the feeling of security that may be gained by underestimating is inherently a false sense of security, and may put one's relationship at greater risk by missing cues that it may benefit from engagement in relationship maintenance behaviours. In contrast, overestimation may lead to the perceiver enacting more

relationship maintenance behaviours than is strictly necessary, resulting in the perceiver using more time and resources than necessary to maintain their relationship. However, overestimation may also prevent the perceiver from missing important cues that their partner is bored, which allows them opportunities resolve these issues rather than allowing them to fester and threaten the relationship. Additionally, I did not find any benefits of underestimation for perceivers or partners over and above accuracy at low levels of boredom or overestimating, whereas there were benefits for partners for overestimating. Therefore, a general tendency to overestimate may simply be perceivers erring on the side of what is most beneficial to the relationship overall.

Additionally, romantic partners displayed significant positive tracking accuracy when making judgments of each other's relational boredom. Tracking accuracy in this context likely provides the perceiver with information regarding whether they are meeting their partner's needs, while also protecting them from investing in a relationship that their partner finds boring. Therefore, the motivation to accurately track a partner's relational boredom is likely beneficial to the risk regulation system, as it aids in both knowing when to maintain closeness and intimacy through relationship maintenance, and when there may be risk associated with maintaining the relationship, thus motivating self-protection (Murray et al., 2006).

Although I believe tracking accuracy to serve a necessary balancing function between two opposing innate motivations, accuracy at high levels of relational boredom was consistently associated with lower relationship quality for both perceivers and partners. This is consistent with previous research examining the effects of empathic accuracy on romantic relationship satisfaction and stability in threatening situations (e.g. Sillars et al., 1984; Simpson et al., 1995). Although accuracy may offer opportunities to gain information regarding the state of one's relationship, such insights in the context of a threatening situation (e.g., when ascertaining that your partner is bored) may be painful and upsetting (see Ickes & Simpson, 1997). These results also extend previous research by demonstrating that the same effect exists for the *partner* of the perceiver. Taken together, these findings indicate that recognizing the high levels of relational boredom

experienced by one's partner may impede the advancement of satisfaction, commitment, and trust for both oneself and one's partner.

In contrast, perceiver relationship satisfaction, commitment, and trust were bolstered if perceivers believed their partner's boredom was low (whether accurate or not). This is consistent with my original rationale that, as high boredom represents a relationship threat, perceiving low levels of partner boredom would serve a self-protective function. This self-protective mechanism likely leads to greater feelings of security in the relationship, thus leading partners to experience greater trust, commitment, and satisfaction. Interestingly, perceiver relationship quality was also consistently preserved if perceivers' beliefs that their partner's boredom was high were unfounded (i.e. overestimation). This counters previous research linking overestimation of threats with negative experiences such as anxiety and fear (Beck, 1976; Eysenck, 1992; Mathews, 1990; Mathews & MacLeod, 1994, 2002; Williams et al., 1988). Future research should examine the mechanism behind this effect, and also determine whether these results are true long-term. That is, underestimating one's partner's boredom may protect oneself in the short term but, as this bias is unlikely to result in corrective action, it may lead to relationship problems in the long-term. Similarly, overestimation in the long term, and thus potentially experiencing anxiety and fear that one's relationship may end, may wear partners down over time and cause problems later in the relationship. Thus, future research regarding the long-term effects of accuracy and bias would be beneficial.

In contrast to the effects for perceivers, only accuracy at low levels of partner boredom and perceiver overestimation were consistently associated with higher relationship quality for partners. The effects for overestimation might be due to the perceivers believing their partner is bored and enacting relationship maintenance behaviors. Previous research has suggested that although boredom is unpleasant, it signals to individuals the need for behavioural or cognitive change (Elpidorou, 2014, 2018). If the perceiver overestimates the boredom experienced by their partner, this perception of boredom may signal to the perceiver that they need to take corrective action in order to reduce the experiences of boredom by their partner and maintain the relationship. This

corrective action by the perceiver may then make the partner feel more trust, satisfaction, and commitment.

I explored this possibility in Study 3, specifically testing whether overestimation on a given day led to later engagement in boredom coping behaviours by the perceiver. However, I found no evidence that accuracy or bias were associated with differences in perceivers' engagement in boredom coping behaviours. This is consistent with recent findings suggesting that although people recognize that growth-enhancing behaviours (e.g. novelty) are beneficial to combat relational boredom, these beliefs are not consistently translated into behavioural intentions (Harasymchuk et al., 2017). These researchers found that prescriptive beliefs only translated into behavioural intentions when competing options were made salient (i.e. forced-choice between novel and familiar activity) or the task was specific (i.e. people were asked to plan the next date with their partner). Therefore, it is possible that these null results are due to the fact that high perceptions of the partner's relational boredom, and overestimation in particular, may only be associated with greater engagement in boredom coping strategies in particular circumstances. It is also possible that although these boredom coping strategies may be the most effective means of diminishing boredom, these are not the behaviours partners actually engage in in the face of boredom. Believing one's partner is bored may lead perceivers not to attempt to reduce this negative experience directly, but instead create other, unrelated positive experiences that might outweigh the negative. For example, perceivers may engage in other relationship maintenance behaviours, such as increased affection, support, or sacrifice, which have been associated with relationship benefits (e.g. Cramer, 2004; Horan & Booth-Butterfield, 2010; Impett et al., 2014). Future research should therefore attempt to replicate and extend the current research by examining when overestimation may lead to engagement in boredom coping, as well as additional mechanisms that may explain the consistent effect of overestimation being associated with greater partner relationship satisfaction, commitment, and trust.

Finally, additional exploratory models in Study 3 indicated that although partner engagement in relational boredom coping behaviours is a relevant cue of partner boredom, perceivers are not actually using this information to inform their perceptions of

their partner's relational boredom. In fact, the strongest predictor of perceiver's perceptions of their partner's boredom across all three studies was their own boredom experiences (i.e. assumed similarity). This has implications for couples who are experiencing mismatch in their levels of relational boredom. If there is a discrepancy between partners' experiences and they use their experiences as a gauge of their partner's experiences, they are likely inaccurately estimating their partner's boredom, and therefore failing to respond to their boredom appropriately. These exploratory findings indicate a potential avenue through which to aid mismatched couples in becoming more accurate perceivers. That is, if partners can be taught how to accurately perceive boredom coping behaviours and to interpret them as a cue of their partner's boredom, this may assist them in reducing potential inaccuracies associated with mismatch, and in doing so potentially increase the likelihood of partners enacting coping behaviours when necessary for relationship maintenance.

Together my first three studies addressed an important gap in the relational boredom literature by examining whether romantic partners are accurate and biased in their perceptions of each other's relational boredom, and what this (in)accuracy means for their and their partner's relationship quality. My findings suggest that romantic partners are fairly accurate in their perceptions of each other's relational boredom, and that accuracy and bias are associated with differences in relationship quality, but the effects of bias differ for perceivers and their partners. Future research should focus on replicating and extending this research by examining the contexts in which these perceptions lead to relationship maintenance, investigate additional mechanisms behind these effects, and examine the long-term effects of bias on relationship quality. Understanding the reasoning behind these effects may be the next step towards helping romantic couples understand how to maximize the long-term benefits and avoid the costs of accurate and biased partner perception in relationship threatening situations.

# Chapter 4

# 4 Study 4

Though relational boredom is pervasive, and partners' perceptions of it are meaningfully associated with relationship outcomes, not all experiences of boredom result in relationship breakup. That is, if all relational boredom experiences led to negative relationship experiences and outcomes overall, then given the pervasiveness of boredom, no relationships would last. Thus, partners must be effectively coping with boredom experiences, with the most common methods couples reflectively report doing being active, relationship-focused strategies geared towards increasing novelty, stimulation, and communication (Harasymchuk & Fehr, 2010). This is consistent with self-expansion theory (E. N. Aron & Aron, 1996). Self-expansion refers to the degree that individuals engage in novel activities, gaining new skills and acquiring new perspectives to broaden their sense of self (A. Aron & Aron, 1986), and has been linked with positive relational outcomes such as higher relationship quality, satisfaction, intimacy, closeness, and commitment (Aron et al., 2000, 2013; Girme et al., 2014; Graham, 2008). Novelty in particular has been linked to relational benefits including increased sexual desire (Muise et al., 2019; Sims & Meana, 2010), which in turn is associated with higher relationship satisfaction over time (Muise et al., 2019).

However, the results of Study 3, in addition to some previous research (Harasymchuk et al., 2017), suggest that romantic partners may not effectively cope with their perceptions of their partner's boredom through translating their perceptions and prescriptions into actual coping behaviours. Thus, Studies 4-6 transition from examining perceptions of relational boredom to how romantic partners may cope with the knowledge of that boredom by examining "best practices" in the incorporation of novelty into one's romantic relationship. In particular, Study 4 examines how the behaviours that romantic partners use to try to initiate new sexual behaviours are perceived by the partner who is receiving them, and their association with sexual satisfaction. The goal of this research is to provide specific information on how best to incorporate novelty into one's romantic

relationship in order to maximize both the likelihood that these coping behaviours will actually be used and their relational benefits.

Engaging in satisfying and exciting romantic relationships is an important part of life satisfaction and emotional well-being (Lucas & Dyrenforth, 2006; Myers, 2000). Sexual experiences with one's partner are an important feature of romantic relationships, and are largely what differentiate these relationships from other types of close relationships, such as friendships or familial relationships (Schwartz & Young, 2009). In fact, sexual satisfaction is positively associated with a number of relationship outcomes, such as relationship satisfaction, love, commitment, and relationship stability (for a review, see Sprecher & Cate, 2004). One problem that many couples face is that sexual desire, frequency, and satisfaction tend to decline as relationships progress (e.g., Johnson et al., 1994; Klusmann, 2002). Self-expansion theory (E. N. Aron & Aron, 1996) proposes that engaging in novel and self-expanding behaviours with one's partner may prevent this decline. That is, in order to keep the spark alive and maintain sexual satisfaction, romantic partners may choose to initiate novel and exciting sexual behaviours with their partner. In fact, sexual experimentation is the most differentiating factor between couples who do and do not experience problems associated with sexual desire (Trudel et al., 1995), and being in a sexual routine is a problem for maintaining sexual desire in the long term (Singer & Toates, 1987). However, novel behaviours may at times appear threatening, and the means by which they are incorporated into the relationship may have the power to increase or decrease this threat.

Previous research (Harris, 2009; Terry Humphreys & Newby, 2007) has examined four different categories of behaviours romantic partners may engage in when initiating new sexual behaviours with their partner, including a combination of direct or indirect and verbal or nonverbal strategies. Direct-verbal strategies involve directly communicating to your partner your interest in engaging in the new sexual behaviour (e.g. asking your partner directly if they would be interested in engaging in the new behaviour, telling them you are interested in the behaviour, etc.). Direct-nonverbal strategies involve bringing the new behaviour to your partner's attention without explicitly communicating about it (e.g. simply engage in the new behaviour during a sexual encounter, present your partner with

an erotic movie that depicts the behaviour, etc.). Indirect-verbal strategies involve discussing the new behaviour with your partner without indicating your own interest in the behaviour (e.g. suggesting that a friend or acquaintance had engaged in the new sexual behavior to see what kind of reaction you get, raising the general issue of trying "new" things in bed, etc.). Finally, indirect-nonverbal strategies involve enacting ambiguous behaviours in the hopes that your partner will intuit your interests (e.g. kissing your partner, doing more nice things for your partner like buying gifts or doing chores, etc.).

Romantic partners typically engage in indirect strategies, particularly indirect-verbal strategies, most frequently (Harris, 2009; Terry Humphreys & Newby, 2007). In addition, romantic partners who have been together for a longer period of time tend to use less direct-nonverbal methods of initiating new sexual behaviours with their partner, and those who are higher in sexual self-disclosure tend to use more verbal methods of initiation (Terry Humphreys & Newby, 2007). However, what this research fails to consider is how the method of initiation will be perceived by the partner who is being initiated with, and certain methods of initiating new sexual behaviours may be perceived more positively than others. In particular, I proposed that although engaging in novel behaviours with one's partner is typically associated with relationship benefits (e.g. Muise et al., 2019), certain methods of initiating these new behaviours could be detrimental.

Poorer sexual communication is associated with lower sexual satisfaction, relationship satisfaction, dyadic adjustment, and emotional intimacy (Cupach & Comstock, 1990; Montesi et al., 2011; Yoo et al., 2014). Given that direct-nonverbal initiation methods involve little or no open communication and in some cases exclude the possibility of obtaining consent prior to enacting the new behaviour (e.g. "During a sexual encounter with your partner, you simply began engaging in the new sexual behavior"), I predicted that participants would be least comfortable with their partner initiating in this way (Hypothesis 1a), that these tactics would be rated as more aggressive (Hypothesis 1b), inconsiderate (Hypothesis 1c), and negative (Hypothesis 1d) than other initiation strategies, and that greater use of these tactics by participants' partners would be

associated with lower sexual satisfaction (Hypothesis 1e) and sexual communication (Hypothesis 1f) for the participant. However, given that more direct methods of initiation still generally offer more opportunities for understanding the initiator's interests than indirect methods, I predicted that participants would report being more likely to consent to direct rather than indirect methods of initiation, and direct-verbal tactics in particular (Hypothesis 2). Additionally, given that sexual communication and sexual self-disclosure have been linked to greater sexual satisfaction (MacNeil & Byers, 2009), I proposed that more frequent use of direct-verbal tactics would be associated with greater sexual satisfaction (Hypothesis 3).

The current data also allowed for the replication and extension of previous research. In particular, past research (Harris, 2009; Terry Humphreys & Newby, 2007) found that undergraduate students report the highest frequency of use of indirect methods of initiating new sexual behaviours. I attempted to replicate this finding with a more general sample of adults, and also predicted that given their greater use of these tactics, participants would also report the most comfort with indirect methods (verbal and nonverbal; Hypothesis 4).

Finally, previous research has failed to consider the context surrounding the new sexual behaviour being initiated. Some sexual behaviours are more commonly engaged in than others, and I proposed that for sexual behaviours that are considered more typical or "normal", individuals may assume that their interest in those behaviours is expected, and they may be less likely to engage in explicit communication of that interest. Therefore, I predicted that participants would report a greater likelihood of using direct-nonverbal strategies when the behaviour they want to initiate is considered "normal" than when the behavior is considered "abnormal" (Hypothesis 5). In contrast, indicating interest in more niche or "abnormal" sexual behaviours is a riskier situation for romantic partners as there is a smaller chance their partner may be interested. Therefore, individuals may seek to gauge their partner's interest in a niche sexual behaviour prior to directly indicating their own interest, thereby reducing the risk to themselves. Therefore, I predicted that participants would report a greater likelihood of using indirect-verbal strategies than other strategies when the behaviour is considered "abnormal" (Hypothesis 6). Similarly, I

proposed that conditions of uncertainty, or the participant being unsure if their partner may be interested in engaging in the new sexual behaviour, would be associated with more indirect approaches to initiating those behaviours (both verbal and nonverbal; Hypothesis 7). Being rejected by one's partner is one of life's most painful emotional experiences (Leary et al., 1998), and indirectly indicating interest in a new sexual behaviour may decrease feelings of rejection if one's partner does not consent to the new behaviour, as the partner is not explicitly turning down one's directly stated desire to engage in the behaviour.

## 4.1 Methods

### 4.1.1 Participants

Participants ($N$ = 1281) were recruited via Amazon's Mechanical Turk (MTurk), and were required to be at least 18 years of age, have an active MTurk account with at least 99% approval from previous experimenters in whose studies they have participated and at least 1000 completed HITs, live in the USA or Canada, be fluent in English, and either be in a romantic relationship for at least 3 months and/or have been sexually active in the past year. Additionally, participants must have correctly completed 3 attention checks and 2 captchas to be included in the final sample. The final sample, after removing participants who did not meet the inclusion criteria, was 905 individuals aged 18-88 ($M_{Age}$= 32.54, $SD_{Age}$ = 9.24), 49.1% of whom identified as a male and 50.6% as a female. The vast majority were heterosexual (82.8%), in a dating, engaged, or married relationship (94.5%), and were sexually active (96.4%).

Within-subjects ANOVAs were planned, as all participants rated all four categories of behaviours, but I did not know a priori what the magnitude of the correlations between responses would be for the different categories. Therefore, power was estimated as if the categories were independent to be conservative. A power analysis indicated that a sample size of 787 would be needed to find a statistically significant interaction in a 2 (direct vs. indirect) × 2 (verbal vs. nonverbal) ANOVA assuming a small effect size (f = 0.10) with a power level of 0.80 (power estimated using GPower 3.1; Erdfelder et al., 1996; Faul et al., 2007), therefore all analyses should be well-powered.

### 4.1.2 Measures and Procedure

Participants were asked to complete an online questionnaire that assessed their demographic information. Then, participants were asked to indicate how frequently in the past they and their current or most recent romantic partner have used each of the categories of initiation tactics. Participants were then asked to list as many sexual behaviours as they would like in each of the following categories: ones they typically engage in when engaging in sexual activity, ones they sometimes but not typically engage in, and behaviours they have not engaged in before. Their responses to the behaviours they have not engaged in before were then given back to them, and they were asked to imagine their partner was initiating one of those behaviours using the categories of tactics. Participants then indicated what their perceptions of that method of initiation were, as well as their anticipated level of comfort and satisfaction. Additionally, participants were asked to respond to items regarding their sexual satisfaction, and sexual communication with their current or most recent romantic partner, in addition to other relationship measures not used in the current study. The questionnaire took approximately 30 minutes or less for each participant to complete and participants were compensated with $1.25USD.

#### 4.1.2.1 Initiation Methods

Participants were asked to indicate, in the past, how frequently they have used each category of initiation tactics (direct-verbal, direct-nonverbal, indirect-verbal, and indirect-nonverbal) to initiate a new sexual behaviour with their current or most recent romantic partner, and how frequently their partner used each category of tactics to initiate with them (1 = *Never*, 7 = *Always*). Examples of the types of behaviours included in each category were provided. Participants also responded to 1-item measures of the aggressiveness, positivity/negativity, considerateness, and their perceived level of comfort and likelihood of consent for each of the initiation tactic categories on 7-point scales.

#### 4.1.2.2 Likelihood of Use

Participants were asked to imagine that they are interested in incorporating a new sexual behaviour into their relationship with their partner when: the behaviour is one they consider to be atypical or "abnormal", the behaviour is one they consider to be typical or "normal", they believe the behaviour is one their partner will be interested in, and the behaviour is one they are unsure if their partner will be interested in. In each case, participants indicated how likely they would be to use each category of initiation tactics on 7-point scales (1 = *Very unlikely*, 7 = *Very likely*).

#### 4.1.2.3 Sexual Satisfaction

Sexual satisfaction was measured with the Global Measure of Sexual Satisfaction (GMSS; Lawrance & Byers, 1998). Participants responded to five items on 7-point bipolar scales regarding how they feel about their current sexual relationship (e.g. unsatisfying–satisfying, unpleasant–pleasant, good–bad). Items were mean aggregated with higher scores indicating higher sexual satisfaction ($\alpha = .95$, $M = 5.94$, $SD = 1.20$). Only responses from those currently in a romantic relationship were included in analyses with this measure.

#### 4.1.2.4 Sexual communication

Sexual communication was measured with the 4-item Dyadic Sexual Communication Scale (DSC; Catania, 2011). The DSC assesses participants' perceptions of communication processes in their sexual relationships (e.g. "Some sexual matters are too distressing to discuss with my partner", "Talking about sex is a satisfying experience for both of us"). Items were mean aggregated with higher scores indicating higher sexual satisfaction ($\alpha = .72$, $M = 4.47$, $SD = 1.09$). Only responses from those currently in a romantic relationship were included in analyses with this measure.

## 4.2 Results

A series of 2 (direct vs. indirect) × 2 (verbal vs. nonverbal) within-subjects ANOVAs, regressions, and a paired samples t-test were conducted, predicting comfort, sexual satisfaction, sexual communication, perceived aggressiveness, perceived considerateness,

perceived negativity, likelihood of consent, and likelihood of use, with Bonferroni corrections (8 planned tests, so critical adjusted p-value becomes .05/8=.00625) on all analyses to account for the number of tests being conducted and pairwise comparisons to examine differences between specific conditions where appropriate.

Inconsistent with Hypothesis 4, there was no significant main effect of directness on reports of perceived comfort ($F(1, 904) = 5.04$, $p = .025$, $\eta^2 = .006$), but there was a main effect of verbality ($F(1, 904) = 35.52$, $p < .001$, $\eta^2 = .038$), with participants indicating greater comfort with verbal ($M = 5.24$, $SE = .05$) than nonverbal initiation methods ($M = 4.96$, $SE = .05$) in general. Additionally, an interaction of directness and verbality emerged ($F(1, 904) = 236.71$, $p < .001$, $\eta^2 = .208$), such that participants indicated the most comfort with direct-verbal methods ($M = 5.62$, $SE = .05$), more so than direct-nonverbal methods ($M = 4.68$, $SE = .06$, $t(904) = 14.45$, $p < .001$) and indirect-verbal methods ($M = 4.86$, $SE = .06$, $t(904) = 12.21$, $p < .001$). Consistent with Hypothesis 1a, participants indicated the least amount of comfort with direct-nonverbal methods, less than both direct-verbal methods, and indirect-nonverbal methods ($M = 5.24$, $SE = .06$, $t(904) = 8.76$, $p < .001$).

There was a significant main effect of directness on reports of perceived aggressiveness ($F(1, 904) = 399.37$, $p < .001$, $\eta^2 = .306$), and a main effect of verbality ($F(1, 904) = 11.81$, $p = .001$, $\eta^2 = .013$), with participants indicating that direct methods ($M = 4.72$, $SE = .04$) are more aggressive than indirect methods ($M = 3.72$, $SE = .04$), and nonverbal ($M = 4.29$, $SE = .04$) are more aggressive than verbal initiation methods ($M = 4.15$, $SE = .04$) in general. Additionally, although the interaction of directness and verbality was not significant ($F(1, 904) = 6.36$, $p = .012$, $\eta^2 = .007$), consistent with Hypothesis 1b participants indicated direct-nonverbal initiation methods were the most aggressive ($M = 4.84$, $SE = .05$), with direct-verbal methods ($M = 4.60$, $SE = .04$, $t(904) = 4.30$, $p < .001$) and indirect-nonverbal methods ($M = 3.74$, $SE = .06$, $t(904) = 15.86$, $p < .001$) rated as significantly less aggressive.

There was a significant main effect of directness on reports of perceived considerateness ($F(1, 904) = 26.55$, $p < .001$, $\eta^2 = .029$), and a main effect of verbality ($F(1, 904) =$

133.76, $p < .001$, $\eta^2 = .129$), with participants indicating that direct methods ($M = 5.00$, $SE = .04$) are more considerate than indirect methods ($M = 4.77$, $SE = .04$), and verbal ($M = 5.18$, $SE = .04$) are more considerate than nonverbal initiation methods ($M = 4.59$, $SE = .05$) in general. Additionally, consistent with Hypothesis 1c, an interaction of directness and verbality emerged ($F(1, 904) = 245.64$, $p < .001$, $\eta^2 = .214$), such that participants indicated direct-nonverbal initiation methods were the least considerate ($M = 4.37$, $SE = .06$), with direct-verbal methods ($M = 5.63$, $SE = .05$, $t(904) = 17.69$, $p < .001$) and indirect-nonverbal methods ($M = 4.82$, $SE = .06$, $t(904) = 7.34$, $p < .001$) rated as significantly more considerate.

There was a significant main effect of directness on reports of perceived negativity-positivity ($F(1, 904) = 31.37$, $p < .001$, $\eta^2 = .034$), and a main effect of verbality ($F(1, 904) = 66.97$, $p < .001$, $\eta^2 = .069$), with participants indicating that direct methods ($M = 5.18$, $SE = .04$) are more positive than indirect methods ($M = 4.94$, $SE = .05$), and verbal ($M = 5.24$, $SE = .04$) are more positive than nonverbal initiation methods ($M = 4.87$, $SE = .05$) in general. Additionally, consistent with Hypothesis 1d, an interaction of directness and verbality emerged ($F(1, 904) = 268.25$, $p < .001$, $\eta^2 = .229$), such that participants indicated direct-nonverbal initiation methods were the most negative ($M = 4.65$, $SE = .06$), with direct-verbal methods ($M = 5.71$, $SE = .05$, $t(904) = 16.70$, $p < .001$) and indirect-nonverbal methods ($M = 5.09$, $SE = .06$, $t(904) = 7.39$, $p < .001$) rated significantly more positively.

Consistent with Hypothesis 2, there was a significant main effect of directness on reports of participants' perceived likelihood of consenting to the initiation methods ($F(1, 904) = 34.41$, $p < .001$, $\eta^2 = .037$), and a main effect of verbality ($F(1, 904) = 26.82$, $p < .001$, $\eta^2 = .029$), with participants indicating a greater likelihood of consent for direct methods ($M = 5.18$, $SE = .05$) than indirect methods ($M = 4.97$, $SE = .05$), and verbal ($M = 5.18$, $SE = .05$) than nonverbal initiation methods ($M = 4.97$, $SE = .06$) in general. Additionally, an interaction of directness and verbality emerged ($F(1, 904) = 143.69$, $p < .001$, $\eta^2 = .137$), such that participants indicated they are more likely to consent to direct-verbal initiation methods ($M = 5.50$, $SE = .05$) than direct-nonverbal methods ($M = 4.87$, $SE = .06$, $t(904)$

= 11.70, $p < .001$) and indirect-verbal methods ($M = 4.87$, $SE = .06$, $t(904) = 12.88$, $p < .001$).

I then transitioned from examining how participants imagine perceiving the initiation tactics in a hypothetical future event to examining the association of participants' perceptions of their partner's actual frequency of use of the initiation tactics with their sexual satisfaction and communication. A multivariate regression with participants' reports of their partner's frequency of use of each of the categories of initiation tactics predicting sexual satisfaction indicated that only 6.2% of the variance in sexual satisfaction can be explained by the frequency of use variables. However, the regression model predicted sexual satisfaction significantly well ($F(4, 840) = 14.00$, $p < .001$). Inconsistent with Hypothesis 1e, frequency of use of direct-nonverbal tactics did not significantly predict sexual satisfaction ($B = .02$, $t(840) = .60$, $p = .55$), nor did indirect-verbal ($B = -.05$, $t(840) = -1.26$, $p = .21$) or indirect-nonverbal tactics ($B = .06$, $t(840) = 1.68$, $p = .09$). However, consistent with Hypothesis 3 partners' frequency of use of direct-verbal tactics significantly predicted greater sexual satisfaction ($B = .24$, $t(840) = 6.79$, $p < .001$).

A multivariate regression with participants' reports of their partner's frequency of use of each of the categories of initiation tactics predicting sexual communication indicated that 14.5% of the variance in sexual communication can be explained by the frequency of use variables. The regression model predicted sexual communication significantly well ($F(4, 841) = 35.57$, $p < .001$). Inconsistent with Hypothesis 1f, frequency of use of direct-nonverbal tactics did not significantly predict sexual communication ($B = -.02$, $t\ (841) = -.73$, $p = .464$), nor did indirect-nonverbal tactics ($B = .01$, $t\ (841) = .37$, $p = .712$) or indirect-verbal tactics ($B = -.01$, $t(841) = -.47$, $p = .637$). However, partners' frequency of use of direct-verbal tactics significantly predicted greater sexual communication ($B = .23$, $t\ (841) = 11.46$, $p < .001$).

Finally, I examined participants' reports of their own likelihood of use of each of the initiation methods under different circumstances. Consistent with Hypothesis 5, a paired-samples t-test found that participants were significantly more likely to report using direct-

nonverbal methods of initiating a new sexual behaviour when they considered the new sexual behaviour to be "normal" ($M$ = 4.96, $SD$ = 1.91) versus "abnormal" ($M$ = 3.46, $SD$ = 1.94, $t(903) = 21.40$, $p < .001$).

Inconsistent with Hypothesis 6, there was a significant main effect of directness on reports of participants' likelihood of use of an initiation method if they considered the new sexual behaviour to be "abnormal" ($F(1, 903) = 50.17$, $p < .001$, $\eta^2 = .053$), and a main effect of verbality ($F(1, 903) = 151.36$, $p < .001$, $\eta^2 = .144$), with participants indicating a greater likelihood of using direct methods ($M$ = 4.17, $SE$ = .05) than indirect methods ($M$ = 3.79, $SE$ = .05), and verbal ($M$ = 4.40, $SE$ = .05) than nonverbal initiation methods ($M$ = 3.56, $SE$ = .06) in the event of interest in an "abnormal" sexual behaviour. Additionally, an interaction of directness and verbality emerged ($F(1, 904) = 142.58$, $p < .001$, $\eta^2 = .136$), such that participants indicated they are more likely to use direct-verbal initiation methods ($M$ = 4.89, $SE$ = .07) to indicate interest in an "abnormal" sexual behaviour than direct-nonverbal methods ($M$ = 3.46, $SE$ = .07, $t(904) = 16.25$, $p < .001$) and indirect-verbal methods ($M$ = 3.92, $SE$ = .07, $t(904) = 11.83$, $p < .001$).

There was a significant main effect of directness on reports of participants' likelihood of use of an initiation method if they were unsure if their partner is interested in engaging in the new sexual behaviour ($F(1, 904) = 107.39$, $p < .001$, $\eta^2 = .106$), and a main effect of verbality ($F(1, 904) = 97.64$, $p < .001$, $\eta^2 = .097$), with participants indicating a greater likelihood of using direct methods ($M$ = 4.60, $SE$ = .04) than indirect methods ($M$ = 4.04, $SE$ = .05), and verbal ($M$ = 4.67, $SE$ = .05) than nonverbal initiation methods ($M$ = 3.97, $SE$ = .06) in the event of uncertainty of their partner's interest. Additionally, an interaction of directness and verbality emerged ($F(1.00, 904) = 202.92$, $p < .001$, $\eta^2 = .183$), such that participants indicated they are more likely to use direct-verbal initiation methods ($M$ = 5.32, $SE$ = .06) when unsure of their partner's interest than direct-nonverbal methods ($M$ = 3.88, $SE$ = .07, $t(904) = 16.20$, $p < .001$) and indirect-verbal methods ($M$ = 4.02, $SE$ = .07, $t(904) = 15.90$, $p < .001$). These results are inconsistent with Hypothesis 7.

## 4.3 Discussion

The results of the current study demonstrate that some tactics for initiating new sexual behaviours may be perceived as more effective by the person receiving them than others. In particular, consistent with hypotheses respondents indicated that direct-nonverbal methods of initiation were the least comfortable and considerate, and the most aggressive and negative. However, participants' reports of their partner's frequency of use of these behaviours was not associated with their sexual satisfaction or communication. Together these results indicate that although there may be a "wrong" way to initiate new sexual behaviours with one's romantic partner (i.e. direct-nonverbal initiation tactics), these methods may not necessarily be detrimental to relationships.

In contrast, direct-verbal methods of initiation were rated as most comfortable, considerate, and positive, and were associated with the highest likelihood of consent. Additionally, the frequency of use of these behaviours was associated with greater sexual communication and satisfaction. Given that these tactics involve direct disclosure of one's sexual interests, this is consistent with previous research demonstrating that sexual communication and sexual self-disclosure are linked to greater sexual satisfaction (MacNeil & Byers, 2009). Thus, greater use of positive methods of initiation (i.e. direct-verbal tactics) appears to be beneficial for relationships. These results suggest that instead of focusing on avoiding negative initiation tactics, guiding romantic partners towards positive, beneficial tactics may be the best means through which to aid romantic partners in achieving relationship benefits. This also provides support for the utility of Studies 4-6, providing information on the best practices in incorporating novelty in romantic relationships.

Additionally, contrary to hypotheses, participants reported the highest likelihood of using direct-verbal initiation methods regardless of the situation described. This is also inconsistent with previous research with undergraduate students which found the highest frequency tactics involved indirect methods of initiating new sexual behaviours (Harris, 2009; Terry Humphreys & Newby, 2007). This difference may be due to differences in sample characteristics, as the current sample was much older than that of the previous

research and was largely involved in long-term romantic relationships. Thus, the methods that romantic partners use to initiate novel sexual behaviours may develop and change over the course of people's lives, as well as over the course of their relationships. Future research should investigate the factors that contribute to the frequency of use of each type of initiation tactic, and thus provide information on who would most benefit from information or interventions regarding how to initiate novel sexual behaviours in a way that maximizes relationship benefits.

As predicted, participants were more likely to use direct-nonverbal methods of initiation when the new sexual behaviour they were initiating was considered "normal" versus "abnormal". Given that direct-nonverbal initiation methods may exclude the possibility of obtaining consent prior to enacting the new behaviour (e.g. "During a sexual encounter with your partner, you simply began engaging in the new sexual behavior"), this indicates that people may be assuming their partner's interest in what they view as more typical sexual behaviours even though it is a novel behaviour and therefore is unlikely to be a behaviour that their partner has consented to before. Thus, people may believe that explicit communication and consent is less necessary for these types of behaviours. In addition, previous research has shown that sexual consent is viewed differently depending on whether the partners are in a romantic relationship or have a shared sexual history, with consent being seen as less relevant in these cases (Brady et al., 2018; Humphreys, 2007; Humphreys & Herold, 2007; Marg, 2020). Given that participants in the current study indicated they were less likely to engage in initiation tactics that involve explicit consent under particular circumstances, future research should examine the circumstances under which romantic partners do and do not obtain consent for novel sexual behaviours, and the impact that not obtaining consent may have on these sexual experiences.

Together this study provides valuable information on how novel sexual behaviours should be incorporated into romantic relationships in order to maximize relationship benefits. Future research should examine how these behaviours develop and change over time, how they are associated with sexual consent, and how and when consent is and is not obtained in romantic relationships. In addition, given the associations of *how* novel

behaviours are initiated with romantic relationship outcomes, in Studies 5 and 6 I further investigated the factors surrounding novelty that contribute to its greater positive impact. That is, in my remaining studies I investigate the best practices in *when* to engage in novel behaviours in romantic relationships.

# Chapter 5

# 5 Studies 5A and 5B

Over the last several decades, romantic relationship and sexuality researchers have strived to describe and model romantic relationship and sexual development and the trajectory of common relationship and sexual behaviours. Previous research (Eastwick et al., 2018) has described these models as taking several forms: those that describe the various linear stages that romantic relationships go through (Knapp, 1978; Levinger, 1980; Levinger & Snoek, 1972), those that focus on the decisions being made and their association with the relationship trajectory (Baxter & Bullis, 1986; Gagné & Lydon, 2004; Huston et al., 1981), and those that focus on the various behaviours and experiences that change over the course of a relationship (Braiker & Kelley, 1979; Clark & Beck, 2011; H. E. Fisher et al., 2002; Hazan & Shaver, 1994; Murstein, 1970). The current study focuses on the latter of these three types of models, by examining the typical progression of novel sexual and nonsexual behaviours across the course of romantic relationships.

The order of common sexual experiences in romantic relationships typically mimics the progression of sexual behaviours across adolescence, beginning with holding hands and kissing, followed by more intimate behaviours such as making out, heavy petting, oral sex, intercourse, and spending the night together (Eastwick et al., 2018; Halpern et al., 2000; Rosenthal & Smith, 1997; Shtarkshall et al., 2009; Smiler et al., 2011; E. A. Smith & Udry, 1985). These behaviours are often preceded by romantic and social events (O'Sullivan et al., 2007), including meeting friends (Keneski, 2016). The order of romantic relationship milestones has also been described, including meeting parents and saying I love you, followed by moving in together, getting engaged, planning a future activity together more than 1 month in advance, taking an overnight trip together, discussing the possibility of marriage, and making a major purchase together (Eastwick et al., 2018; Keneski, 2016).

The focus in this previous research has been on describing the order of the events as they typically occur, rather than focusing on how long into romantic relationships they are

typically incorporated. This provides less specific information to romantic partners on when particular behaviours may be incorporated, and previous research has shown that specificity may be a necessary component for prescriptive beliefs to translate into behavioural outcomes (Harasymchuk et al., 2017). Thus, in the current research I describe not only the order of the incorporation of various novel behaviours into romantic relationships, but also the relationship length at which they are typically incorporated for the first time.

In addition, these relationship trajectories have been associated with relationship outcomes, with more normative relationship development being associated with positive relationship outcomes, such as higher marital satisfaction (Keneski, 2016). These findings indicate that the best practices for engaging in novelty that will maximize novelty's benefits may not only apply to how the novel behaviour is incorporated, but also when it is incorporated. Studies 5A and 5B examine what behaviours, both sexual and nonsexual, individuals consider to be the most novel and exciting to engage in with their romantic partner (Study 5A) and plot the trajectory of these novel behaviours in romantic relationships (Study 5B). These studies will aid in understanding how novelty typically develops and changes over the course of romantic relationships, and also informed Study 6, where I experimentally tested whether following the typical timeline for engaging in novel behaviours is perceived as being associated with relationship benefits.

## 5.1 Study 5A

### 5.1.1 Methods

#### 5.1.1.1 Participants

Participants ($N$ = 616) were recruited via MTurk, and were required to be at least 18 years of age, have an active MTurk account with at least 99% approval from previous experimenters in whose studies they have participated and at least 1000 completed HITs, live in the USA or Canada, be fluent in English, and either be in a romantic relationship for at least 3 months and/or have been sexually active in the past year. Additionally, participants must have correctly completed 3 attention checks and 2 captchas to be

included in the final sample. The final sample, after removing participants who did not meet the inclusion criteria, was 395 individuals aged 20-75 ($M_{Age}$= 37.97, $SD_{Age}$ = 11.32), 51.1% of whom identified as male, 48.6% as female, and 0.3% as intersex. The vast majority were heterosexual (89.1%), and in a dating, engaged, or married relationship (87.9%).

#### 5.1.1.2 Measures and Procedure

Participants were asked to complete an online questionnaire that first assessed their demographic information. Then, participants were randomly sorted into one of two conditions: novel sexual behaviours or novel nonsexual behaviours. Participants were provided with a list of 50-60 behaviours corresponding to the condition they were in and were asked to indicate which behaviours they had engaged in with a partner before. They were also asked to report how exciting they consider each behaviour to be, and how different from other behaviours they believe it would be to engage in that behaviour with a partner for the first time on 7-point scales (1 = *Not at all*, 7 = *Very*). Participants also completed additional questionnaires measuring their responsiveness, self-esteem, relational boredom, sexual boredom, and sexual communal strength. The questionnaire took 20 minutes or less for each participant to complete and participants were compensated with $1.00USD.

### 5.1.2 Results and Discussion

In this study I sought provide descriptive information on which sexual and nonsexual behaviours individuals consider most novel and exciting to engage in with a romantic partner for the first time. This descriptive information is provided in Tables 9 and 10.

I also sought to reduce the number of novel behaviours in the two lists to a more manageable number for Study 5B, where participants would be asked to indicate when these behaviours occurred in their romantic relationship for the first time. I therefore wanted to remove behaviours with a low frequency of engagement and those that are not considered novel and exciting. My original analytic plan included retaining items for Study 5B if they met three cut-off points. The first was that at least 5% of participants must have indicated they have engaged in the behaviour with a romantic partner before.

The second was that, on a 1-7 scale, the average score for each behaviour on how exciting it is to engage in with a partner for the first time must be at the midpoint of the scale (4) or higher. Finally, on a 1-7 scale, the average score for each behaviour on how different it is to engage in with a partner for the first time must be at the midpoint of the scale (4) or higher.

However, following these guidelines there was an insufficient number of items retained for Study 5B (13 nonsexual and 3 sexual behaviours retained). I therefore altered my original plan. First, items were removed that less than 5% of participants indicated they had engaged in with a romantic partner before. Then I selected items that had a mean "exciting" or "different" score that was higher than the mean for that group of behaviours (i.e. sexual or nonsexual behaviours). I then retained items that were in both lists (i.e. above the group mean for both "exciting" and "different"), and any remaining items that were in the top 10 for one of the two categories (i.e. very "exciting" but not "different", or vice versa). This method resulted in retaining 25 novel sexual behaviours and 20 novel nonsexual behaviours.

**Table 9.** Study 5A nonsexual behaviours' exciting and different ratings.

| | Exciting | | Different | |
|---|---|---|---|---|
| Behaviour | Mean | *SD* | Mean | *SD* |
| *Get married | 6.08 | 1.50 | 5.66 | 1.94 |
| *Get engaged | 5.87 | 1.58 | 5.33 | 1.94 |
| *Buy a house/apartment together | 5.80 | 1.43 | 5.23 | 1.87 |
| *Say I love you for the first time | 5.55 | 1.54 | 4.67 | 2.00 |
| *Have or adopt a child together | 5.54 | 2.02 | 5.64 | 2.04 |
| *Move in together | 5.53 | 1.62 | 4.94 | 1.93 |
| *Take a vacation together | 5.34 | 1.45 | 4.11 | 1.89 |
| Skydive together | 5.16 | 2.02 | 4.71 | 2.29 |
| *Take an overnight trip together | 5.07 | 1.52 | 3.84 | 1.88 |
| *Get a pet together | 5.05 | 1.72 | 4.32 | 2.00 |
| Bungee jump together | 4.92 | 2.04 | 4.59 | 2.23 |
| *Go on a road trip together | 4.86 | 1.68 | 3.66 | 1.90 |
| *Zip line together | 4.80 | 1.92 | 4.09 | 2.21 |
| *Give your partner a key to your house/apartment and/or receive a key from them | 4.67 | 1.79 | 4.02 | 1.95 |
| *Discuss a shared future (e.g. relationship status, desire for children, living situation, career aspirations, etc.) | 4.61 | 1.74 | 4.05 | 1.90 |
| *Plan a future activity together more than 1 month in advance (e.g. vacation, concert, etc.) | 4.60 | 1.68 | 3.85 | 1.86 |
| Go to a concert or music festival | 4.50 | 1.76 | 3.02 | 1.75 |
| *Introduce them to your family and/or meet their family | 4.44 | 1.68 | 4.01 | 1.89 |
| Buy a present for or receive a present from your partner (e.g. birthday, holiday, etc.) | 4.38 | 1.71 | 3.09 | 1.78 |
| Go to a theme park | 4.35 | 1.88 | 3.08 | 1.84 |
| *Go rock climbing | 4.33 | 1.91 | 4.15 | 2.13 |
| *Host a party together | 4.33 | 1.66 | 3.61 | 1.89 |
| *Attend a family holiday event together | 4.30 | 1.70 | 3.79 | 1.80 |

| | | | | |
|---|---|---|---|---|
| Introduce them to your friends and/or meet their friends | 4.19 | 1.70 | 3.39 | 1.84 |
| *Go camping | 4.15 | 1.72 | 3.59 | 1.95 |
| Go to the beach | 4.14 | 1.78 | 2.92 | 1.80 |
| Go skeet shooting or to a gun range | 4.10 | 1.91 | 3.82 | 2.11 |
| Go to a food festival | 4.09 | 1.74 | 2.65 | 1.72 |
| Play a sport together (e.g. skiing, snowboarding, tubing, etc.) | 4.05 | 1.73 | 3.40 | 1.93 |
| Play tag games (e.g. laser tag, archery tag, paintballing, etc.) | 4.05 | 1.82 | 3.49 | 1.97 |
| Go hiking | 3.99 | 1.76 | 3.10 | 1.81 |
| Go ice or roller skating | 3.89 | 1.78 | 3.20 | 1.81 |
| Attend a wedding together | 3.89 | 1.74 | 3.54 | 1.91 |
| Take a class together (e.g. cooking class, dance lessons, art class, etc.) | 3.88 | 1.71 | 3.49 | 1.91 |
| Go dancing or to a dance club | 3.83 | 1.96 | 3.28 | 1.98 |
| Try a new cuisine together | 3.83 | 1.82 | 2.77 | 1.79 |
| Go to a theatre or art performance | 3.83 | 1.71 | 2.95 | 1.77 |
| Go to a sporting event | 3.82 | 1.76 | 2.90 | 1.82 |
| *Share finances | 3.82 | 1.93 | 4.71 | 1.98 |
| Tour a winery/brewery/distillery | 3.82 | 1.87 | 3.14 | 1.86 |
| Disclose information about significant life events | 3.79 | 1.69 | 3.70 | 1.93 |
| Introduce them to coworkers and/or meet their coworkers (e.g. company holiday party or event) | 3.69 | 1.71 | 3.25 | 1.71 |
| Go out for dinner | 3.68 | 1.82 | 2.46 | 1.72 |
| Have a picnic | 3.66 | 1.76 | 2.63 | 1.64 |
| Play games together (e.g. board games, escape room, video games) | 3.64 | 1.84 | 2.74 | 1.69 |
| Change your relationship status on social media | 3.61 | 1.93 | 3.30 | 1.95 |
| Leave personal items in your partner's home (e.g. toothbrush, change of clothes, etc.) | 3.59 | 1.85 | 3.31 | 1.85 |
| Cook dinner together | 3.57 | 1.76 | 2.68 | 1.60 |
| Go to a museum and/or attend an art show | 3.51 | 1.79 | 2.84 | 1.76 |
| Visit a park | 3.49 | 1.75 | 2.60 | 1.62 |
| Exercise together (e.g. go to the gym, go for a run, etc.) | 3.48 | 1.80 | 3.34 | 1.86 |
| Go out for a drink | 3.47 | 1.89 | 2.44 | 1.62 |
| Go to a movie | 3.43 | 1.79 | 2.43 | 1.72 |
| Take a picture together | 3.41 | 1.91 | 2.67 | 1.73 |
| Disclose information about your engagement in a non-mainstream hobby (e.g. live action role playing, collecting items, geocaching, magic tricks, etc.) | 3.40 | 1.75 | 3.24 | 1.95 |
| Begin watching a t.v. series together | 3.31 | 1.84 | 2.43 | 1.59 |
| Follow each other and/or send each other things on social media | 3.31 | 1.85 | 2.72 | 1.76 |
| Discuss controversial topics (e.g. political affiliations, religion, etc.) | 3.28 | 1.74 | 2.97 | 1.67 |
| Discuss an issue you and/or they are having with a friend or family member | 3.16 | 1.71 | 3.14 | 1.81 |
| Go out for coffee | 2.98 | 1.78 | 2.30 | 1.65 |
| Discuss previous romantic relationships | 2.95 | 1.69 | 3.17 | 1.80 |
| Bring them to your or attend their religious service | 2.94 | 1.90 | 3.70 | 2.01 |

*Note*. *Indicates item was retained for Study 5B

**Table 10.** Study 5A sexual behaviours' exciting and different ratings.

| | Exciting | | Different | |
|---|---|---|---|---|
| Behaviour | Mean | *SD* | Mean | *SD* |
| *Vaginal sex | 5.32 | 1.73 | 2.82 | 2.16 |
| *Oral sex | 5.13 | 1.66 | 2.86 | 1.96 |
| *Incorporate new sexual position(s) | 4.93 | 1.53 | 3.34 | 1.79 |
| *Manual stimulation (e.g. hand job, fingering, etc.) | 4.74 | 1.65 | 2.71 | 1.81 |
| *Nipple stimulation | 4.45 | 1.75 | 2.66 | 1.83 |
| *Showering together | 4.44 | 1.71 | 2.95 | 1.83 |
| *Incorporate sex toys into sexual activity | 4.44 | 1.80 | 4.06 | 1.92 |
| *Kissing | 4.37 | 1.87 | 2.24 | 1.81 |
| *Sexual activity without a condom/dental dam/etc. | 4.35 | 2.02 | 3.18 | 2.08 |
| *Spend the night together (i.e. one of you spends the night) | 4.32 | 1.87 | 2.64 | 1.90 |
| *Discuss/incorporate sexual activity in new locations | 4.24 | 1.69 | 3.78 | 1.85 |
| *Sexual activity in public place | 4.21 | 2.09 | 5.03 | 1.83 |
| Skinny dip together | 4.09 | 1.70 | 3.52 | 1.93 |
| Massage | 4.04 | 1.80 | 2.47 | 1.64 |
| *Strip tease or lap dance | 4.03 | 1.78 | 3.71 | 1.82 |
| Dirty talk | 4.01 | 1.72 | 3.19 | 1.88 |
| *Discuss/incorporate a fetish | 4.00 | 1.91 | 4.22 | 1.92 |
| *Role playing | 3.97 | 1.83 | 4.31 | 1.80 |
| *Masturbation while one partner watches | 3.97 | 1.88 | 3.89 | 2.04 |
| *Engage in dominant/submissive role playing | 3.94 | 1.95 | 4.43 | 1.91 |
| *Discuss and/or incorporate elements of rough sexual activity (e.g. spanking, hair pulling, biting, choking, flogging, etc.) | 3.91 | 2.06 | 4.32 | 2.08 |
| Buy and/or wear lingerie for your partner | 3.90 | 1.79 | 3.18 | 1.83 |
| Ejaculation on partner or self | 3.87 | 1.83 | 3.37 | 1.98 |
| *Watch pornography together | 3.86 | 1.76 | 3.90 | 1.99 |
| *Bondage | 3.82 | 2.12 | 4.97 | 1.89 |
| *Film your sexual activity | 3.82 | 2.05 | 4.97 | 1.93 |
| Discuss your sexual needs and desires | 3.78 | 1.69 | 2.88 | 1.84 |
| Covering eyes during sexual activity (e.g. blindfold) | 3.69 | 1.84 | 3.86 | 1.93 |
| *Anal sex | 3.67 | 2.18 | 5.08 | 1.96 |
| Send and/or receive nude photos | 3.67 | 1.82 | 3.81 | 2.04 |
| Cuddling | 3.65 | 1.85 | 2.21 | 1.73 |
| *Wearing costumes before/during sexual activity | 3.60 | 1.81 | 4.38 | 1.87 |
| Scissoring/rubbing naked genitals together | 3.55 | 1.84 | 3.61 | 2.01 |
| *Engage in sexual activity with multiple partners (e.g. threesome, orgy, group sex, etc.) | 3.52 | 2.26 | 6.03 | 1.65 |
| Sexting (send and/or receive sexually explicit text messages) | 3.49 | 1.71 | 3.27 | 1.97 |
| Voyeurism (e.g. you and your partner watch other people engage in sexual activity) | 3.47 | 2.04 | 5.49 | 1.75 |
| Swallowing ejaculate | 3.42 | 2.00 | 3.88 | 2.09 |
| Phone sex | 3.42 | 1.74 | 3.45 | 1.93 |
| Hand holding | 3.41 | 1.93 | 2.10 | 1.71 |
| Dry humping/clothed body to body rubbing | 3.41 | 1.78 | 2.88 | 1.89 |
| Temperature related stimulation (e.g. hot wax, ice cubes, etc.) | 3.34 | 1.71 | 4.14 | 1.92 |
| Incorporate food (e.g. ice cream, chocolate, whipped cream, etc.) into your sexual activity | 3.28 | 1.71 | 4.18 | 1.96 |
| Suggest use of and/or use lubricant | 3.19 | 1.71 | 2.78 | 1.82 |
| Swinging | 3.18 | 2.27 | 6.07 | 1.64 |
| Plan/set aside time for sex | 3.08 | 1.85 | 2.70 | 1.81 |
| Give or receive a hickey | 2.96 | 1.78 | 2.81 | 1.90 |
| *Pegging (i.e. anal sex with a strap on dildo) | 2.71 | 2.04 | 6.01 | 1.63 |
| Discuss sexual (non)exclusivity of relationship | 2.68 | 1.76 | 3.65 | 2.28 |
| Discuss your sexual histories (e.g. number of partners, behaviours engaged in, etc.) | 2.28 | 1.58 | 2.99 | 1.98 |
| Discuss birth control/condom use | 2.05 | 1.55 | 2.31 | 1.66 |
| Discuss STIs/testing history | 1.88 | 1.42 | 2.79 | 1.93 |

*Note*. *Indicates item was retained for Study 5B

## 5.2 Study 5B

### 5.2.1 Methods

#### 5.2.1.1 Participants

Participants ($N$ = 1558) were recruited via MTurk, and were required to be at least 18 years of age, have an active MTurk account with at least 99% approval from previous experimenters in whose studies they had participated and at least 1000 completed HITs, live in the USA or Canada, be fluent in English, and currently be in a romantic relationship lasting at least six months. Additionally, participants must have correctly completed two attention checks and one captcha to be included in the final sample. The final sample, after removing participants who did not meet the inclusion criteria, was 961 individuals aged 20-87 ($M_{Age}$= 39.97, $SD_{Age}$ = 11.82), who had been in their current romantic relationship for between six months and 55.17 years ($M_{Years}$= 10.39, $SD_{Years}$ = 10.56). Approximately half of the sample identified as a male (47.0%) and half as a female (52.8%). The vast majority were heterosexual (87.4%) and were cohabiting with their romantic partner(s) (80.7%).

#### 5.2.1.2 Measures and procedure

Participants were asked to complete an online questionnaire that assessed their demographic information, including the date (month and year) that their current romantic relationship began. Then participants were provided with either the list of novel sexual or nonsexual behaviours (which list they saw was random) developed in Study 5A[6] and asked to indicate which behaviours they have engaged in with their current partner before. Of the items the participants indicated they have not engaged in with their partner before, they were asked to indicate how long into their relationship it would be before it would be appropriate and they would feel comfortable asking their partner to engage in the behaviour. For the behaviours that they indicated they have done with their partner

[6] Due to a coding error, data for the novel sexual behaviour showering together was not recorded, and thus is not included in the timeline.

before, they were asked to indicate when (month and year) they or their partner initiated this behaviour for the first time, whether they continue to engage in the behaviour from that date until the current date, and when they most recently engaged in the behaviour with their partner. Finally, participants were asked to respond to items regarding their sexual satisfaction (Lawrance & Byers, 1998), relationship satisfaction (Hendrick, 1988), partner responsiveness (Reis et al., 2018), relational boredom (Harasymchuk & Fehr, 2012), potential for self-expansion (Lewandowski & Ackerman, 2006), and sexual communal strength (Muise et al., 2013). For the purposes of this study, the only responses used for the analyses were the descriptive information regarding whether they have engaged in the novel behaviour before, and if so, when. This study took 20 minutes or less to complete, and participants were compensated with $1.00 (USD).

### 5.2.2 Results

Using the dates provided regarding the start of the relationship and when each behaviour occurred for the first time, I calculated how long into the relationship it was when participants had engaged in each behaviour with their partner for the first time, and then plotted the average incorporation date for each behaviour on one of two timelines (one for the nonsexual behaviours and one for the sexual behaviours; see Figures 10 and 11), as well as providing the descriptive information in Table 11.

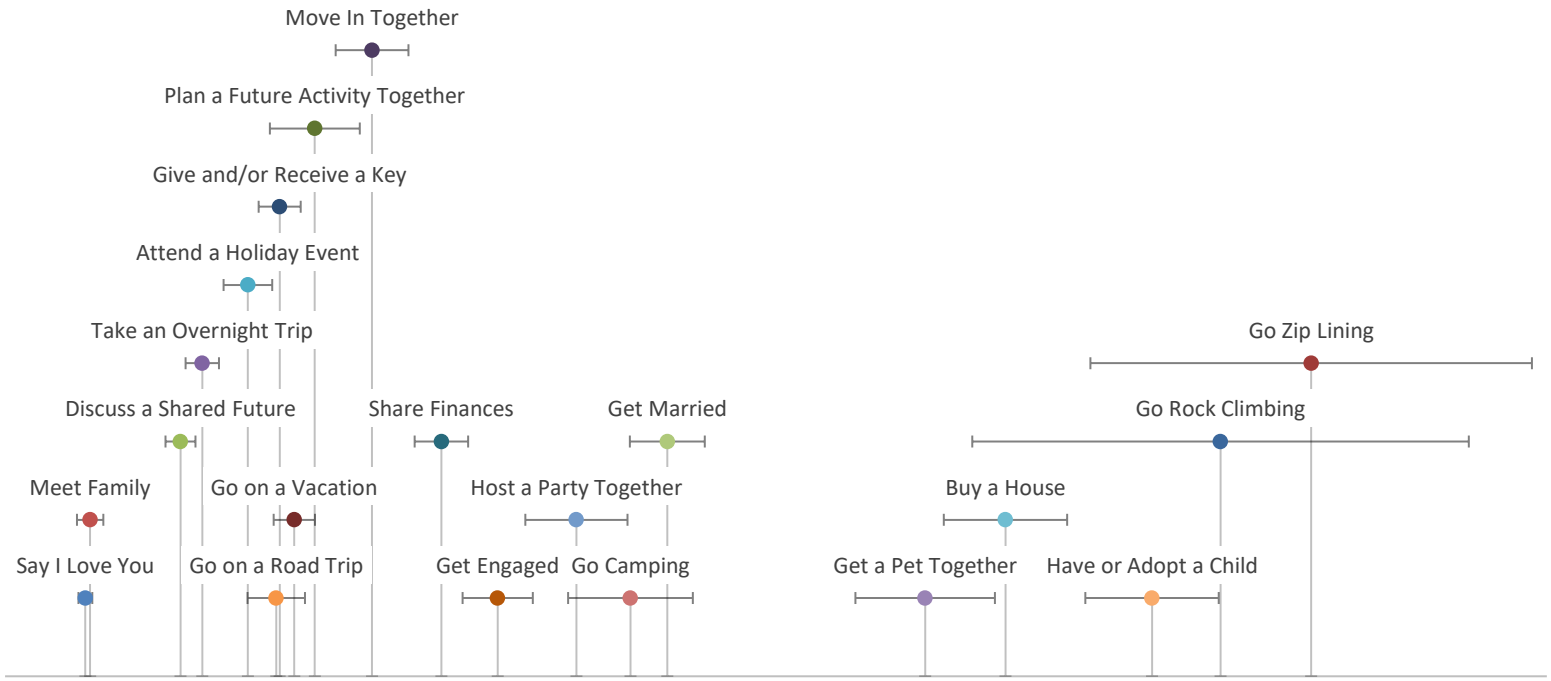


**Figure 10.** Timeline of average incorporation dates for novel nonsexual behaviours. Error bars are the standard error of the mean.

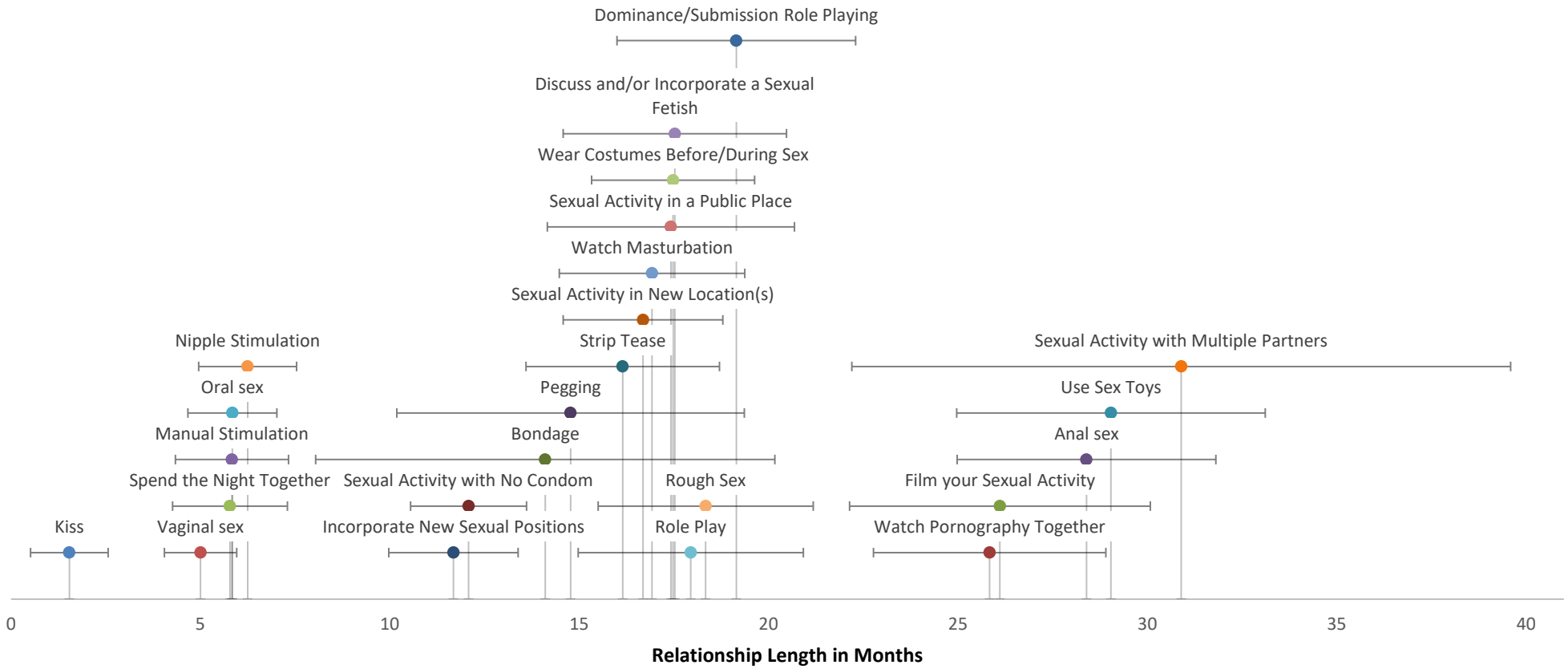


**Figure 11.** Timeline of average incorporation dates for novel sexual behaviours. Error bars are the standard error of the mean.

**Table 11.** Study 5B descriptive information, including average incorporation dates for novel behaviours.

| Behaviour | *n* Engaged In | Incorporation date (months) *M* | *SD* |
|---|---|---|---|
| Kissing | 456 (98.9%) | 1.54 | 21.36 |
| Said "I love you" | 487 (97.4%) | 4.22 | 7.81 |
| Introduced them to your family and/or met their family | 472 (94.4%) | 4.47 | 14.68 |
| Vaginal sex | 442 (95.9%) | 5.00 | 19.40 |
| Spent the night together (i.e. one of you spends the night) | 448 (97.2%) | 5.78 | 30.96 |
| Manual stimulation (e.g. hand job, fingering, etc.) | 444 (96.3%) | 5.83 | 29.75 |
| Oral sex (given by either partner) | 436 (94.6%) | 5.84 | 23.29 |
| Nipple stimulation | 407 (88.3%) | 6.25 | 24.52 |
| Discussed a shared future (e.g. relationship status, desire for children, living situation, career aspirations, etc.) | 478 (95.6%) | 9.22 | 16.37 |
| Took an overnight trip together | 463 (92.6%) | 10.36 | 18.25 |
| Discussed and/or incorporated new sexual positions | 412 (89.4%) | 11.68 | 32.45 |
| Engaged in sexual activity without a condom/dental dam/etc. | 412 (89.4%) | 12.08 | 29.44 |
| Attended a family holiday event together | 451 (90.2%) | 12.76 | 26.70 |
| Bondage | 161 (34.9%) | 14.11 | 61.82 |
| Took a road trip together | 455 (91.0%) | 14.25 | 30.97 |
| Gave your partner a key to your house/apartment and/or received a key from them | 438 (87.6%) | 14.43 | 21.73 |
| Pegging (i.e. anal sex with a strap on dildo) | 36 (7.8%) | 14.77 | 25.54 |
| Took a vacation together | 453 (90.6%) | 15.20 | 22.47 |
| Strip tease or lap dance (by either partner) | 210 (45.6%) | 16.15 | 34.74 |
| Planned a future activity together more than 1 month in advance (e.g. vacation, concert, etc.) | 483 (96.6% | 16.27 | 49.49 |
| Discussed and/or incorporated sexual activity in new locations | 295 (64.0%) | 16.69 | 33.45 |
| Masturbation while one partner watches | 273 (59.2%) | 16.93 | 36.89 |
| Engaged in sexual activity in a public place | 170 (36.9%) | 17.42 | 40.75 |
| Wore costumes before and/or during sexual activity | 128 (27.8%) | 17.48 | 22.36 |
| Discussed and/or incorporated a sexual fetish | 213 (46.2%) | 17.53 | 40.21 |
| Engaged in role playing | 166 (36.0%) | 17.95 | 34.41 |
| Discussed and/or incorporated elements of rough sexual activity (e.g. spanking, hair pulling, biting, choking, flogging, etc.) | 255 (55.3%) | 18.34 | 43.16 |
| Engaged in dominance/submission role playing | 161 (34.9%) | 19.15 | 37.27 |
| Moved in together | 392 (78.4%) | 19.28 | 36.84 |
| Shared finances | 384 (76.8%) | 22.92 | 26.40 |
| Watched pornography together | 248 (53.8%) | 25.84 | 45.92 |
| Got engaged | 311 (62.2%) | 25.88 | 31.67 |
| Filmed your sexual activity | 100 (21.7%) | 26.11 | 37.67 |
| Anal sex | 185 (40.1%) | 28.40 | 43.07 |
| Incorporated sex toys into sexual activity | 270 (58.6%) | 29.04 | 62.45 |
| Hosted a party together | 364 (72.8%) | 30.02 | 49.78 |
| Engaged in sexual activity with multiple partners (e.g. threesome, orgy, group sex, etc.) | 42 (9.1%) | 30.90 | 54.31 |
| Went camping | 231 (46.2%) | 32.86 | 48.26 |
| Got married | 277 (55.4%) | 34.79 | 32.34 |
| Got a pet together | 296 (59.2%) | 48.34 | 59.65 |
| Bought a house/apartment/condo/etc. together | 284 (56.8%) | 52.56 | 52.95 |
| Had or adopted a child | 170 (34.0%) | 60.26 | 44.74 |
| Gone rock climbing | 55 (11.0%) | 63.86 | 91.30 |
| Gone zip lining together | 58 (11.6%) | 68.62 | 86.01 |

## 5.3 Study 5 General Discussion

Studies 5A and 5B provide descriptive information on which behaviours romantic partners consider to be most novel to engage in with a romantic partner for the first time, and when they typically do so. Interestingly, in many cases the items selected for the novel nonsexual behaviours are reflective of the relationship milestone behaviours discussed in previous research. Retaining these types of items allowed Study 5B to attempt to replicate the findings from previous research regarding the order of these milestone behaviours in romantic relationships (e.g. Eastwick et al., 2018; Keneski, 2016), and extend them to include specific reference points (i.e. relationship length at which it commonly occurs). Results from Study 5B regarding these relationship milestone behaviours generally followed the order found in previous research (e.g. Eastwick et al., 2018), reflecting incremental investment and commitment as relationships progress.

In addition, finding that milestone behaviours are considered among the most novel and exciting to engage in with a romantic partner has interesting implications for commitment processes in romantic relationships. Reaching various relationship milestones often involves greater commitment and investment into one's relationship (e.g. getting married), however the results of Study 5A suggest that people may not only engage in these behaviours to increase commitment, but also to experience novelty. If people are engaging in these milestone behaviours to cope with relational boredom or to experience the benefits of novelty, this could be particularly problematic for those in unfulfilling romantic relationships. That is, if people are engaging in milestone behaviours as a means of experiencing novelty and reducing boredom, they may inadvertently become more willing to stay in these potentially unfulfilling relationships since they may then perceive themselves and their partner as highly invested (Joel et al., 2013). Thus, viewing milestone behaviours as a form of novelty may lead romantic partners to be more likely to stay in unsatisfying relationships.

Regarding when the novel behaviours are typically incorporated, consistent with previous research (O'Sullivan et al., 2007) the more common the novel behaviour the earlier it typically occurred in participants' relationship trajectory. However, this was not the case for some novel sexual behaviours, such as bondage and pegging, which typically occurred earlier than one might expect based solely on the proportion of people engaging in these behaviours. However, the more common and early sexual behaviours generally reflected the order found in previous research regarding both adolescent and romantic relationship sexual trajectories (Eastwick et al., 2018; Halpern et al., 2000; Rosenthal & Smith, 1997; Shtarkshall et al., 2009; Smiler et al., 2011; E. A. Smith & Udry, 1985). Extending this previous research, the current study provides this descriptive information for a wider variety of sexual behaviours, including those that typically occur in later relationship stages.

Interestingly, the timelines generated for the novel sexual and nonsexual behaviours span very different time periods. That is, although the majority of novel behaviours across both categories occurred for the first time within the first 1.5 years of relationships, the span of time for all of the novel nonsexual behaviours was over double that of the novel sexual behaviours. That is, all of the most novel and exciting nonsexual behaviours to engage in with a romantic partner occurred, on average, over the first 68.62 months (5.72 years). However, the novel sexual behaviours all occurred for the first time over 30.90 months (2.58 years). This accelerated timeline may be a contributing factor to the typical decline in sexual desire and satisfaction as relationships progress (Johnson et al., 1994; Klusmann, 2002; Schmiedeberg & Schröder, 2016). That is, as novelty has been linked to greater sexual desire (Muise et al., 2019; Sims & Meana, 2010), couples typically burning through all of their "firsts" for the most novel sexual behaviours within the first three years of their relationships may contribute to lower sexual desire and satisfaction long-term. Future research could examine whether elongating the traditional timeline over a greater period, and thus prolonging new and novel experiences, could buffer against the typical decline in satisfaction and desire over the course of romantic relationships.

In sum, Studies 5A and 5B provided descriptive information on which behaviours are considered most novel and exciting to engage in with a romantic partner for the first time, and when these behaviours are typically incorporated into romantic relationships. The findings were able to both replicate and extend that of previous research examining the order of typical relationship and sexual trajectories by also gathering information on the specific timelines in which these events typically occur, as well as including a wider variety of behaviours than examined in previous research. Future research should examine the potential long-term detriments of engaging in milestone behaviours for the purposes of experiencing novelty, and potential benefits of elongating one's relationship novelty timeline to maintain desire and satisfaction in the long-term.

# Chapter 6

# 6 Study 6

Previous research has demonstrated that following a normative trajectory for relationship milestone behaviours is associated with greater marital satisfaction (Keneski, 2016). This also indicates that deviations from normative timelines may be associated with lower relationship satisfaction and quality. In Study 6, I extend this previous research to determine whether following normative timelines for novel sexual and nonsexual behaviours is perceived as beneficial for relationships, and whether deviations are perceived as detrimental. In particular, I ran an experiment that provided participants with a hypothetical romantic couple where one partner is planning to initiate a novel behaviour with the other, and asked participants to imagine how each partner in the situation would feel. The length of time the couple has been together varied by condition, as well as the novel activity that was presented so that it was either one that is typical to engage in for the first time given their relationship length, or it was one that is typically engaged in at an earlier or later time for the first time, in addition to being either a sexual or nonsexual novel behaviour, creating eight conditions: matching at 6 months (sexual behaviour), matching at 3 years (sexual behaviour), sexual behaviour is early (3 year sexual behaviour in the 6 month relationship), sexual behaviour is late (6 month sexual behaviour in the 3 year relationship), matching at 6 months (nonsexual behaviour), matching at 3 years (nonsexual behaviour), nonsexual behaviour is early (3 year nonsexual behaviour in the 6 month relationship), or nonsexual behaviour is late (6 month nonsexual behaviour in the 3 year relationship).

Consistent with previous research demonstrating that following normative timelines in romantic relationships is associated with higher marital satisfaction (Keneski, 2016), I predicted that the relationship satisfaction (Hypothesis 1) and positive affect (Hypothesis 2) of the partner receiving the novel behaviour initiation would be rated as higher in the conditions when the behaviour matched the relationship length than when the behaviour did not match the relationship length, with the largest differences when the behaviour was early compared to matching. In contrast, I predicted that negative affect of the partner

receiving the initiation (Hypothesis 3) and the couple's likelihood of breakup (Hypothesis 4) would be rated as higher in the conditions when the behaviour did not match the relationship length than when the behaviour matched the relationship length, with the largest differences when the behaviour was early compared to matching. Finally, I also explored whether these effects vary based on whether the novel behaviour being initiated is sexual or nonsexual in nature.

## 6.1 Method

### 6.1.1 Participants

Participants ($N$ = 875) were recruited online from Prolific. Through the pre-screening options on Prolific, participants were required to be at least 18 years of age, have an active Prolific account with at least 97% approval from at least 10 previous studies they had participated in, live in the UK, USA or Canada, and be fluent in English to access the survey. Potential participants were then removed if they reported in the survey that they did not meet inclusion criteria (did not consent to participate, $n$ = 11; under 18 years of age, $n$ = 1; not fluent in English, $n$ = 10) or they failed an attention check ($n$ = 48). The final sample was 805 individuals, with between 95 and 104 participants in each condition. Participants in the final sample were between the ages of 18 and 72 ($M_{Age}$ = 32.83, $SD_{Age}$ = 11.37), and predominantly female (66.5%), heterosexual (84.0%), in a dating, engaged, or married relationship (69.2%), and living with at least one romantic partner (54.2%). The survey took 7 minutes or less to complete, and participants were compensated with £0.88.

A power analysis indicated that a sample size of 787 would be needed to find a statistically significant interaction in a 2 (relationship length: six months vs. three years) × 2 (typical behaviour incorporation: six months vs. three years) x 2 (type of behaviour: sexual vs. nonsexual) ANOVA assuming a small effect size (f = 0.10) with a power level of 0.80 (power estimated using GPower 3.1; Erdfelder et al., 1996; Faul et al., 2007), thus the sample collected should have sufficient power.

### 6.1.2 Procedure

Participants were asked to complete an online questionnaire that assessed their demographic information. Then participants were provided with a hypothetical romantic couple and an event the couple is encountering. The length of time the couple had been together varied by condition, as well as the novel activity that was presented so that it was either one that was typical to engage in for the first time given their relationship length, or it was one that is typically engaged in at an earlier or later time for the first time, creating the eight conditions discussed previously. Then participants answered questions regarding how they think each partner would feel, how satisfied they believe each partner is with the relationship, and how likely it is that the couple will break up.

### 6.1.3 Materials

#### 6.1.3.1 Vignettes

Two novel behaviours were selected from each timeline in Study 5B based on the proximity of their average first initiation date to six months and three years into a relationship. This resulted in “introduce them to your family” (six months) and “get married” (three years) to be selected for the nonsexual behaviours, and “oral sex” (six months) and “engage in sexual activity with multiple partners” (three years) to be selected for the sexual behaviours. However, there was concern that the stigma associated with engaging in sexual activity with multiple partners, as well as having a potential third (or more) person involved in the relationship was not comparable to the behaviours in the other conditions. Thus, I selected the next closest behaviour to the 3-year mark for sexual behaviours, which was “incorporate sex toys into your sexual activity”. These behaviours and the relationship length manipulation were then incorporated into the following vignette:

“Sam and Avery are a romantic couple who have been together for about (6 months/3 years). They share similar values and spend a lot of time together, and particularly enjoy binging Netflix shows and cooking dinner together. Overall, they both appear happy with where the relationship is going.

Recently, Avery has been thinking about asking Sam to (meet their family/get married/engage in oral sex/incorporate sex toys into their sexual activity). Sam hasn't expressed interest in (meeting their family/getting married/engaging in oral sex/incorporating sex toys into their sexual activity) before, but also hasn't said that they would never do it, they just haven't talked about it before. Avery is particularly worried that (it might be too soon to ask/the timing may not be right/they waited too long to ask), but is hopeful that Sam will be interested.

The next week, Avery asks Sam to (meet their family/get married/engage in oral sex/incorporate sex toys into their sexual activity)."

#### 6.1.3.2 Relationship Satisfaction

Three items adapted from the IMS ("Sam and Avery's relationship is much better than others' relationships", "Sam feels satisfied with their relationship", "Their relationship makes Sam happy"; Rusbult et al., 1998) were used to measure relationship satisfaction. Possible responses were on a 9-point scale (1 = *Do not agree at all*, 9 = *Agree completely*; $\alpha = .73$, $M = 6.34$, $SD = 1.11$).

#### 6.1.3.3 Positive and Negative Affect

The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) is a 20-item scale that asks participants to respond to positive (10 items) and negative (10 items) mood adjectives on a 5-point scale (1 = *Very slightly or not at all*, 5 = *Extremely*). Of these, four positive ("enthusiastic", "excited", "interested", and "inspired") and five negative ("distressed", "upset", "scared", "nervous", and "afraid") mood adjectives were selected by two independent coders as relevant to the vignettes. Ratings on these relevant items were aggregated to create the positive ($\alpha = .88$, $M = 2.58$, $SD = .94$) and negative ($\alpha = .88$, $M = 1.77$, $SD = .82$) affect scores.

#### 6.1.3.4 Likelihood of Breakup

Participants' perceptions of how likely it is that Sam and Avery will break up was assessed with two items adapted from previous research (Kelmer et al., 2013; "How likely is it that Sam and Avery will break up within the next year?", "How likely is it that

Sam and Avery will get married?"). Possible responses were on a 5-point scale (1 = *Very unlikely*, 5 = *Very likely*; α = .70, *M* = 2.67, *SD* = .74).[7]

## 6.2 Results

A series of 2 (Type of behaviour: sexual vs. nonsexual) x 2 (Relationship length: six months vs. three years) x 2 (Typical behaviour incorporation: six months vs. three years) ANOVAs were conducted predicting positive affect, negative affect, relationship satisfaction, and likelihood of breakup. Pairwise comparisons with Bonferroni adjustments examined differences between specific conditions.

### 6.2.1 Relationship satisfaction.

A main effect of typical behaviour incorporation ($F(1, 796) = 8.70$, $p = .003$) was found, such that participants thought the couple was less satisfied when they were incorporating a 6-month behaviour (*M* = 6.23, *SE* = .05) than if they were incorporating a 3-year behaviour (*M* = 6.46, *SE* = .06). There was no difference in perceived relationship satisfaction based on whether a sexual or nonsexual novel behaviour was being incorporated ($F(1, 796) = .01$, $p = .942$), or the couple had been together for six months or three years ($F(1, 796) = .25$, $p = .614$). None of the two-way interactions or the three-way interaction were significant. These results are inconsistent with Hypothesis 1.

### 6.2.2 Positive Affect

A main effect of typical behaviour incorporation ($F(1, 795) = 11.07$, $p = .001$) was found, such that participants thought the receiver of the initiation would experience less positive affect when they were incorporating a 6-month behaviour (*M* = 2.47, *SE* = .05) than if they were incorporating a 3-year behaviour (*M* = 2.69, *SE* = .05), and this difference was driven by the nonsexual behaviour conditions. There was no difference in positive affect

[7] Given that one of the items for likelihood of breakup ("How likely is it that Sam and Avery will get married in the next year") is potentially more relevant for some conditions than others (i.e. when the novel behaviour being initiated is marriage), I also ran these analyses excluding this item, and the results were consistent with the two-item scale. Thus, I only present the results for the two-item scale.

based on whether a sexual or nonsexual novel behaviour was being incorporated ($F$(1, 795) = 2.59, $p$ = .108), or the couple had been together for six months or three years ($F$(1, 795) = .81, $p$ = .369). None of the two-way interactions or the three-way interaction were significant. These results are inconsistent with Hypothesis 2.

### 6.2.3 Negative Affect

For perceptions of the partner receiving the initiation's experiences of negative affect, none of the main effects or two-way interactions were significant. However, the three-way interaction was significant ($F$(1, 795) = 5.09, $p$ = .024). Examining the simple main effects, there were no significant differences between conditions if the novel behaviour being initiated was a sexual behaviour. However, for the nonsexual behaviours, matching in a 6-month relationship ($M$ = 1.69, $SE$ = .08) was associated with lower negative affect than if the novel behaviour was initiated early ($M$ = 1.94, $SE$ = .08, $t$(795) = 2.16, $p$ = .031), but not late ($M$ = 1.87, $SE$ = .08, $t$(795) = 1.59, $p$ = .113). Additionally, matching in a 3-year relationship ($M$ = 1.65, $SE$ = .08) was associated with marginally lower negative affect than if the behaviour was initiated late ($t$(795) = 1.90, $p$ = .060) and significantly lower negative affect than if the behaviour was initiated early ($t$(795) = 2.53, $p$ = .014; see Figure 12). Therefore, the results partially support Hypothesis 3, demonstrating that initiating a novel nonsexual behaviour early was perceived as associated with significantly higher negative affect than when the behaviour matched the relationship length. Being late was also associated with higher perceived negative affect than matching, but these differences were marginal or nonsignificant.

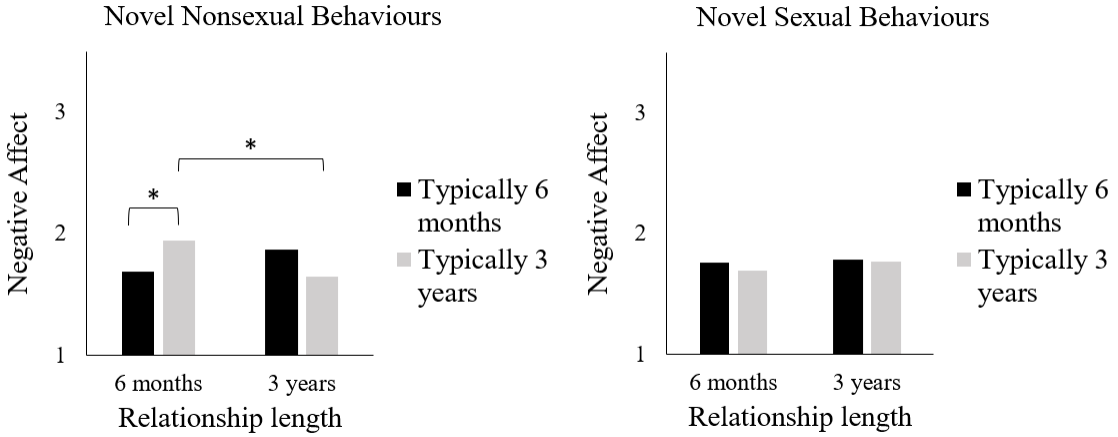

**Figure 12.** Effects of relationship length and typical relationship length the novel behaviour is incorporated at on perceived negative affect for sexual and nonsexual behaviours.

### 6.2.4 Likelihood of Breakup

Main effects of typical behaviour incorporation ($F(1, 796) = 12.93$, $p < .001$) and relationship length ($F(1, 796) = 52.29$, $p < .001$) were found, such that participants thought the couple was more likely to break up when they were incorporating a 6-month behaviour ($M = 2.76$, $SE = .04$) than if they were incorporating a 3-year behaviour ($M = 2.58$, $SE = .04$), and when they had been together for six months ($M = 2.85$, $SE = .04$) rather than three years ($M = 2.49$, $SE = .04$). There was no difference in the likelihood of break up based on whether a sexual or nonsexual novel behaviour was being incorporated ($F(1, 796) = .036$, $p = .850$). The two-way interactions of whether the behaviour was sexual or nonsexual with either typical behaviour incorporation or relationship length were not significant. However, the two-way interaction of typical behaviour incorporation and relationship length ($F(1, 796) = 9.22$, $p = .002$), and the three-way interaction of all predictors ($F(1, 796) = 9.97$, $p = .002$) were significant. Examining the simple main effects, with sexual behaviours there is a significant difference between matching at six months ($M = 2.94$, $SE = .07$) and engaging in the behaviour late ($M = 2.61$, $SE = .07$, $t(796) = 3.27$, $p = .001$) or early ($M = 2.74$, $SE = .07$, $t(796) = 2.00$, $p = .046$), and matching at three years ($M = 2.43$, $SE = .07$) and engaging in the behaviour early ($t(796) = 3.09$, $p = .002$), with the effects appearing to be driven by the main effects of typical behaviour incorporation and relationship length (see Figure 13). However, with nonsexual behaviours both being early ($M = 2.94$, $SE = .07$, $t(796) = 7.05$, $p < .001$) and being late ($M = 2.70$, $SE = .07$, $t(796) = 4.79$, $p < .001$) were associated with a higher likelihood of breakup than matching in a 3-year relationship ($M = 2.23$, $SE = .07$). These results partially support Hypothesis 4.

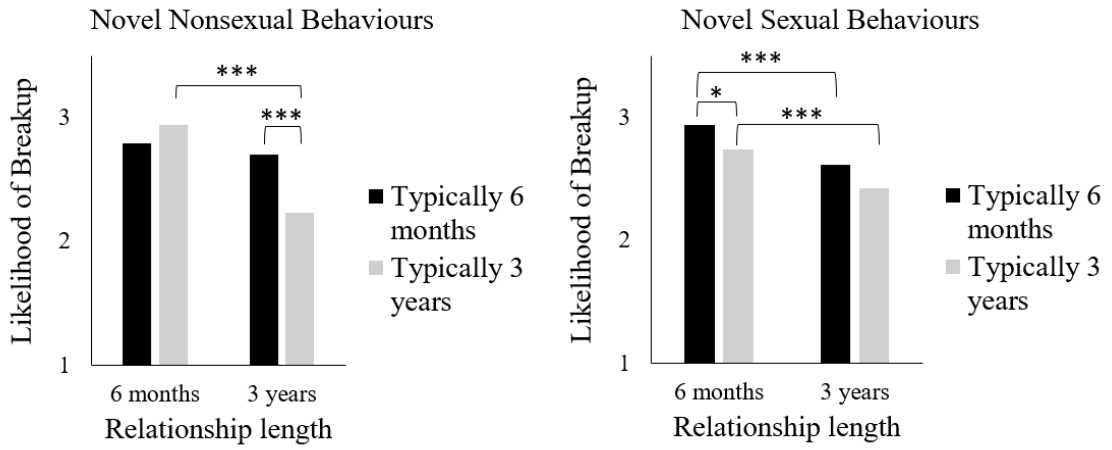


**Figure 13.** Effects of relationship length and typical relationship length the novel behaviour is incorporated at on perceived likelihood of breakup for sexual and nonsexual behaviours.

## 6.3 Discussion

In Study 6 I conducted an experiment examining whether there may be perceived benefits associated with following the normative timeline for initiating novel sexual and nonsexual behaviours in romantic relationships, and whether deviations from the typical timeline are seen as detrimental. I found no support for the idea that there would be perceived relationship benefits (higher relationship satisfaction and positive affect) associated with following the normative timeline for novel behaviours. This is inconsistent with previous research that found actual (rather than perceived) benefits of following the normative timeline for relationship milestones (Keneski, 2016). Given that the novel nonsexual behaviours were also reflective of relationship milestone behaviours, this does not appear to be due to differences in the type of behaviour being initiated (i.e. milestone versus novel behaviour). Rather, this difference may be due to a limitation of the currently study, namely, examining perceived versus actual differences in relationship outcomes. That is, failing to conceptually replicate this effect may be due to people not attributing benefits to following a normative timeline when the benefits do actually exist. If this is the case, providing information to romantic partners on what the normative timeline is for novel behaviours may not be sufficient to motivate them to follow the

timeline, as they may not perceive it as beneficial. Therefore, future research should examine how following the normative timeline for novel behaviours is associated with actual relationship outcomes. If there are actual benefits, this indicates that an account of the best practices for incorporating novel behaviours should not only include information on when to incorporate the behaviours, but also why following this timeline may be beneficial for people's relationships.

Additionally, I found partial support for the perceived detriments (higher negative affect and likelihood of breakup) of deviating from the normative timeline for nonsexual novel behaviours. Initiating a novel nonsexual behaviour early was perceived as invoking greater negative affect than when the behaviour matched the relationship length. Initiating late was also associated with greater perceived negative affect, but these differences were marginal or nonsignificant. Additionally, initiating early and late were both associated with a higher perceived likelihood of breakup than when the behaviour matched the relationship length and the couple had been together for a longer period of time. Together these results indicate there are perceived detriments of deviating from the normative timeline of novelty in romantic relationships, particularly if the deviation involves enacting a novel behaviour earlier than is typical. This supports my a priori rationale that deviations from typical trajectories may be perceived as threatening to relationships. However, it should be noted that the average negative affect and likelihood of breakup did not exceed the midpoint of the scale in any of the conditions. Thus, although there do appear to be perceived detriments associated with deviating from the normative timeline, these deviations did not lead participants to perceive initiating novelty as a wholly negative experience.

Given that adhering to normative timelines was not perceived as being associated with relationship benefits but deviating (particularly initiating early) was perceived as being associated with detriments, this raises questions regarding people's typical motivations for adhering to normative timelines. Previous research (Gable, 2006; Impett et al., 2005) regarding motivations in close relationships has demonstrated that approach motives (motivations to approach rewards) are associated with benefits to the self and the relationship, including lower loneliness and relationship conflict, and higher satisfaction,

positive affect, and closeness. In contrast, avoidance motives (motivations to avoid costs) were associated with higher loneliness, negative social attitudes, relationship insecurity, and negative affect. Given that adhering to normative timelines was only associated with perceived detriments, this indicates that following these timelines for novel behaviours may typically be avoidance motivated. Additionally, this may be an indication that supplying romantic couples with normative timelines for novelty in romantic relationships may actually be detrimental rather than beneficial, as they may focus on avoiding costs rather than gaining benefits, and thus experience the negative outcomes associated with avoidance motives.

Interestingly, the perceived detriments of deviating from the normative timeline did not apply to sexual behaviours. I found no differences in perceived relationship satisfaction, positive affect, negative affect, or likelihood of breakup based on adherence to or deviation from the normative timeline within the novel sexual behaviour conditions. This may be due to the fact that people are fairly inaccurate in their perceptions of the sexual behaviours of others (Cohen & Shotland, 1996; Martens et al., 2006; Scholly et al., 2005; Seal & Agostinelli, 1996; Stephenson & Sullivan, 2009), and therefore may not be aware of what the normative timeline is. It is also possible that people's interests in novel sexual behaviours are less tied to social norms than novel nonsexual behaviours such as relationship milestones, and thus are less tied to normative timelines. With regards to novel sexual behaviours then, future research on the best practices in incorporating sexual novelty should perhaps focus instead on features of the behaviours themselves (i.e. what is being incorporated) such as whether they are included in the partner's sexual ideals (Balzarini et al., 2019), or focus on motivations for novelty (i.e. why it is being incorporated) such as one's motivation to meet a partner's sexual needs (Muise et al., 2013), rather than on sexual novelty trajectories.

In sum, Study 6 demonstrates the perceived detriments associated with deviating from normative timelines, and how these deviations may only apply to specific types of novel behaviours. Results suggest that normative timelines may not be a central feature of the best practices for engaging in novelty. Future research may benefit from examining

additional situational and individual differences that may moderate the benefits of incorporating novelty into romantic relationships.

# Chapter 7

# 7 Summary and Conclusion

Relational boredom is both a pervasive and detrimental relationship experience. However, previous research suggests that engaging in novel, self-expanding behaviours with one's partner may be an effective means of reducing boredom. The current research went beyond examining how absolute levels of relational boredom and novelty may impact relationship quality to examine how these experiences are perceived by relationship partners.

In Studies 1-3, I examined the interplay of directional bias and tracking accuracy in partners' perceptions of each other's relational boredom, and how these perceptual processes are associated with partners' relationship quality, including cross-sectional and longitudinal dyadic data. Results demonstrated that romantic partners tend to overestimate each other's relational boredom, project their own experiences of boredom onto their perceptions of their partner's experiences, and accurately track their partner's boredom both across the various features that comprise boredom and across time. For perceivers, accuracy at high levels of relational boredom was associated with lower relationship satisfaction, commitment, and trust, but these facets of relationship quality were preserved if the perceiver underestimated, overestimated, or was accurate at low levels of boredom. For partners, accuracy at high levels of boredom was also consistently associated with lower relationship quality, and was only consistently preserved if the perceiver overestimated or was accurate at low levels. I examined one mechanism through which overestimation may provide particular benefits to romantic partners: signaling the need for engagement in boredom coping behaviours. However, accuracy and bias in perceptions of one's partner's relational boredom were not associated with perceivers' engagement in boredom coping behaviours.

This result suggests that individuals' perceptions of their partner's relational boredom may not trigger effective means of coping with said boredom. In addition, previous research demonstrated that prescriptive beliefs regarding the utility of growth-enhancing

behaviours to combat relational boredom are more likely to translate into behavioural outcomes if the task is specific (Harasymchuk et al., 2017), indicating that romantic partners may benefit from specific information regarding how to best incorporate novelty into their romantic relationships. Studies 4-6 therefore examined "best practices" in the incorporation of novelty into one's romantic relationship, including determining behavioural and temporal recommendations regarding the introduction of novel sexual and nonsexual behaviours. The results of Study 4 demonstrate benefits of using direct-verbal methods of communicating one's interest in novel sexual behaviours, suggesting this may be the "best" behavioural method for how to initiate novel behaviours. Studies 5A and 5B determined the most novel sexual and nonsexual behaviours romantic partners engage in, and when these behaviours typically occur in relationships for the first time. The experiment conducted for Study 6 then demonstrated there may be perceived relationship detriments associated with deviating from the normative timeline for novel nonsexual behaviours, but when the behaviour is initiated may not be the most important factor to consider regarding best practices in incorporating novelty.

This research provides greater understanding of how romantic couples may effectively navigate one of romantic relationship's most prevalent detrimental relationship experiences. Future research should examine the mechanisms behind the benefits of bias in perceptions of relational boredom, the long-term effects of bias on relationship quality, and additional factors that may moderate the benefits of initiating novelty in romantic relationships. Gaining a better understanding of the relational processes involved in perceiving and coping with relational boredom was an important first step towards helping romantic couples maintain satisfying relationships in the long-term.

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