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A satisfying sexual relationship is critical for maintaining individual and relationship well-being, yet is difficult to maintain over time. Indeed, many people will inevitably face sexual challenges over the course of a relationship that threaten the well-being and stability of the relationship. However, some people are more successful at navigating these sexual challenges to maintain well-being over time, suggesting that it is possible to maintain a satisfying sexual relationship despite common obstacles that people face. To this end, this dissertation discussed three types of sexual challenges—sexual incompatibility, avoiding infidelity, and mate selection—that people are especially likely to encounter over the course of a romantic relationship, and how those sexual challenges inform individual and relational outcomes. Further, this dissertation introduced my program of research, which seeks to identify how people can successfully navigate these sexual challenges to maintain satisfying sexual relationships over time. Ultimately, these findings contribute to literature on how people can maintain sexual and relationship satisfaction over time, and thus promote individual and relational well-being.

NAVIGATING SEXUAL CHALLENGES ACROSS RELATIONSHIP DEVELOPMENT

by

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DEDICATION

To my husband, Kyle, who has always believed in me. This dissertation was made possible because of your endless love, support, and encouragement. Thank you for being there for me each and every day.

To my family and friends, who have always brought warmth and joy into my life. It is because of you that I had the courage to pursue my dreams and the strength to never give up. I am truly thankful for everything you have given me.

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CHAPTER I: INTEGRATED INTRODUCTION

Satisfying sexual encounters are fundamental for individual and relational well-being. For example, sexual behavior is often associated with numerous psychological (e.g., enhanced mood, reduced stress; Blanchflower & Oswald, 2004; Burlinson et al., 2007; Ein-Dor & Hirschberger, 2012) and physiological benefits (e.g., improved immune system functioning, lowered risk of mortality; Haake et al., 2004; Smith et al., 1997) for the individual. Furthermore, sexuality is critical for the success and longevity of committed romantic relationships. Indeed, evolutionary perspectives suggest that the human sexual system serves as a mechanism to foster enduring bonds within intimate relationships; thus, engaging in sexual activity is often perceived as a way to maintain valuable relationships by promoting intimacy and closeness (for review, Birnbaum & Reis, 2019). Consistent with this perspective, sexual activity has been found to increase relationship closeness, which is often associated with positive relational outcomes such as increased relationship satisfaction and commitment (Lewandowski et al., 2010; Weidler & Clark, 2011). Because of this, most people consider a satisfying sexual relationship to be a key aspect of committed romantic relationships (Impett et al., 2014).

Despite the importance of satisfying sexual encounters for individual and relational well-being, most couples experience challenges to maintaining satisfying sexual relationships over the course of a relationship. For example, research suggests that as many as 95% of couples report discrepancies in sexual desire and interest over the course of a relationship (Day et al., 2015). Thus, experiencing sexual challenges is common among couples and ultimately results in declines in individual and relational well-being over time. Indeed, sexual challenges are broadly detrimental to individual psychological and physiological health. For example, sexual challenges are consistently associated with greater depressive symptoms (McCall-Hosenfeld et al., 2008),

heightened anxiety (Brotto et al., 2010) and distress (Rosen et al., 2019), as well as decreased life satisfaction (Schmiedeberg et al., 2017). Similarly, people who experience sexual challenges are more likely to encounter physiological health concerns, such as greater prevalence of coronary artery disease (McCall-Hosenfeld et al., 2008), diabetes (Basson & Schultz, 2007), and hypertension (Flynn et al., 2016).

Given the multitude of negative individual outcomes associated with sexual challenges, and given the strong association between individual and relational well-being (Roberson et al., 2018; Whitton et al., 2014), it is unsurprising that sexual challenges can also present issues for couples' relationship well-being. For example, experiencing sexual challenges is associated with lower relationship satisfaction (Davies et al., 1999; Willoughby et al., 2014), which is an important contributor to relationship commitment (Rusbult, 1980, 1983) and longevity (Rusbult, 1983; Rusbult et al., 1998). Similarly, recent research revealed that sexual challenges are associated with less positive communication between partners and a higher amount of couple conflict (Willoughby et al., 2014). Finally, experiencing sexual challenges is associated with lower perceived relationship stability (Willoughby et al., 2014). Consistent with these findings, sexual challenges are reported among the most common reasons for seeking couples therapy (Doss et al., 2004), as well as one of the primary causes of relationship dissolution (Amato & Previti, 2003). Thus, maintaining satisfying sexual relationships is crucial to the well-being and stability of romantic relationships over time.

As can be seen, experiencing sexual challenges is common among romantic couples and consistently associated with detrimental individual and relational outcomes. Up to this point, sexual challenges and the outcomes associated with such challenges have been discussed broadly; however, it is important to recognize that distinct types of sexual challenges vary in

prevalence across relationships and result in unique interindividual and intraindividual outcomes. To this end, the remainder of this dissertation discussed three types of sexual challenges—sexual incompatibility, avoiding infidelity, and mate selection—that people are especially likely to encounter over the course of a romantic relationship, and how those sexual challenges inform individual and relational outcomes. Lastly, I introduced how my program of research seeks to identify how people can navigate these sexual challenges to maintain satisfying sexual relationships over time.

Sexual Incompatibility and Fulfilling Sexual Needs

Among the most prevalent sexual challenges that couples are likely to face is incompatible sexual desire between partners. Indeed, as many as 95% of couples report discrepancies in sexual desire over the course of a relationship (Day et al., 2015), and challenges related to sexual desire are one of the most common reasons for seeking couples therapy (Doss et al., 2014). Specifically, most romantic relationships are characterized by sexual desire and passion peaking in the early stages of romantic relationships and then declining gradually over time as romantic partners become more familiar and secure within their relationship (Sims & Meana, 2010; Sprecher & Regan, 1998). Similarly, due to fluctuating sexual desires across the span of a relationship, romantic partners often face situations in which their sexual desires and interests do not align with one another (Davies et al., 1999; Day et al., 2015; Mark & Murray, 2012), creating challenges to maintaining sexual and relationship satisfaction. For example, experiencing consistently lower sexual desire than one's partner is associated with greater distress and anxiety (Rosen et al., 2019). Furthermore, for both men and women, perceiving greater sexual desire discrepancies between partners is associated with lower sexual and

relationship satisfaction (Davies et al., 1999). Thus, sexual incompatibility poses a significant challenge to maintaining well-being and relationship stability.

Beyond experiencing dissimilar sexual desires, how partners *respond* to discrepancies in sexual desire is also important for subsequent sexual and relationship satisfaction. Specifically, people who are motivated to fulfill their partner's sexual needs (i.e., sexual communal strength; Muise et al., 2013), even when experiencing lower sexual desire than one's partner, tend to report greater sexual and relationship satisfaction compared to people low in sexual communal strength (SCS; for review, Muise & Impett, 2016; Muise et al., 2013). However, focusing on a partner's sexual needs to the exclusion of one's own needs (i.e., unmitigated sexual communion) can instead result in decreased satisfaction (Impett et al., 2019; Muise et al., 2017a). Thus, it is beneficial for partners to be responsive to one another's need *not* to have sex during instances of incompatible sexual desires. Indeed, research has revealed that being more understanding of a partner's desire not to have sex is associated with greater sexual and relationship satisfaction (Muise et al., 2017b). To this end, the decision to engage or not engage in sexual behavior while experiencing incompatible sexual desire can impact sexual and relationship satisfaction.

At times when people decide not to engage in sexual behavior, the distinct ways in which they decline their partner's sexual advances also has important implications for couples' satisfaction. Specifically, although initial research suggests that receiving a sexual rejection decreases sexual and relationship satisfaction for the rejected partner (Byers & Heinlein, 1989; Dobson et al., 2019), newer findings revealed that the manner in which rejection occurs determines whether or not it is detrimental to satisfaction (Kim et al., 2020). Indeed, these findings suggest that receiving reassuring rejection behaviors (i.e., demonstrating care and love toward the rejected partner) is associated with greater sexual and relationship satisfaction among

rejected partners, while receiving hostile rejection behaviors (i.e., inflicting hurt toward the rejected partner) is associated with lower sexual and relationship satisfaction among rejected partners. Thus, how partners reject one another's sexual advances during instances of incompatible sex desire can also impact sexual and relationship satisfaction.

Sexual Communal Strength and Gratitude

Given the high prevalence of couples who experience incompatible sexual desires (Day et al., 2015), as well as the negative outcomes associated with discrepancies in partners' sexual desires (Davies et al., 1999; Rosen et al., 2019), it is critical for research to further address how couples can overcome obstacles associated with incompatible sexual desires to maintain individual and relational well-being over time. As briefly mentioned, recent research suggests that SCS may help couples successfully navigate instances of sexual desire discrepancies, and thus helps buffer couples from normative declines in sexual and relationship satisfaction (Day et al., 2015; Muise & Impett, 2016; Muise et al., 2013). Despite the importance of SCS for navigating incompatible sexual desires and meeting partners' sexual needs, research had yet to identify how people can increase their motivation to meet their partners' sexual needs. Thus, the goal of the first project within this program of research was to identify factors that promote SCS. By identifying factors that increase partners' motivation to meet one another's sexual needs, romantic partners may be more successful at navigating challenges associated with incompatible sexual desires.

Gratitude is one such factor that may be especially important for the promotion of SCS. Specifically, *experiencing* gratitude functions to remind people of their partner's value and subsequently increases the motivation to maintain that relationship (Algoe et al., 2008). Furthermore, *receiving* expressions of gratitude is a rewarding experience and thus increases the

motivation to meet the needs of those who create rewarding experiences (Algoe et al., 2016; Landis et al., 2014). Thus, past research suggests that experiencing and receiving expressions of gratitude increases the motivation to meet a partner's general relationship needs (Algoe et al., 2008). However, given that experiencing and receiving gratitude signals a motivation to maintain the relationship, and given that people who are motivated to maintain their relationships prioritize fulfilling important needs (i.e., sexual needs; Stanley & Markman, 1992), gratitude may be especially important for increasing the motivation to meet a partner's *sexual* needs (i.e., SCS). To this end, couples who experience incompatible sexual desires may resolve this sexual challenge by increasing the extent to which they experience and receive expressions of gratitude from one another, thus promoting greater SCS.

In a first-authored paper published in *Social Psychological and Personality Science*, I described three studies that employed cross-sectional, longitudinal, and experimental methods to examine whether experiencing and receiving gratitude increased the motivation to fulfill a partner's sexual needs. Across all three studies in Chapter II, I predicted that both experiencing and receiving gratitude would be associated with greater SCS. The results of these studies revealed how partners can increase their motivation to fulfill one another's sexual needs, and thus furthers understanding of how couples can successfully navigate challenges of sexual incompatibility to maintain sexual and relationship satisfaction over time.

Avoiding Infidelity and Attractive Alternatives

Unlike other interpersonal needs (e.g., companionship, esteem) that can be fulfilled by multiple people, people in committed romantic relationships are typically expected to fulfill their sexual needs exclusively with romantic partners and avoid sexual behavior with others (Conley et al., 2013; Russell et al., 2013). Thus, engaging in romantic or sexual behaviors with others

while in a romantically exclusive relationship (i.e., infidelity) can result in numerous detrimental outcomes for both the individual and relationship. Specifically, people who engage in infidelity tend to experience diminished self-concept clarity and greater psychological discomfort (Foster & Misra, 2013), while partners of people who engage in infidelity often report feelings of anxiety and depression (Cano & O'Leary, 2000). Infidelity is also harmful to the overall functioning and stability of the relationship. For example, relationships affected by infidelity are characterized by greater relational uncertainty and decreased relationship trust (Charny & Parnass, 1995), resulting in infidelity being the most common cause of relationship dissolution (Amato & Previti, 2003; Betzig, 1989). Despite the harmful consequences associated with infidelity, approximately 20 to 30% of relationships are affected by infidelity (Jones & Weiser, 2014). Thus, avoiding the temptation of attractive alternative romantic partners is a common challenge faced within romantic relationships.

Accordingly, several theories of close relationships posit that people who are committed to maintaining their romantic relationships should be motivated to protect their relationships from the threat of infidelity. For example, interdependence theory suggests that as dependence grows within a relationship, people begin to prioritize the relationship with their partner over their own self-interests, and thus are motivated to engage in processes that maintain and protect the relationship (Kelley & Thibaut, 1978; Yovetich & Rusbult, 1994). Similarly, evolutionary perspectives emphasize the adaptive value of maintaining long-term relationships to ensure the survival of offspring and thus suggest that humans evolved psychological biases against relationship threats to protect their primary, long-term relationships (Kenrick et al., 2003). Together, these perspectives suggest that committed partners should engage in certain processes and behaviors to reduce the threat of infidelity and ultimately protect their relationship.

An abundance of research is consistent with the idea that committed partners engage in relationship maintenance mechanisms to protect against the threat of attractive alternatives and has identified numerous mechanisms that committed partners typically engage in to limit the threat of infidelity. For example, research has found that highly committed partners tend to perceive others as less attractive than they objectively are (Johnson & Rusbult, 1989; Lydon et al., 2003; Lydon et al., 1999; Simpson et al., 1990), spend less time looking at (Miller, 1997) and paying attention to (Maner et al., 2009; Maner et al., 2008) alternatives, suppress thoughts about alternatives (Gonzaga et al., 2008), and selectively recall negative qualities more than positive qualities about alternatives (Visserman & Karremans, 2014). These maintenance mechanisms are also reflected in committed partners' subsequent behavior. For instance, highly committed partners tend to display fewer signs of interest when interacting with an attractive alternative (Karremans & Verwigerem, 2008). Thus, research has consistently revealed that people engage in numerous mechanisms to limit the threat of attractive alternatives.

Although ample evidence has revealed that committed partners cognitively and behaviorally derogate attractive alternatives (theoretically for the purpose of protecting their relationship from the threat of infidelity), limited research has investigated whether these mechanisms actually protect against the threat of infidelity. Specifically, only one known study has examined whether derogation mechanisms (i.e., inattention to attractive alternatives) actually decreases the risk of infidelity. In two 3-year longitudinal samples of newlywed couples, McNulty and colleagues (2018) revealed that participants' inattention to attractive alternatives decreased the probability of having a romantic affair or engaging in infidelity. Interestingly, contrasting research suggests that limiting people's attention to attractive alternatives may instead undermine protective relationship mechanisms by increasing positive attitudes toward

infidelity (DeWall et al., 2011). To this end, it remains unclear whether these derogation mechanisms are successful at protecting relationships against the threat of infidelity.

Attention to Attractive Alternatives, Infidelity, and Self-regulation

Although past research has consistently revealed that committed partners cognitively and behaviorally derogate attractive alternatives, limited research has investigated whether these maintenance mechanisms actually protect against the threat of infidelity. Furthermore, it remained unclear how various individual or situational factors may inform the extent to which these mechanisms are successful at preventing infidelity. Thus, the goal of the second project in this program of research (presented in Chapter III) was to determine whether observing tempting alternatives *always* motivates people to pursue those alternatives, as past theory and research suggests (Maner et al., 2009; McNulty et al., 2018), or if people could still admire attractive alternatives while refraining from infidelity. By further understanding the contexts in which infidelity is more or less likely to occur, romantic partners can be better prepared to navigate the challenge of avoiding the temptation of attractive alternatives.

Specifically, whether paying attention to attractive alternatives leads to infidelity should depend on a person's ability to resist pursuing such temptations. Indeed, self-regulatory ability—or the ability to resist initially satisfying impulses that hinder distal goals—helps people resist a variety of tempting behaviors (e.g., gambling; Baron & Dickerson, 1999) and therefore should help people avoid pursuing the attractive alternatives that they notice. Furthermore, self-regulatory ability is influenced by both dispositional and situational factors; thus, although individual differences in self-control are somewhat stable over time (Hay & Forrest, 2006), self-regulatory ability can also be temporarily impaired when people are intoxicated, ill, tired, or stressed (Hagger et al., 2010). To this end, people who have a tendency to notice attractive

alternatives, and therefore may be at a higher risk of engaging in infidelity, may resolve this sexual challenge by identifying and avoiding situations that tax self-regulatory ability.

In a first-authored paper published in the *Journal of Family Psychology*, I described two studies (one experimental, one longitudinal) that examined whether people in romantic relationships are more likely to engage in infidelity as a result of initially paying attention to attractive alternatives, and whether the implications of attending to attractive alternatives depend on self-regulatory ability. I predicted that paying attention to attractive alternatives would increase the risk of infidelity among those who possess poorer self-regulatory ability, but would not increase the risk of infidelity among those who possess greater self-regulatory ability. The results of these studies aid in our understanding of when people are at greater risk of engaging in infidelity, as well as how romantic partners can successfully navigate the temptation of attractive alternatives to avoid the risk of infidelity.

Mate Selection and Relationship Initiation

Sexual challenges in romantic relationships are often studied in the context of established relationships, however, it is equally as important to consider how sexual challenges that occur outside of established relationships inform subsequent relationship initiation and development. Indeed, a common challenge that people face when exploring relationships is *when* a mate should be selected; that is, when should a person take the step from being single to initiating a committed romantic relationship. Research has consistently revealed that failure to select a mate at the optimal timing can result in detrimental individual and relational outcomes. For example, people with a less selective mating strategy (i.e., people who tend to quickly form romantic relationships) are more likely to pursue relationships with less responsive and less attractive dating partners, and remain in relationships with dissatisfying partners (Spielmann et al., 2013).

In contrast, people with a more selective mating strategy (i.e., people who tend to not form romantic relationships unless the partner is ideal) risk not securing a romantic relationship, and thus experiencing negative mental (e.g., greater stress) and physical (e.g., higher blood pressure) health outcomes associated with unfulfilled belongingness needs (for review, Gere & MacDonald, 2010). To this end, people are faced with the challenge of knowing when it is the optimal time to select a mate for the purpose of a long-term committed romantic relationship.

Numerous theories address this topic. For example, life history theory proposes that organisms must allocate limited resources and time to achieve reproductive and existential success, and the optimal allocation of these resources is dependent on the organisms' current environment (Del Giudice et al., 2016; Kaplan & Gangestad, 2005). Within this framework, it is more adaptive for people to quickly find mates and reproduce when the current environment is harsh and the future is unpredictable, whereas it is more optimal for people to be selective when finding mates and reproducing when the current environment is predictable and high returns are expected in the future. Thus, this theory suggests that the most beneficial time to form a relationship (and ultimately reproduce) is informed by environmental contexts, available resources, and the cost/benefit trade-off between pursuing a relationship now versus in the future. Expanding upon the importance of timing when forming relationships, relationship receptivity theory (RRT) suggests that people display differences in how receptive they are to forming romantic relationships, despite what would be considered their optimal timing based on adaptive environmental processes (for review, Hadden & Agnew, 2020). For example, it may be an objectively ideal time to select a mate when a person has predictable access to resources, yet that person may choose to remain single because they do not feel ready to devote their time to fostering a romantic relationship. To this end, life events (e.g., a bad break-up, decision to move

across the country, devotion to a career) are also an important factor when deciding to either begin a relationship or remain single. Thus, RRT proposes that a person's perceived personal timing—that is, a person's sense of whether or not they want to be and feel ready to be in a close relationship—is a core factor underlying relationship formation and development.

Commitment Readiness and Perception of Available Romantic Partners

Demonstrating the importance of perceived personal timing for relationship development, research suggests that feelings of readiness to commit to a romantic relationship (i.e., commitment readiness) predict greater relationship pursuit behaviors and a higher likelihood of forming a romantic relationship in the near future (Hadden et al., 2018). Commitment readiness further predicts important relationship outcomes once a relationship is initiated, including higher commitment and greater use of relationship maintenance behaviors (e.g., sacrifice; Agnew et al., 2019). Together, these findings suggest that commitment readiness is a key component in determining when a mate should be selected to optimize beneficial individual and relational outcomes. Yet despite the importance of commitment readiness for mate selection and subsequent outcomes, it remained unclear what factors inform a person's commitment readiness. To this end, the goal of the third project in this program of research was to identify factors that promote or undermine commitment readiness. By identifying factors that influence a person's readiness to commit to a romantic relationship, people may be more successful at navigating the challenge of when a mate should be selected.

Extant theory and research suggest that the perceived availability of potential partners may influence commitment readiness. However, such perspectives can be used to make competing predictions regarding the direction of this influence. On the one hand, given that humans likely evolved to secure the most desirable partner possible (Buss & Schmitt, 1993), and

given that people who perceive many potential partners should benefit from being more selective to ensure they select a partner who is maximally desirable, perceiving *many* available potential partners may decrease readiness to enter into a committed relationship. On the other hand, given that it is threatening to acknowledge a dearth of romantic interest from others (Kenrick et al., 1993), and people are motivated to view themselves in a favorable manner (Leary, 2007; Shrauger, 1975), perceiving *few* potential partners may motivate people to defensively decide that they are not ready for a committed relationship and thus instead decrease commitment readiness. Thus, people who are struggling to decide when to initiate a romantic relationship may benefit by considering the extent to which they perceive available potential romantic partners.

In a first-authored paper currently under review in the *Journal of Experimental Social Psychology* (presented in Chapter IV), I described four studies (one correlational, three experimental) that examined whether perceiving many or few available romantic partners decreased commitment readiness among singles. After an initial exploratory pilot study, I predicted that commitment readiness would be lower among participants who perceived many available romantic partners compared to participants who perceived fewer available romantic partners. The results of these studies aid in our understanding of when people are less likely to be ready to commit to a romantic relationship, as well as highlights an important factor that people should consider when initiating a relationship to more successfully navigate the challenge of selecting a mate at the optimal timing for subsequent individual and relational well-being.

Current Program of Research

As previously discussed, sexual challenges are common across the development of a relationship and present detrimental individual and relational outcomes when left unresolved. Given the importance of satisfying sexual relationships for individual and relational well-being,

it is critical to understand how people can successfully navigate sexual challenges that often occur over the course of a relationship. To this end, the current program of research seeks to reveal how people can successfully navigate these three types of sexual challenges—sexual incompatibility, avoiding infidelity, and mate selection—that are especially likely to be experienced over the course of a romantic relationship. The first project in this program of research revealed how couples can navigate the challenge of sexual incompatibility by identifying a factor that promotes SCS. The second project in this program of research revealed how couples can avoid infidelity by identifying when the threat of noticing attractive alternatives is most salient. Finally, the third project in this program of research revealed how people can more successfully select a romantic partner at the optimal time by identifying a factor that decreases commitment readiness. Together, these findings contribute to literature on how people can maintain sexual and relationship satisfaction over time, and thus promote individual and relational well-being.

CHAPTER II: GRATITUDE INCREASES THE MOTIVATION TO FULFILL A PARTNER'S

SEXUAL NEEDS

Abstract

Maintaining sexual satisfaction is a critical, yet challenging, aspect of most romantic relationships. Although prior research has established that sexual communal strength (SCS)—the extent to which people are motivated to be responsive to their partner's sexual needs—benefits romantic relationships, research has yet to identify factors that promote SCS. We predicted that gratitude would increase SCS because gratitude motivates partners to maintain close relationships. These predictions were supported in three studies with cross-sectional, longitudinal, and experimental methods. Specifically, experiencing and receiving expressions of gratitude were associated with greater SCS. These studies are the first to investigate the benefits of gratitude in the sexual domain and further understanding about factors that promote SCS. Together, these results have important implications for relationship and sexual satisfaction in romantic relationships.

Introduction

Maintaining sexual satisfaction is a critical, yet challenging, task for most romantic couples. Indeed, most people consider a satisfying sexual relationship to be a key aspect of romantic relationships (Impett, Muise, & Peragine, 2014), and sexual satisfaction is associated with greater relationship (Sprecher, 2002) and individual well-being (Laumann et al., 2006). Yet, most couples experience declines in sexual, and thus relational, satisfaction over time (McNulty, Wenner, & Fisher, 2016). Thus, one key goal of relationship and sexuality research has been to identify how couples can maintain sexually satisfying relationships (see Impett & Muise, 2019).

Recent research suggests that sexual communal strength (SCS; Muise et al., 2013)—the motivation to meet a partner’s sexual needs—may buffer couples from normative declines in sexual satisfaction. Indeed, SCS predicts greater sexual desire, sexual satisfaction, and relationship satisfaction (Day et al., 2015; Muise & Impett, 2015; Muise et al., 2017). Although the benefits of SCS have been established, research has yet to identify factors that promote SCS. Thus, the goal of the current research is to examine whether gratitude—an emotion that motivates people to maintain close relationships (Algoe, Haidt, & Gable, 2008)—also motivates people to meet their partner’s sexual needs.

The Relational Benefits of Sexual Communal Strength

SCS refers to the extent that people are motivated to meet their partner’s sexual needs. Importantly, people high in SCS tend to be motivated to meet those needs because they genuinely want to please their partner (Day et al., 2015; Muise & Impett, 2015), not because they want to avoid conflict (Muise et al., 2013), which tends to decrease relationship satisfaction (Impett, Peplau, & Gable, 2005). Further, people high in SCS do not fulfill their partner’s needs to the exclusion of their own needs (Impett, Muise, & Harasymchuk, 2019) and do not expect immediate reciprocation (Day et al., 2015). Similarly, SCS does not stem from sexual coercion, which is nearly always associated with negative outcomes (O’Sullivan, Byers, & Finkelman, 1998).

Research has consistently demonstrated the relational benefits of SCS (Day et al., 2015; Muise et al., 2013). For example, Muise and Impett (2015) demonstrated that SCS was associated with more stable relationship satisfaction and commitment over time. Similarly, SCS was associated with both partners’ daily sexual and relationship satisfaction, even on days when partners had different sexual interests (Day et al., 2015). These findings are consistent with

several theoretical perspectives, including attachment theory (Brennan, & Shaver, 1995), interdependence theory (Reis, 2014; Rusbult, Drigotas, & Verette, 1994), the ideal standards model (Fletcher & Simpson, 2000), and transactive goal dynamics theory (Fitzsimons, Finkel, & vanDellen, 2015), which all suggest that relationships are often strengthened from partners meeting each other's needs (see Baker et al., 2013).

Gratitude May Increase SCS

Despite the importance of meeting partners' sexual needs, research has yet to identify factors that increase the motivation to do so. One such factor may be gratitude. Gratitude is a positively-valenced emotion that arises in response to the recognition that another person has been beneficial or valuable to them (Algoe et al., 2008; McCullough et al., 2001; Wood et al., 2008). A growing body of research has revealed that gratitude is associated with greater intrapersonal (e.g., mood, optimism; Hill & Allemand, 2011; McCullough, Emmons, & Tsang, 2002) and relational (e.g., prosocial behavior, relationship satisfaction; Algoe et al., 2008) outcomes.

There is reason to expect that experiencing and receiving gratitude will increase SCS. Regarding *experiencing* gratitude, the find-remind-and-bind theory of gratitude suggests that gratitude functions to remind people of their partner's value and subsequently increase the motivation to maintain that relationship (Algoe et al., 2008). Indeed, people who are grateful for others' selfless actions tend to be more willing to help those others with a costly task (i.e., completing a taxing survey) compared to those who feel less grateful (Bartlett & DeSteno, 2006). Further, people often express their gratitude to their partners (Gordon, Arnette, & Smith, 2011), and such expressions of gratitude also increases the motivation to maintain relationships with them (Lambert et al., 2010).

Receiving expressions of gratitude may similarly increase recipients' SCS. In particular, feeling appreciated tends to be a rewarding experience (Algoe, Kurtz, & Hilaire, 2016) because it fulfills self-enhancement goals (Sedikides & Gregg, 2008) and reduces relational uncertainty (Algoe, 2012). Given that people tend to like others who create rewarding experiences (Weinstein & Ryan, 2010), and that people tend to be more motivated to meet others' needs to the extent that they like them (Impett, Beals, & Peplau, 2003; Landis et al., 2014), receiving expressions of gratitude should increase the motivation to fulfill a partner's needs. Indeed, people who are thanked for their help tend to be more motivated to continue their relationship with (Williams & Bartlett, 2015), and offer more assistance to (Grant & Gino, 2010), the person they helped compared to those who are not thanked.

Although past theory and research suggests that gratitude should increase the general desire to maintain a relationship, there is reason to expect that gratitude would have a particularly important role in increasing the motivation to meet a partner's *sexual* needs (i.e., SCS) because of the importance that sex holds within romantic relationships. Unlike other personal or relational needs (e.g., companionship, esteem) that can be fulfilled by multiple people, sexual needs are typically expected to be fulfilled only by one's romantic partner (Rubin et al., 2014). Thus, people pay close attention to whether their partners are meeting their sexual needs (Byers, 2005) and whether they are meeting their partners' sexual needs (Fisher et al., 2015). Given that importance of sexual fulfillment for maintaining satisfying romantic relationships (Impett et al., 2014; Sprecher, 2002), and given that people who are committed to maintaining their relationships prioritize fulfilling needs that their partners consider to be important (Stanley & Markman, 1992), intimates experiencing gratitude who are thus motivated to maintain their relationships should be especially motivated to meet their partners' sexual needs. Consistent with

the idea that gratitude should motivate people to meet their partners' sexual needs, prior research has demonstrated that people welcome their partners' sexual advances more to the extent that they feel appreciated by those partners (Graham et al., 2004).

Hypotheses and Overview of the Current Studies

Although past research has established the importance of SCS, there is a need to identify factors that promote SCS. Thus, we conducted three studies to examine the implications of gratitude for SCS. A cross-sectional Pilot Study revealed that both experiencing and receiving gratitude were associated with greater SCS. Studies 1 and 2 aimed to replicate and extend these initial results. Study 1 was a dyadic, longitudinal study in which couples completed assessments of SCS and gratitude at three time points. Study 2 was an experiment in which participants in romantic relationships completed tasks that either did or did not enhance gratitude and reported their SCS. Across these studies, we predicted that both experiencing and receiving gratitude would be associated with greater SCS.

Pilot Study

Method

Participants

Participants were 249 individuals who were recruited using the Mechanical Turk service on Amazon.com (MTurk). This study was conducted during a period of elevated non-human and/or non-serious respondents on Mturk (Chmielewski & Kucker, 2019), thus 64 participants were excluded for failing attention checks. The remaining 185 participants (75 men, 108 female) had a mean age of 33.7 years ($SD = 9.6$) and were required to be in a romantic relationship for at least three months ($M = 24.2$ months, $SD = 38.54$ months). One-hundred thirty-three (71.9%) participants identified as Caucasian, 23 (12.4%) identified as African-American, 15 (8.1%)

identified as Asian, 7 (3.8%) identified as Hispanic, and 7 (3.8%) identified as other or two or more ethnicities.

Procedure

Participants completed all procedures online using Qualtrics survey software. Participants completed questionnaires assessing their SCS, experiences of gratitude toward their partner, and expressions of gratitude received from their partner. Finally, participants were debriefed and received \$0.50 for completing the study.

Measures

All measures can be found in Appendix A.

Sexual Communal Strength. Participants completed the six-item Sexual Communal Strength measure (Muisse et al., 2013) to assess their SCS (e.g., “How high a priority for you is meeting the sexual needs of your partner?”) using a 10-point scale (1 = *not at all*, 11 = *extremely*).¹ Internal consistency was acceptable ($\alpha = .67$).

Gratitude. Participants completed the Appreciation in Relationships Scale (AIR; Gordon et al., 2012). The AIR consists of two subscales: the first contains nine questions that assess experiences of gratitude toward the partner (e.g., “I appreciate my partner”) and the second contains seven questions that assess expressions of gratitude received from the partner (e.g., “My partner often tells me the things that s/he really likes about me”). Participants responded to all items using a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Items within both subscales were summed to create separate indices of experienced and received gratitude. Internal consistency was high ($\alpha_{\text{experienced}} = .84$; $\alpha_{\text{received}} = .86$).

¹ Due to a programming error, this scale used a 1-11 scale instead of the typical 1-7 scale.

Results

Preliminary analyses (e.g., testing for gender differences) can be found in Appendix A. Consistent with predictions, bivariate correlations revealed that SCS was positively associated with both experiencing gratitude ($r = .53, p < .001$), and receiving gratitude ($r = .49, p < .001$).

Supplemental Analyses

Supplemental analyses were conducted to further understand the association between gratitude and SCS. First, we examined whether SCS remained positively associated with both experiencing gratitude and receiving gratitude when simultaneously regressed onto both. Results indicated that both experiencing gratitude, $B = 0.39, SE = 0.08, t(182) = 4.69, p < .001, r = .57$, 95% CI [0.23, 0.55], and receiving gratitude, $B = 0.29, SE = 0.09, t(182) = 3.11, p = .002, r = .57$, 95% CI [0.11, 0.47], were significantly associated with greater SCS when entered simultaneously. Second, we examined whether gratitude remained positively associated with SCS, controlling for communal strength (CS; see Appendix A for measure information). Results indicated that both experiencing gratitude, $B = 0.25, SE = 0.07, t(182) = 3.43, p = .001, r = .25$, 95% CI [0.11, 0.39], and receiving gratitude, $B = 0.34, SE = 0.07, t(182) = 5.03, p < .001, r = .35$, 95% CI [0.20, 0.47], were significantly associated with greater SCS, controlling for CS.

Discussion

The Pilot Study provides initial evidence that experiencing and receiving gratitude were associated with greater SCS. However, this study is limited due to the cross-sectional design that precludes conclusions about the temporal order of this association. Study 1 addressed this issue.

Study 1

Study 1 used a longitudinal, dyadic sample to test whether gratitude predicts increases in SCS. To this end, both members of romantic couples reported the extent to which they

experienced and received gratitude and their SCS at three different time points. We predicted that partners' reports of both experiencing and receiving gratitude would be positively associated with changes in SCS.

Method

Participants

Participants were 118 heterosexual couples ($n = 236$) recruited from the United States through Craigslist who participated in a broader study of romantic relationships. Participants had a mean age of 31.6 years ($SD = 10.34$) and had been in their current relationship from 4 months to 30 years ($M = 4.9$ years, $SD = 5.3$ years). One-hundred thirty (54.9%) participants identified as White or European, 35 (14.6%) as African-American, 18 as Asian (7.4%), 18 as Hispanic (7.5%), 7 as Native American (2.9%), 2 as Indian (0.8%), and 26 (11%) as other.

Procedure

Couples were individually emailed a link to a 30-minute online survey and were instructed to complete the questionnaires independent from their partner. At Baseline (Time 1), both members of the couple completed measures of SCS and gratitude. Because of broader goals of the study, participants completed a daily diary for the following 21 days that assessed variables unrelated to the current predictions. At the end of the 21 days (Time 2), and three months after Baseline (Time 3), participants again reported their SCS and gratitude. One-hundred sixty-six (70.3%) participants completed Time 2 and 120 (50.8%) participants completed Time 3. Each partner was paid up to \$50 for completing the broader study.

Measures

All of the measures can be found in Appendix A.

Sexual Communal Strength. Participants completed the Sexual Communal Strength measure (Muise et al., 2013) described in the Pilot Study. Internal consistency was acceptable ($\alpha = .69$).

Gratitude. Participants completed the Appreciation in Relationships Scale (AIR; Gordon et al., 2012) described in the Pilot Study. Internal consistency was high ($\alpha_{\text{experienced}} = .85$; $\alpha_{\text{received}} = .91$).

Results

Descriptive statistics and correlations among the variables are presented in Table 1 in Appendix A. At baseline, there were no significant differences in SCS, $B = -0.06$, $SE = 0.12$, $t(235) = -0.47$, $p = .642$, $r = -.03$, 95% CI [-0.30, 0.18], experienced gratitude, $B = 0.14$, $SE = 0.13$, $t(235) = 1.20$, $p = .271$, $r = .08$, 95% CI [-0.12, 0.40], or received gratitude, $B = 0.26$, $SE = 0.18$, $t(235) = 1.46$, $p = .145$, $r = .09$, 95% CI [-0.09, 0.61], among participants who completed all three time points compared to those who did not. Preliminary analyses (e.g., testing for gender differences) can be found in Appendix A.

Gratitude and Changes in SCS

We first examined whether gratitude was associated with changes in SCS from each time point to the next by estimating two-level cross models with the HLM 7.01 computer program (Raudenbush et al., 2004), in which persons were nested within dyads, and persons and days are crossed, given that both partners' reports were provided on the same days (Kenny, Kashy, & Cook, 2006). In these models, SCS scores at the next-assessment were regressed onto either experienced gratitude or received gratitude at the previous assessment, controlling for SCS at the previous assessment. All predictors were group (i.e., within-person) centered; thus, results represent changes in SCS based on whether participants reported more or less gratitude than their

individual average. Given that data were distinguishable by gender, separate effects were simultaneously estimated for men and women, yet the effects for men and women were constrained together to yield average estimates.

Results indicated that changes in participants' SCS were positively associated with their reports of their experienced gratitude, $B = 0.30$, $SE = 0.11$, $t(115) = 2.75$, $p = .007$, $r = .25$, 95% CI [0.08, 0.52], and their reports of their received gratitude, $B = 0.26$, $SE = 0.07$, $t(115) = 3.49$, $p < .001$, $r = .31$, 95% CI [0.12, 0.40]. Further, analyses that employed an Actor-Partner Interdependence Model (APIM; Kenny et al., 2006) approach revealed that changes in participants' SCS remained significantly associated with their reports of their received gratitude, $B = 0.22$, $SE = 0.07$, $t(113) = 2.99$, $p = .003$, $r = .27$, 95% CI [0.08, 0.36], yet were no longer associated with their reports of their experienced gratitude, $B = 0.23$, $SE = 0.12$, $t(113) = 1.93$, $p = .056$, $r = .18$, 95% CI [-0.01, 0.47], controlling for their partners' reports of gratitude. Results examining the independent effects of those partners' reports can be found in Appendix A.

Supplemental Analyses

Multiple supplemental analyses were conducted to further understand the association between gratitude and SCS. First, we examined whether both experiencing and receiving gratitude were associated with changes in SCS when SCS was simultaneously regressed onto both gratitude variables. Results indicated that changes in participants' own SCS were positively associated with their reports of their received gratitude, $B = 0.20$, $SE = 0.09$, $t(113) = 2.31$, $p = .023$, $r = .21$, 95% CI [0.02, 0.38], yet were not associated with their reports of their experienced gratitude, $B = 0.17$, $SE = 0.13$, $t(113) = 1.34$, $p = .182$, $r = .13$, 95% CI [-0.09, 0.43], when SCS was simultaneously regressed onto both. Second, we examined whether the effects of gratitude were independent from other similar variables (see Appendix A for information about these

measures). Results are presented in Table 2 in Appendix A and revealed a similar pattern of results.

Discussion

Consistent with our predictions, participants' experiences of gratitude, and the expressions of gratitude they received, were positively associated with changes in SCS from one assessment to the next. Nevertheless, the previous studies were correlational and thus precludes conclusions about the causal nature of these associations. Study 2 addressed this issue.

Study 2

Study 2 was a pre-registered experiment intended to provide causal evidence that gratitude increases SCS (osf.io/myq9p). Participants in romantic relationships completed two tasks designed to increase their own gratitude, increase their perception of their partner's gratitude, or not increase perceptions of gratitude. Participants then completed manipulation checks and reported their SCS. We predicted that SCS would be greater among participants in either of the two gratitude conditions compared to participants in either of two different control conditions.

Method

Participants

Participants were 285 individuals who were recruited using the Mechanical Turk service on Amazon.com (MTurk). A sample size of at least 200 participants was obtained because an a priori power analysis based on previously obtained effect sizes from a different manipulation of gratitude ($r = .24$; Baker, under review) indicated that the power to detect the association between the gratitude manipulation and interpersonal evaluations was .84 with 200 participants at an alpha of .05. This study was conducted during a period of elevated non-human and/or non-

serious respondents on Mturk (Chmielewski & Kucker, 2019); thus, 82 participants were excluded for not following directions or failing attention checks. The remaining 203 participants (78 men, 124 women, 1 other) had a mean age of 37.5 years ($SD = 10.9$). Participants were required to be in a romantic relationship for at least three months ($M = 9.8$ years, $SD = 9.6$ years). One-hundred sixty-two (79.8%) participants identified as Caucasian, 15 (7.4%) as Asian, 13 (6.4%) as African-American, 9 (4.4%) as Hispanic, and 4 (2%) as two or more ethnicities.

Procedure

Participants completed all procedures online using Qualtrics survey software. Participants were randomly assigned to one of four conditions and then completed two separate writing tasks developed for this study. For the first writing task, all participants were asked to write a letter about a recent experience. Participants in the *experiencing gratitude condition* were asked to describe the most recent moment they experienced gratitude toward their romantic partner. Participants in the *receiving gratitude condition* were asked to describe the most recent moment they received gratitude from their romantic partner. Two control conditions were included to yield a positive experience independent from their romantic partner and a neutral experience involving their romantic partner to ensure that any potential differences between participants in the gratitude and control conditions were specific to gratitude and not the result of experiencing general positive affect or thinking generally about one's romantic partner. Thus, participants in the *positive affect control condition* were asked to describe their most recent enjoyable experience that did not involve their romantic partner. Finally, participants in the *partner control condition* were asked to describe the most recent experience that happened to their romantic partner that did not involve themselves.

Given that the effectiveness of this manipulation had not yet been established, all participants were instructed to complete a second writing task intended to similarly influence gratitude to further strengthen the manipulation. For this second task, participants in the *experiencing gratitude condition* were asked to list and describe two things that they are most grateful for about their romantic partner. Participants in the *receiving gratitude condition* were asked to list and describe two things that they feel their romantic partner is most grateful for about themselves. Participants in the *positive affect control condition* were asked to list and describe two activities that they enjoy doing without their partner. Finally, participants in the *partner control condition* were asked to list and describe two activities that their partner enjoys doing that do not involve themselves. After completing both tasks, all participants completed manipulation checks and reported their SCS. Participants were debriefed and received \$0.50 for completing the study.

Measures

All of the measures can be found in Appendix A.

Manipulation Check. To assess the effectiveness of the manipulations, participants responded to two face-valid items (“As of right now, I feel appreciative for my partner”, “... my partner makes me feel appreciated”), along with 18 other behaviors intended to hide the purpose of the manipulation check, using a 9-point scale (1 = *do not agree at all*, 9 = *agree completely*).

Sexual Communal Strength. Participants completed the previously described Sexual Communal Strength measure (Muisse et al., 2013).² Internal consistency was high ($\alpha = .89$).

² Due to a programming error, this scale used a 1-11 scale instead of the typical 1-7 scale.

Results

Descriptive statistics and bivariate correlations are shown in Table 3 in Appendix A. Preliminary analyses (e.g., testing for gender differences) can be found in Appendix A. Confirming the effectiveness of the manipulations, participants in the four conditions differed in the extent to which they reported experiencing gratitude for, $F(3, 199) = 11.61, p < .001, \eta^2 = .175$, and receiving gratitude from, $F(3, 199) = 12.36, p < .001, \eta^2 = .186$, their partner. More specifically, those in the experiencing gratitude condition ($M = 8.48, SD = 0.91$) reported experiencing more gratitude for their partners than did those in the receiving gratitude condition ($M = 7.29, SD = 2.36, p = .006, 95\% CI [0.34, 2.05]$), the positive affect control condition ($M = 6.30, SD = 2.66, p < .001, 95\% CI [1.38, 2.99]$), and the partner control condition ($M = 6.46, SD = 2.59, p < .001, 95\% CI [1.14, 2.90]$). In contrast, those in the receiving gratitude condition ($M = 8.51, SD = 0.79$) reported receiving more gratitude from their partners than did those in the experiencing gratitude condition ($M = 6.90, SD = 2.42, p = .001, 95\% CI [0.67, 2.55]$), the positive affect control condition ($M = 5.67, SD = 2.95, p < .001, 95\% CI [1.89, 3.80]$), and the partner control condition, ($M = 6.27, SD = 2.77, p < .001, 95\% CI [1.21, 3.27]$).

Gratitude and SCS

Supporting our prediction that gratitude increases SCS, a one-way analysis of variance (ANOVA) revealed significant differences in SCS between participants in the experiencing gratitude condition ($M = 8.71, SD = 1.97$), receiving gratitude condition ($M = 9.35, SD = 1.71$), positive affect control condition ($M = 7.21, SD = 2.51$), and partner control condition ($M = 7.50, SD = 2.36$), $F(3,199) = 10.74, p < .001, \eta^2 = .139$. Fisher's LSD post hoc tests revealed no significant differences between the experiencing gratitude and receiving gratitude conditions ($p = .134, 95\% CI [-8.91, 1.20]$); however, those in the experiencing gratitude condition reported

greater SCS than did those in the positive affect control condition ($p < .001$, 95% CI [4.25, 13.73]) and partner control condition ($p = .006$, 95% CI [2.07, 12.45]), and those in the receiving gratitude condition reported greater SCS than did those in the positive affect control condition ($p < .001$, 95% CI [7.73, 17.95]) and partner control condition ($p < .001$, 95% CI [5.58, 16.65]).

Supplemental Analyses

Multiple supplemental analyses were conducted to further understand the relationship between experiencing and receiving gratitude and SCS. Specifically, we examined whether the effects of gratitude were independent from other similar variables (see Appendix A for information about these measures). Results revealed significant differences in SCS between the conditions after controlling for general communal motivation, $F(3,198) = 6.27$, $p < .001$, relationship satisfaction, $F(3,198) = 4.64$, $p = .004$, commitment, $F(3,198) = 7.10$, $p < .001$, intimacy, $F(3,198) = 6.52$, $p < .001$, and positive affect, $F(3,198) = 6.38$, $p < .001$. Fisher's LSD post hoc tests are presented in Table 4 in Appendix A.

General Discussion

Although past research has established that people who are motivated to meet their partner's sexual needs (i.e., high in SCS) tend to experience greater sexual and relationship satisfaction (Day et al., 2015; Muise et al., 2013, 2017; Muise & Impett, 2015), research has yet to identify factors that promote SCS. The present studies aimed to fill this gap by examining whether both experiencing and receiving gratitude promote SCS in romantic relationships. The Pilot Study provided initial evidence that participants' tendencies to experience and receive gratitude were significantly associated with SCS. Study 1 was a dyadic, longitudinal study that revealed that participants' experienced and received gratitude were positively associated with changes in SCS from one assessment to the next. Study 2 was an experiment that revealed that

participants who were randomly assigned to either experience gratitude for or perceive gratitude from their romantic partner reported greater SCS than participants in the control conditions.

Implications and Future Directions

These findings have important implications and suggest several directions for future research. First, these studies join a growing body of literature that highlights the benefits of gratitude (Algoe et al., 2010; Hill & Allemand, 2011; Kashdan et al., 2018). In particular, contemporary theory (Algoe et al., 2008; McCullough et al., 2001) and research (Gordon et al., 2012; Grant & Gino, 2010; Lambert & Fincham, 2011) suggest that gratitude functions to motivate people to maintain relationships with valuable others. The current studies extend this growing body of literature to the sexual domain by revealing that gratitude similarly motivates people to meet their partner's sexual needs, often above and beyond their general motivation to meet a partner's needs, which is one important way that couples maintain satisfying relationships (Impett et al., 2014).

Second, future research may benefit by examining the implications of gratitude for other sexual outcomes, such as sexual self-disclosure. Indeed, past research has revealed that people tend to feel more comfortable disclosing their emotions and concerns to the extent that they feel and receive expressions of gratitude (Collins & Miller, 1994; Lambert & Fincham, 2011).

Gratitude may similarly extend to the domain of sexual communication. If so, given that couples often hesitate to disclose their sexual needs and preferences (Byers & Demmons, 1999), ultimately decreasing sexual satisfaction and impairing sexual functioning (Mallory, Stanton, & Handy, 2019), gratitude may not only increase the motivation to meet a partner's sexual needs, but may also increase awareness about, and thus ability to fulfill, those needs by increasing partners' willingness to disclose them.

Third, the present findings can be applied to therapeutic interventions intended to improve sexual satisfaction. Given that declines in sexual satisfaction strongly predict declines in relationship satisfaction (McNulty et al., 2016), practitioners have often sought to identify ways in which couples can maintain, or even improve, sexual satisfaction (for review, see McCarthy & Wald, 2012). The current results suggest that gratitude may be a promising method for achieving that goal. Indeed, practitioners have already begun to incorporate gratitude into several therapeutic techniques (Kerr et al., 2015; Seligman et al., 2005). Although the benefits of these interventions may be due to numerous factors, such as increased relationship connection (Algoe et al., 2010; Kashdan et al., 2018), they may be at least partially due to increased SCS and sexual satisfaction.

Strengths and Limitations

Several limitations of the current research should be addressed. First, although we expected that gratitude would have a particularly important influence on the motivation to meet a partner's sexual needs because of the importance sex holds within romantic relationships (Impett et al., 2014; Sprecher, 2002), we did not assess whether these results emerged due to the importance that participants placed on sex. Future research might benefit from examining whether the implications of gratitude are stronger among people who view sex as highly important for relationship maintenance. Second, past research (Gordon et al., 2012; Joel et al., 2013) suggests that feeling appreciated and valued by a partner promotes one's own feelings of gratitude, ultimately promoting relationship maintenance. Although we found a similar pattern of results in Study 2, we did not find that receiving gratitude predicted changes in experiencing gratitude in Study 1 (see Appendix A); future research should clarify the causal relationship between receiving and experiencing gratitude. Third, the current studies assessed (Pilot Study,

Study 1) and manipulated (Study 2) gratitude broadly and did not distinguish between different types of gratitude, such as benefit-triggered gratitude (i.e., gratitude in response to a specific benefit provided) and more generalized appreciation (i.e., a broader appreciation for the value of a partner). Indeed, past research (Lambert, Graham, & Fincham, 2009) has revealed that the different varieties of gratitude may have unique implications for emotions and perceptions of experiences. Thus, future research may benefit by examining whether different types of gratitude uniquely affect SCS.

Nevertheless, several aspects of the present studies increase our confidence in the results. First, the association between gratitude and SCS replicated across three different samples that were diverse in regard to ethnicity, age, sexual orientation, and relationship status, increasing our confidence in the external validity of our findings. Second, Study 1 employed a longitudinal design to establish the temporal association, and Study 2 employed an experimental design to establish the causal relationship, between gratitude and SCS. Together, the current studies aimed to identify a determinant of SCS to further understand how couples can combat normative declines in sexual and relationship satisfaction. Results from these studies suggest that experiencing and receiving gratitude increased the motivation to meet a partner's sexual needs.

CHAPTER III: LOOK BUT DON'T TOUCH? SELF-REGULATION DETERMINES
WHETHER NOTICING ATTRACTIVE ALTERNATIVES INCREASES INFIDELITY

Abstract

People regularly encounter tempting alternatives to their relationship partners, and it has been argued that paying attention to desirable alternatives increases the risk of infidelity. However, whether the temptation of noticing attractive alternatives leads to actual infidelity should depend on the ability to resist such temptations. More specifically, taking heed of attractive others should increase the likelihood of infidelity only when people lack self-regulatory ability. One experiment and one longitudinal study of newlyweds both demonstrated that the implications of attending to attractive alternatives for infidelity depended on participants' self-regulatory ability to resist such temptations. Specifically, the tendency to notice attractive alternatives was associated with greater infidelity among those with poorer self-regulatory ability, but not among those with greater self-regulatory ability. These results further understanding about how people can maintain and protect their relationships in the face of temptation.

Introduction

"Temptation usually comes in through a door that has been deliberately left open."

Arnold Glasow (1995)

"A girl can still admire, can't she? Even those who can't go in the store can still window-shop, right?"

Colleen Houck (2011)

One of the most detrimental threats that people face is the temptation of attractive alternative romantic partners. Given that most people in committed romantic relationships are expected to be romantically and sexually exclusive to their partners (Conley, Moors, Matsick, & Ziegler, 2013), infidelity—i.e., engaging in romantic behaviors with others while in a romantically-exclusive relationship—can result in harmful individual and relational outcomes for both those who engage in infidelity (e.g., diminished self-concept clarity, greater psychological discomfort; Foster & Misra, 2013), as well as their primary partners (e.g., loss of trust, greater relational uncertainty; Charny & Parnass, 1995). Given such costs, it is not surprising that pursuing alternative partners is the most common predictor of relationship dissolution (Amato & Previti, 2003). Nevertheless, despite such harmful consequences, infidelity is surprisingly common, affecting an estimated 20 to 30% of relationships (Jones & Weiser, 2014).

Echoing Glasow's adage about temptation, it is argued that avoiding desirable alternatives reduces the temptation, and thus likelihood, of infidelity (e.g., Maner, Gailliot, & Miller, 2009; Miller, 1997). Consistent with this idea, highly committed people spend less time looking at attractive people (Miller, 1997), and such actions appear effective: paying less attention to attractive alternatives reduces the risk of infidelity (McNulty et al., 2018).

But does observing tempting alternatives always motivate people to pursue those alternatives? Or, as suggested by Houck, can people safely admire attractive others while resisting the temptation of pursuit? The present studies examine whether the implications of paying attention to attractive alternatives for infidelity depend on the self-regulatory ability to resist such temptations. To this end, the remainder of this introduction is organized into three sections. The first section reviews theory and research suggesting that paying attention to attractive others increases the risk of infidelity. The second section reviews theory suggesting

that self-regulatory ability to resist pursuing tempting alternatives should determine whether or not paying attention to tempting alternatives increases the likelihood of infidelity. Finally, the third section describes the goals and hypotheses of the present study.

Ignoring Attractive Alternatives Should Prevent Infidelity

Attractive people are hard to ignore. In particular, people are quicker to notice (Hoss, Ramsey, Griffin, & Langlois, 2005) and spend more time looking at (Aharon et al., 2001) attractive people compared to average or unattractive people. Given that people are more likely to pursue desirable things (e.g., delicious food) after devoting attention to them (Harris, Bargh, & Brownell, 2009), it has been argued (Buss, 2016; Thornhill & Gangestad, 1999) that paying attention to desirable others adaptively motivates people to pursue relationships with them. At times, this tendency to notice, and thus pursue, attractive people can be adaptive, given that securing relationships with attractive people tended to promote survival outcomes through greater status (Frevert & Walker, 2014), access to resources (Townsend & Levy, 1990), and reproductive outcomes (Thornhill & Gangestad, 1999).

For people in an exclusive romantic relationship, however, noticing attractive others may be costly by increasing the likelihood of pursuing an extradyadic romantic relationship and thus threatening the stability of their established relationships. Thus, several theories of close relationships posit that people who are committed to maintaining their romantic relationships should be motivated to avoid attractive others. For example, interdependence perspectives (e.g., Rusbult, Olson, Davis, & Hannon, 2004) suggest that committed partners are motivated to engage in processes that protect their close relationships and thus are motivated to avoid attractive alternative partners. Similarly, contemporary evolutionary perspectives (e.g., Kenrick, Li, & Butner, 2003) emphasize the adaptive value of maintaining long-term relationships to

ensure the survival of offspring and thus suggest that humans evolved psychological biases, such as ignoring attractive alternative partners, to protect their primary, long-term relationships. Extensive research is also consistent with the idea that people pay less attention to attractive others to the extent that they are committed to their current relationship partners (Birnbau et al., in press; Maner et al., 2009; Maner et al., 2008; Miller, 1997). Nevertheless, only one study has examined whether such attention actually increases the risk of infidelity. Specifically, McNulty and colleagues (2018) demonstrated in two, three-year longitudinal studies of newlywed couples that disengagement of attention from pictures of attractive alternatives decreased the probability that participants endorsed having sexual relations with anyone other than their spouse, having a romantic affair, or engaging in infidelity.

Self-Regulatory Ability May Determine the Implications of Noticing Alternatives

Still, whether noticing attractive others leads to infidelity should depend on the ability to resist pursuing such temptations. Specifically, paying attention to attractive others should increase the risk of infidelity only when people lack self-regulatory ability—that is, the ability to resist initially satisfying impulses (e.g., infidelity) that hinder distal goals (e.g., maintaining an exclusive relationship; Carver & Scheier, 2004). Self-regulatory ability helps people resist a variety of tempting behaviors (e.g., gambling, unhealthy eating; Baron & Dickerson, 1999), and is influenced by both dispositional and situational factors. In particular, although individual differences in self-control are somewhat stable over time (Hay & Forrest, 2006), self-regulatory ability can also be temporarily impaired when people are intoxicated, ill, stressed, or recovering from deep, prolonged concentration (Hagger, Wood, Stiff, & Chatzisarantis, 2010). Although issues regarding theoretical perspectives of self-regulation are still being debated, such as the manner in which self-regulatory ability is replenished (see Lange & Eggert, 2014), the idea that

impaired self-regulatory ability increases the likelihood of engaging in tempting behaviors is well supported (see Vohs & Baumeister, 2016).

Self-regulatory ability may also help people avoid pursuing the attractive alternatives that they notice. Noticing attractive alternatives presents the temptation to initiate a romantic or sexual relationship that must be resisted by people who want to maintain their exclusive primary relationships. Thus, self-regulatory ability should influence whether or not people resist the temptation to pursue a relationship with attractive alternatives that they notice. Research is consistent with the idea that low self-regulation is associated with poorer ability to resist infidelity (Ciarocco, Echevarria, & Lewandowski, 2012; Gailliot & Baumeister, 2007). However, research has yet to examine whether self-regulatory ability determines whether or not paying attention to attractive alternatives increases the risk of infidelity.

Hypotheses and Overview of the Current Studies

The present studies examined whether people in romantic relationships are more likely to engage in infidelity as a result of initially attending to attractive alternatives, and whether the implications of attending to attractive alternatives depend on self-regulatory ability. Given that paying attention to attractive alternatives introduces the temptation of infidelity, we predicted that paying attention to such alternatives would increase the risk of infidelity among those who struggle to resist such temptations (i.e., who possess poorer self-regulatory ability). In contrast, we predicted that paying attention to attractive alternatives would not increase the risk of infidelity among those who possess greater self-regulatory ability.

We conducted two studies to test our ideas. Study 1 was an experiment intended to provide internal validity; participants in romantic relationships reported their attention to attractive alternatives, were randomly assigned to complete tasks that either did or did not impair

their self-regulatory ability, and were then given the option of engaging in two behaviors that typically precede and contribute to infidelity: (a) expressing the desire to pursue attractive alternatives and (b) registering for dating software designed to promote infidelity. Study 2 was a longitudinal study intended to provide ecological validity; newlywed couples reported dispositional self-control, completed a task assessing their tendency to avoid attending to attractive others, and reported any acts of infidelity six times over the following two years.

These studies are novel and thus expand our knowledge about the determinants of infidelity in two important ways. First, although it has been previously argued (Karremans, Pronk, & van der Wal, 2015; Lydon & Karremans, 2015) that the likelihood of infidelity should depend on the interaction of both attention to alternatives and self-regulatory ability, previous research has examined the implications of these constructs in isolation. The current studies are the first test of the interactive effects of these constructs. Second, most prior research on this topic has relied on reports of the hypothetical probability or quasi-acts of infidelity (Ciarocco et al., 2012; Gailliot & Baumeister, 2007; Ritter, Karremans, & van Schie, 2010) from people who were not in relationships (Gailliot & Baumeister, 2007; Ritter et al., 2010), which may not reflect the actual likelihood of infidelity. For instance, Ritter and colleagues (2010) demonstrated that self-regulatory ability was associated with lower interest in pictures of attractive others in a sample that contained both participants who were single and dating.

Study 1

The goal of Study 1 was to provide an experimental test of our predictions. Undergraduate students in romantic relationships first reported their attention to attractive alternatives. Next, they were randomly assigned to complete two tasks that either did or did not impair their self-regulatory ability. Finally, they evaluated and expressed interest in registering

for a dating application designed to help people engage in infidelity. We predicted that people's attention to attractive alternatives would be associated with a greater interest in pursuing attractive alternatives and a higher likelihood of registering for the dating app among participants in the impaired self-regulatory condition, but not among participants in the control condition.

Methods

Participants

Two hundred undergraduate students (49 men, 148 women, 3 transgender) who were in a romantic relationship for at least three months were recruited from a university in the southeastern United States. This sample size was obtained because an a priori power analysis based on small-to-medium effect sizes ($r = .20$) indicated that the power to detect an association between the interactive effect of attention to alternatives and self-regulatory ability would be greater than .80. Given that our predictions likely do not generalize to people in sexually non-exclusive relationships (who are thus unmotivated to avoid extradyadic sexual behavior), we excluded 23 participants who reported being in sexually non-exclusive relationships.

The remaining 177 participants (36 men, 138 women, 3 transgender) had a mean age of 19.07 years ($SD = 2.67$) and were in a relationship for an average of 18.40 ($SD = 15.98$) months. One hundred and forty-four (81%) participants were dating exclusively, 23 (13%) were dating casually, 6 (3%) were engaged, and 4 (2%) were married. Sixty-nine participants (39%) identified as Black or African American, 68 (38%) identified as White or Caucasian, 16 (9%) identified as Hispanic or Latino/a, 10 (6%) identified as Asian, and the remaining 14 (8%) identified as another ethnicity or two or more ethnicities. The majority of participants ($n = 150$; 85%) identified as heterosexual, 17 (10%) identified as bisexual, 4 (2%) identified as gay or lesbian, and 6 (3%) identified as other or did not know.

Procedure

After providing their informed consent, participants were told that they would be participating in three ostensibly unrelated studies. They were told that the first study involved filling out several questionnaires and, during which, they completed measures of attention to attractive alternatives and demographic information.

In the second ostensibly unrelated study, which participants were told was unrelated to their romantic relationship, participants were randomly assigned to an impaired self-regulatory ability or control condition. Given the current debate regarding the strength of brief self-regulation manipulations (see Baumeister, Tice, & Vohs, 2018; Friese, Loschelder, Gieseler, Frankenbach, & Inzlicht, 2018), participants completed two different lengthy tasks—a restricted writing task (Schmeichel, 2007) and a working memory task (Oswald, McAbee, Redick, & Hambrick, 2015)—which tend to provide more meaningful change in participants’ self-regulatory ability than do brief (e.g., 5-minute) tasks (see Sjästad & Baumeister, 2018). For the restricted writing task, all participants wrote a story for 15 minutes about a recent trip they took. Participants in the *impaired condition* were not allowed to use the letters *a* or *n* when writing their story. Given that these letters appear in many English words, this task requires considerable concentration and thus taxes self-regulatory ability (see Hagger et al., 2010). Participants in the *control condition* were not allowed to use the letters *q* or *x* when writing their story. Given that these letters appear in fewer English words, this task is easier and does not tax self-regulatory ability. For the working memory task, all participants were instructed to remember a sequence of three to seven letters and were required to input the letters they recalled at the end of each sequence. Each letter appeared on the computer screen for two seconds, and participants completed roughly 25 sequences of letters. Participants in the *impaired condition* were required

to solve math problems between the presentation of each letter. Given that it is difficult to recall a series of letters when completing an unrelated cognitive task between each letter, this task requires focus and multitasking, thus impairing self-regulatory ability (see Redick, 2016). Participants in the *control condition* only needed to remember the series of letters. Given that it is easier to sustain attention when free from distractions (i.e., not solving math problems), this task is easier and does not tax self-regulatory ability.

In the third ostensibly unrelated study, participants were asked to evaluate a mobile phone dating application that was being developed. Participants used this app to view profiles of 50 people of their preferred gender for as long as they desired and indicate whether or not they would be interested in meeting each person. Participants were told their responses were vital to develop a major innovation of this app—an algorithm that selects potential matches based on responses to previous matches—to motivate participants to honestly indicate their interest in pursuing each person. After viewing the profiles, participants were told that they could receive a free premium version of the app by providing their email address in appreciation for their feedback on how the app could be improved. Prior to asking participants if they wanted to sign up for the app, participants were informed about several security features of the app (e.g., password protection, blocking anyone from their extant social network) that prevents romantic partners from discovering the app and thus would facilitate infidelity. Finally, participants were debriefed and given course credit for their participation.

Measures

Attention to Alternatives. Attention to alternatives was assessed with the Passive Awareness subscale of the Attention to Alternatives Index (Miller et al., 2010). This measure requires individuals to report the extent to which they agree with seven items that assess the

extent to which they notice attractive others (e.g., “good-looking people always catch my attention”, “I can’t help but notice when attractive people are around”) using a 5-point Likert response scale from 1 (*never*) to 5 (*always*). Internal consistency was acceptable ($\alpha = .89$).

Infidelity. Two behaviors that contribute to the pursuit of infidelity were assessed during the study. The first behavior was whether or not participants registered for the dating app that was designed to promote infidelity (0 = *did not register for the app*, 1 = *did register for the app*). The second behavior was the number of people who participants indicated they would want to pursue through the dating app.

Results

Descriptive Statistics and Preliminary Analyses

Descriptive statistics and bivariate correlations appear in Table 9 in Appendix B. Men ($M = 22.14$, $SD = 6.17$) reported attending to attractive alternatives more than women ($M = 19.80$, $SD = 5.92$), $t(172) = 2.10$, $p = .038$, $d = .39$, and men ($M = 15.69$, $SD = 11.41$) were interested in pursuing more alternatives on the dating app than were women ($M = 10.73$, $SD = 10.39$), $t(172) = 2.50$, $p = .013$, $d = .45$. In contrast, men (64%) and women (57%) did not differ in how likely they were to register for the dating app, $X^2(1) = 0.64$, $p = .425$, $\Phi = 0.06$. Those in the impaired condition ($M = 13.37$, $SD = 11.19$) were interested in pursuing more alternatives than were those in the control condition ($M = 9.81$, $SD = 10.03$), $t(175) = -2.23$, $p = .027$, $d = .34$, however, those in the impaired condition (60%) were no more likely than those in the control condition (57%) to register for the dating app, $X^2(1) = 0.14$, $p = .713$, $\Phi = 0.03$.

Did the Implications of Attention to Alternatives for Behaviors that Contribute to Infidelity Depend on Self-Regulatory Impairment?

To address our primary hypotheses that attention to attractive alternatives would be

associated with behaviors that contribute to infidelity only among those whose self-regulatory ability was impaired, we conducted two regression analyses. First, to examine the implications of attention for registering for the dating app, we conducted a logistic regression in which a dummy-code indicating whether participants registered for the dating app (0 = *no*, 1 = *yes*) was regressed onto their mean-centered attention to alternatives scores, a dummy-code for condition (0 = *control*, 1 = *impaired*), and the Self-Control Condition X Attention interaction. Results are presented in the top of Table 10 in Appendix B. As the table reveals, the Self-Control Condition X Attention interaction significantly predicted the likelihood of registering for the dating app (see Figure 1, Panel A in Appendix B). Consistent with predictions, participants' attention to attractive alternatives was associated with a greater likelihood of registering for the dating app among those in the impaired self-regulatory ability condition, $b = 0.12$, $SE = 0.04$, $Wald(1) = 8.72$, $p = .003$, $Odds Ratio = 1.12$, but not among those in the control condition, $b = 0.00$, $SE = 0.04$, $Wald(1) = 0.00$, $p = .991$, $Odds Ratio = 1.00$. A supplemental analysis revealed that the Self-Control Condition X Attention interaction remained marginally significant when participants' commitment was controlled, $b = 0.11$, $SE = 0.06$, $Wald(1) = 3.57$, $p = .059$, $Odds Ratio = 1.11$.

Second, to examine the implications of attention for the number of people that participants reported being interested in pursuing, we regressed participants' frequency of interest scores onto their mean-centered attention to alternatives scores, the dummy-code for condition, and the Self-Control Condition X Attention interaction, and controlled for a dummy-code for participants' gender (-1 = *male*, 1 = *female*), given that preliminary analyses revealed that men were interested in more alternatives. Results are presented in the bottom of Table 10 in Appendix B. As the table reveals, those in the impaired condition were interested in pursuing

more alternatives than were those in the control condition. Nevertheless, this association was qualified by a significant Self-Control Condition X Attention interaction (see Figure 1, Panel B in Appendix B). Participants' attention trended toward being associated with greater alternatives among those in the impaired self-regulatory ability condition, $b = 0.27$, $SE = 0.17$, $t(169) = 1.54$, $p = .125$, $\beta = .15$, but trended toward being associated with fewer alternatives among those in the control condition, $b = -0.31$, $SE = 0.21$, $t(169) = -1.48$, $p = .141$, $\beta = -.17$. Supplemental analyses revealed that the Self-Control Condition X Attention interaction remained significant when participants' gender was not controlled, $b = 0.54$, $SE = 0.27$, $t(173) = 2.04$, $p = .043$, $\beta = .20$.

Discussion

Study 1 provides initial evidence that the association between attention to attractive alternatives and infidelity depends on self-regulatory ability. Although attending to attractive alternatives was associated with interest in pursuing more alternatives and a greater likelihood of registering for a dating app designed to promote infidelity among participants whose self-regulatory ability was inhibited, it was not associated with those behaviors among participants whose self-regulatory ability was not inhibited. Nevertheless, Study 1 is limited in at least two respects. First, Study 1 relied on self-reports of attention to attractive alternatives, which may be biased due to self-presentational concerns or lack of insight (see Fincham & May, 2017). Thus, in Study 2, we objectively assessed the extent to which participants attend to attractive alternatives using a visual dot probe reaction-time measure. Second, although Study 1 assessed behaviors that often precede and contribute to the pursuit of infidelity (i.e., registering for a dating app designed to promote infidelity), actual infidelity was not assessed. Thus, in Study 2, we assessed participants' engagement in extradyadic sexual behaviors.

Study 2

The goal of Study 2 was to provide an ecologically valid test of our predictions. At Baseline, newlywed couples completed a task that objectively assessed their tendency to avoid attending to attractive alternatives, and reported the extent they attend to attractive alternatives and dispositional self-regulatory ability. Next, participants reported whether or not they engaged in various sexual behaviors with someone other than their spouse (i.e., infidelity) six times over the following two years. We predicted that both objective and self-reported attention to attractive alternatives would be associated with infidelity among participants low in self-regulatory ability, but not among participants high in self-regulatory ability.

Methods

Participants

One hundred and one newlywed couples (93 heterosexual couples, 7 lesbian couples, 1 gay couple) participated in a broader study of marriage. Participants were recruited through invitations sent to eligible couples who had applied for marriage licenses in the county where the study took place (in central North Carolina). Couples who responded were screened in a telephone interview to ensure they met the following eligibility criteria: (a) they had been married for less than 3 months, (b) they were at least 18 years of age, and (c) they spoke English and had completed at least 10 years of education (to ensure comprehension of the questionnaires). This sample size was the maximum number of couples we had the funds to recruit.

Husbands were 32.66 years old ($SD = 8.72$) on average. Sixty-two percent were White or Caucasian, 28% percent were Black or African American, and the remaining 9% were another or two or more ethnicities. Wives were 32.08 years old ($SD = 8.74$) on average. Sixty-five percent

were White or Caucasian, 26% were Black or African American, and the remaining 11% were another or two or more ethnicities.

Procedure

Couples first completed a series of questionnaires that included measures of the extent they attend to attractive alternatives, their self-regulatory abilities, demographic information, and other questionnaires unrelated to the current hypotheses. All measures were completed online using Qualtrics survey software. Participants then attended a laboratory session where they completed a visual dot probe task that assessed their tendency to divert attention from attractive individuals of their preferred gender(s). Couples were paid \$100 for their participation at Baseline. Six times over the following two years, at roughly four-month intervals, couples were emailed a packet of questionnaires that included a measure of infidelity. 179 participants (89%) completed the first follow-up assessment, 169 participants (84%) completed the second follow-up assessment, and 145 participants (72%) completed the third follow-up assessment. Ten participants (5%) did not complete the follow-up because they had separated or divorced; no data were collected from participants who informed us their relationships had dissolved. Couples were paid \$25 for each follow-up assessment.

Measures

Attention to Alternatives. Two measures assessed the extent to which participants attend to attractive alternatives. First, spouses completed the Passive Awareness subscale of the Attention to Alternatives Index (Miller et al., 2010) described in Study 1 ($\alpha = .93$). Second, during their laboratory session, participants completed a visual dot probe task (e.g., Maner et al., 2006; Maner et al., 2008) that assessed how quickly they shift attention away from attractive faces. This computer task first instructed participants to focus their attention on a fixation cross

("X") that appeared for 1000 ms in the center of the computer screen. Next, a picture of either an attractive male, average male, attractive female, or average female face appeared for 500 ms in one of the four quadrants of the screen. An independent group of undergraduate students established that the attractive faces were significantly more attractive than the average faces (see Maner et al., 2007). Next, a picture of a categorization object (circle or square) appeared in one of the quadrants of the screen. Participants were instructed to press the "a" (circle) or "k" (square) key when they identified the categorization object. The speed with which participants respond reflects the attention captured by the face on the screen. Participants completed a practice block of 20 trials and then a block of 20 target trials. An index of spouses' attention to alternatives was formed by averaging their reaction times to trials in which they saw an attractive face of their preferred gender(s). Higher scores indicate that participants took longer to divert their attention from attractive faces of their preferred gender(s). We excluded trials in which participants categorized the stimulus incorrectly (3%) and people whose average response latency was greater than 3 SDs above the sample mean ($n = 3$; see Maner et al., 2007).

Self-regulatory Ability. Participants completed the Self-control Scale (Tangney, Baumeister, & Boone, 2004) to assess their dispositional ability to regulate their behavior. This measure requires individuals to report the extent to which they agree with 13 items that assess self-control (e.g., "I am good at resisting temptation") using a 5-point Likert response scale from 1 (*not at all agree*) to 5 (*strongly agree*). Appropriate items were reversed and all items were summed. Internal consistency was acceptable ($\alpha = .84$).

Infidelity. Six times over the following two years, participants reported whether or not they engaged in 14 sexual behaviors (e.g., kissing on the lips, performing or receiving oral sex, sexual intercourse, sharing nude pictures of yourself, talking dirty) with someone other than their

spouse (0 = *no*, 1 = *yes*) in the past four months. Given that spouses engaged in relatively few acts of infidelity at each time point and the frequency of such behaviors were highly skewed (*Skew* = 6.26), we maximized power by using a dummy code that indicated whether or not participants engaged in any act of infidelity over the course of the study (0 = *no*, 1 = *yes*).

Results

Descriptive Statistics and Preliminary Analyses

Descriptive statistics and bivariate correlations appear in Table 11 in Appendix B. Men and women did not differ in self-reported or objective attention to alternatives, self-control, or rates of infidelity (all *ps* > .172). Fifteen men (18%) and eighteen women (19%) reported engaging in at least one act of infidelity. While the bivariate association between self-reported and objective attention to alternatives was not significant, self-reported attention was positively associated with objective attention after controlling for the average reaction time to non-attractive faces, $b = 0.03$, $SE = 0.01$, $t(96) = 2.24$, $p = .028$, $\beta = .43$, supporting the convergent validity of both measures.

Did the Implications of Attention to Alternatives for Infidelity Depend on Self-Regulatory Ability?

To address our primary hypotheses that attention to attractive alternatives would be associated with infidelity only among those low in self-regulatory ability, we estimated two separate two-level models using the HLM 7.03 computer program in which a dummy-code for spouses' infidelity was regressed onto mean-centered self-control scores, either their mean-centered (a) objective attention to alternatives scores, controlling for their mean-centered average reaction time to non-attractive faces or (b) self-reported attention to alternatives scores, and the Self-Control X Attention interaction. Because the dependent variable was binary, we specified a

Bernoulli outcome distribution. The non-independence of couples' data was controlled in the second level of the model with a randomly varying intercept.

Results are presented in Table 12 in Appendix B. The first model examined the implications of objective attention to alternatives. In this model, the Self-Control X Attention interaction was significantly associated with infidelity (see Figure 2, Panel A in Appendix B). Consistent with predictions, spouses' attention to attractive alternatives was associated with greater infidelity among spouses low in self-control, $b = 0.01$, $SE = 0.01$, $t(80) = 2.09$, $p = .040$, *Odds Ratio* = 1.01, but not among spouses high in self-control, $b = -0.00$, $SE = 0.01$, $t(80) = -0.47$, $p = .640$, *Odds Ratio* = 1.00. The second model examined the implications of self-reported attention to alternatives. In this model, the Self-Control X Attention interaction was significantly associated with infidelity (see Figure 2, Panel B in Appendix B). Consistent with predictions, spouses' attention to attractive alternatives was associated with greater infidelity among spouses low in self-control, $b = 0.20$, $SE = 0.05$, $t(83) = 4.01$, $p < .001$, *Odds Ratio* = 1.23, but not among spouses high in self-control, $b = 0.02$, $SE = 0.06$, $t(83) = 0.27$, $p = .785$, *Odds Ratio* = 1.02.

General Discussion

Does noticing attractive alternatives increase the risk of infidelity? An experiment and a longitudinal study provide evidence that the role of attention to attractive alternatives in the pursuit of infidelity depends on the ability to resist such temptations. In particular, attending to attractive alternatives was associated with (a) expressing interest in more alternatives, and a greater likelihood of (b) registering for a dating app designed to promote infidelity and (c) engaging in actual infidelity among people low in dispositional self-control (Study 2) or whose self-regulatory ability was impaired (Study 1). In contrast, attending to attractive alternatives was not associated with these outcomes among participants with greater self-regulatory ability. Thus,

the tendency to notice attractive alternatives predicted a greater risk for infidelity and behaviors that contribute to infidelity only when people lacked the ability to resist such temptations.

Several aspects of the present studies increase our confidence in the current results. First, these results replicated across different operationalizations of attending to attractive alternatives (i.e., self-report and objective reaction times), infidelity (i.e., self-report and behaviors that contribute to infidelity), and self-regulatory ability (i.e., dispositional ability and experimentally impaired situational ability), reducing the likelihood that the results were due to operationalization of these variables. Second, the results replicated across individuals in both married and dating relationships, helping to ensure that the results obtained were not unique to individuals in certain types of romantic relationships (see Russell, Baker, & McNulty, 2013). Third, Study 1 experimentally manipulated self-regulatory ability, enhancing our confidence that self-regulatory ability causes the behavioral implications of attention to alternatives, and Study 2 examined the longitudinal implications of attention to alternatives for actual acts of infidelity. Finally, our samples across the two studies were highly diverse in regard to ethnicity, age, and sexual orientation, increasing our confidence in the external validity of our findings.

Implications

These findings have important theoretical and practical implications. First, the present study is among the first to show the behavioral implications of attending to attractive alternatives. Given that committed people avoid attractive others (Miller, 1997), it has long been posited (Rusbult et al., 2004) that avoiding attractive alternatives is a mechanism by which people can maintain their relationships. Nevertheless, only one study (McNulty et al., 2018) has demonstrated that avoiding tempting alternatives actually prevents infidelity. The current work not only replicates this important work, but extends it with a more nuanced perspective that

suggests that the implications of attention to attractive others depend on the dispositional and situational self-regulatory ability to resist temptation. Furthermore, unlike previous research that has relied on reports of the hypothetical probability of infidelity from people who were not in relationships (Gailliot & Baumeister, 2007; Ritter et al., 2010), quasi-acts of infidelity (e.g., providing a phone number to a research assistant; Ciarocco et al., 2012; Gailliot & Baumeister, 2007; Ritter et al., 2010), or narrow assessments of infidelity (e.g., McNulty et al., 2018), the current studies relied upon participants in established, committed relationships (Studies 1-2) and examined reports of actual infidelity using a broader range of both indirect (e.g., sharing nude pictures) and direct (e.g., sexual intercourse) romantic behaviors (Study 2).

Second, the current research challenges the prevalent idea that paying attention to alternatives is always harmful by increasing the risk of infidelity (see Maner et al., 2009; Miller, 1997). Lay people appear to endorse this idea—they avoid looking at attractive others when in committed relationships (Plant et al., 2010) and often feel jealous when their partners pay attention to attractive others (Kennedy-Lightsey & Booth-Butterfield, 2011). Critically, however, the current results suggest that greater attention to attractive others does not increase the risk of infidelity among people who possess the self-regulatory ability to resist such temptations. Thus, if self-regulatory ability is maintained, the impulse to notice attractive alternatives does not need to be stifled. In fact, past research suggests that deliberately avoiding attractive others may have the opposite intended effect by increasing attention to attractive others and positive attitudes toward infidelity (DeWall et al., 2011).

Finally, these studies have preliminary implications for practitioners helping couples to prevent infidelity. For example, given that people have different relationship expectations and beliefs (Snyder et al., 2008), couples may first benefit from an explicit discussion about whether

or not it is acceptable within their relationship to look at and/or pursue alternatives. Beyond simply reducing confusion or conflict about divergent standards, this conversation may also prevent infidelity given that people are more likely to meet their goals when they are clearly stated and expressed (Locke, 1996). Similarly, identifying and avoiding situations that tax self-regulatory ability (e.g., drinking at a bar with an attractive friend) may reduce the temptation of attractive others; indeed, anticipating such obstacles can help people avoid self-regulatory failure (Fishbach & Hofmann, 2015). Although avoiding these situations may ensure that people high in dispositional self-regulatory ability can safely look at attractive others, additional strategies may be necessary for people low in dispositional self-regulatory ability. For example, although it may be impractical to completely avoid attractive others, they might minimize their exposure (e.g., avoiding pornography). Further, given that they struggle with temptation, they might avoid situations ripe with temptation (e.g., a work trip with an attractive coworker). Finally, interventions that improve self-regulatory ability (e.g., such as committing to a work-out regimen) can produce broader improvements in self-regulation (Baumeister et al., 2006) and may indirectly improve people's dispositional ability to resist tempting attractive alternatives.

Limitations and Future Directions

Several factors limit the conclusions that can be drawn from these results until they can be replicated and extended. First, given that people often hesitate to disclose undesirable behavior or information that could jeopardize their current relationships (Fincham & May, 2017), participants in Study 1 may have underreported their interest in pursuing others whom they knew they would not meet and participants in Study 2 may have underreported actual acts of infidelity.

Although our confidence in these results were bolstered by the similar pattern of results that emerged when predicting the likelihood of actually registering for a dating app that

facilitates infidelity, future research might incorporate reports from romantic partners and close others who may be aware of acts of infidelity. Second, although the current studies demonstrated that both dispositional (Study 2) and situational (Study 1) self-regulatory ability determine the implications of attention, neither study assessed both. Future research might assess both dispositional and situational self-regulatory ability to examine whether people are particularly vulnerable to infidelity when low in both. Third, although Studies 1 and 2 varied in the type of relationship (i.e., dating vs. newlywed couples), neither study recruited couples that had been together for extended periods of time. Thus, future research should consider the role that relationship length has in the context of the current predictions. Finally, although the majority of newlyweds are in sexually exclusive relationships (Rubin, Moors, Matsick, Ziegler, & Conley, 2014), newlyweds in Study 2 did not report whether or not they were in sexually exclusive relationships and our predictions likely do not generalize to couples who do not have reasons to avoid the temptation of extradyadic sexual behavior. Thus, future research should assess whether participants are in sexually exclusive relationships. Similarly, future research should consider the role of sexual desire. Past research has shown that sexual desire predicts infidelity (Mark, Janssen, & Milhausen, 2011) and thus may account for the association between attention and infidelity.

Conclusion

Consistent with Glasow's assertion that "temptation usually comes in through a door that has been deliberately left open," it is often argued that the temptation to engage in infidelity is magnified by the tendency to deliberately pay attention to attractive alternatives (e.g., Lydon & Quinn, 2013; Rusbult et al., 2004). But is there truth to Houck's quip that people can admire the attractiveness of others without pursuing them? The current studies suggest that people's self-

regulatory ability to resist such temptations determines the accuracy of these two opposing perspectives. In particular, the current results revealed when self-regulatory resources are lacking, people should not entertain the temptation of attractive alternatives by paying attention to them because it leads to a greater risk of infidelity. However, if people are capable of maintaining their self-regulatory ability, noticing or admiring attractive others does not increase the likelihood of infidelity. These results add to a growing literature on the topic of reducing potential threats to romantic relationships and furthers understanding about how people can maintain and protect their relationships in the face of temptation.

CHAPTER IV: PLAYING THE FIELD OR LOCKING DOWN A PARTNER? PERCEPTIONS OF AVAILABLE ROMANTIC PARTNERS AND COMMITMENT READINESS

Abstract

People often consider how ready they feel for a committed romantic relationship before initiating one. Although research has only begun to identify the antecedents of commitment readiness, several theoretical perspectives suggest that it should be shaped by the perceived frequency of available partners. In this brief Case Report, we report the results from four studies (one correlational, three experimental) that tested this idea among single people. A Pilot Study assessed participants' perceptions of available romantic partners and their commitment readiness. In Studies 1a, 1b, and 2, participants read articles (Studies 1a and 1b) or created dating profiles and were presented with false feedback (Study 2) that influenced perceptions of available partners and reported their commitment readiness. Results suggested that people were less ready to commit to a romantic relationship to the extent that they perceived they had many partners available to them. These results further understanding of factors that promote the decision to initiate a committed relationship.

Introduction

How do people know when they are ready to enter into a committed romantic relationship? Although considerable research has investigated why people become romantically attracted to others (for review, see Feingold, 1990; Orbuch & Sprecher, 2006) and what motivates people to maintain established relationships (for review, see Stanley et al., 2010; Agnew & VanderDrift, 2018; Tran et al., 2019), relatively little research has investigated the process of relationship initiation (see Campbell & Stanton, 2014; Eastwick et al., 2019). Recent

research has revealed, however, that feelings of readiness to enter into a committed relationship—i.e., commitment readiness—play an important role. Specifically, people who are single frequently evaluate the extent to which they are ready to commit to a romantic relationship (Agnew et al., 2019; Hadden et al., 2018), and such evaluations not only shape the decision to enter into a relationship (Hadden et al., 2018) but also promote relationship maintenance behaviors (e.g., self-disclosure) once they enter into those relationships (Agnew et al., 2019).

Despite the importance of commitment readiness for relationship initiation, research has only begun to identify factors that cause people to believe that they are ready to commit to a romantic relationship (Agnew et al., 2020). Extant theory and research suggest that the perceived availability of potential partners may influence commitment readiness. However, such perspectives can be used to make competing predictions regarding the direction of this influence. On the one hand, given that humans likely evolved to secure the most desirable partner possible (Buss & Schmitt, 1993), and given that people who perceive many potential partners should benefit from being more selective to ensure they select a partner who is maximally desirable, perceiving *many* available potential partners may decrease readiness to enter into a committed relationship. On the other hand, given that it is threatening to acknowledge a dearth of romantic interest from others (Kenrick et al., 1993), and people are motivated to view themselves in a favorable manner (Leary, 2007; Shrauger, 1975), perceiving *few* potential partners may motivate people to defensively decide that they are not ready for a committed relationship and thus instead decrease commitment readiness. The goal of the current research was to test these competing predictions.

Perceiving Many Potential Partners May Decrease Commitment Readiness

As noted, there are reasons to expect that perceiving many available partners may decrease commitment readiness. In particular, humans likely evolved to pursue and secure the most desirable partner possible (Buss & Schmitt, 1993). Further, given that norms of monogamy discourage pursuing multiple partners (Schmookler & Bursik, 2007), it would be adaptive for people with numerous potential partners to adopt a cautious approach when considering potential partners because a cautious approach would decrease the likelihood of inadvertently committing to a less than optimal partner. In contrast, given that people with fewer available partners have fewer opportunities to secure a partner, not pursuing an available partner greatly increases the risk that they ultimately end up unpartnered and fail to reap the benefits of a committed romantic relationship (Baumeister & Leary, 1995; Feeney & Collins, 2014; Fitzsimons et al., 2015). Together, these literatures suggest that people should be less ready to commit to a romantic relationship to the extent that they perceive they have many available partners.

Theory and research also provide indirect evidence for the idea that perceiving many available partners decreases commitment readiness. For instance, theoretical perspectives (Baumeister & Vohs, 2004; Sprecher, 1998) and supporting research (Jemmott et al., 1989; Pennebaker et al., 1979; Stone et al., 2007; Uecker & Regnerus, 2010) on sex ratios suggest that people become less selective when their sex outnumbered the opposite sex and thus have fewer romantic opportunities, and become more selective when their sex is in the minority and thus have greater romantic opportunities. Similarly, economic theories (Lynn, 1991; Rosato, 2016; Schwartz & Ward, 2004) and supporting research (Haynes, 2009; Iyengar & Lepper, 2000) on scarcity suggest that people tend to desire scarce or limited options more than highly available options, and often struggle to select an option when choices are too plentiful. Finally, theory

(Kelley & Thibaut, 1978; Rusbult & Buunk, 1993) and research (Johnson & Rusbult, 1989; Miller, 1997) on interdependence suggest that people in established relationships become less committed to their partners to the extent that they perceive there are more desirable alternative partners. Although these bodies of research are broadly consistent with our predictions, research has yet to directly test the idea that idiosyncratic perceptions of available partners affect singles' readiness to initiate a committed relationship.

Perceiving Few Potential Partners May Decrease Commitment Readiness

Yet there are also reasons to expect that perceiving few potential partners may instead decrease commitment readiness. In particular, people are generally motivated to view themselves in a favorable manner (Leary, 2007; Shrauger, 1975), and acknowledging a lack of romantic interest from others can threaten self-worth (Brase & Guy, 2004). To protect their self-worth, people who perceive they have few romantic opportunities may dismiss or minimize such threatening information by deciding that they are not ready for a relationship rather than acknowledging their limited opportunities or risking potential rejection by pursuing someone who is uninterested in starting a relationship. In contrast, perceiving numerous partners should bolster self-worth and thus reduce the need to defensively protect the self by claiming to be unready for a relationship. Together, this suggests that people should be less ready to commit to a romantic relationship to the extent that they perceive they have few available partners.

Several theoretical perspectives and lines of research support the idea that perceiving few available partners decreases commitment readiness. For example, theory (Baumeister & Leary, 1995; Leary et al., 1995) and research on belonging and attraction suggest that perceiving few romantic opportunities (Brase & Guy, 2004) and little romantic interest from others (Bale, 2013; Penke & Denissen, 2008) tends to decrease self-esteem and thus can be highly distressing.

Further, those who believe that they have few, compared to numerous, romantic opportunities anticipate greater rejection by potential romantic partners (Cameron et al., 2010; Dandeneau & Baldwin, 2004) and tend to be more distressed by such rejection (Downey & Feldman, 1996; Ford & Collins, 2010), and this fear of rejection tends to motivate people to avoid forming relationships (Cameron et al., 2013; Ford & Collins, 2010). Further, theory (Alicke & Sedikides, 2009; Leary, 2007; Sherman & Cohen, 2006) and research (Kim & Harmon, 2014; Wombacher et al., 2019) on self-enhancement and rationalization suggest that it is common for people to dismiss or reinterpret threatening information (e.g., a lack of romantic interest from others) in a manner that allows them to maintain self-worth, suggesting the possibility that people with few romantic opportunities may attribute their lack of relationship to being unready for one (vs. unable to form one). Nevertheless, as previously noted, research has yet to examine whether perceiving little romantic interest motivates people to decide that they are not ready for a committed relationship.

Hypotheses and Overview of the Current Research

Given that readiness to enter into a committed relationship increases the likelihood of initiating and maintaining such a relationship (Agnew et al., 2019; Hadden et al., 2018), there is a critical need to identify factors that increase feelings of readiness. We predicted that perceptions of potential available partners would be associated with readiness to enter into a committed romantic relationship; however, we initially did not make predictions about the direction of this association because extant theory and research suggest competing predictions. We conducted four studies to address this research question. All manipulations, exclusions, measures, and preregistration information are reported in this manuscript and Appendix C.

Pilot Study

Method

Participants

Six-hundred and ninety-two undergraduate students were recruited from a Midwestern university. Given that the goal of the study was to address readiness to enter into a committed relationship, 331 participants were excluded because they indicated that they were currently involved in a romantic relationship, leaving a final sample of 361 participants (179 female, 178 male, 4 other; $M_{age} = 18.96$, $SD_{age} = 1.16$). A majority of participants ($n = 230$; 63.7%) identified as White, 20.5% as Asian, 5% as Hispanic, 5% as two or more ethnicities, 3.3% as African-American, and 2.5% as unknown or preferred not to answer.

Procedure

After providing informed consent, participants completed all measures using Qualtrics survey software. Participants were debriefed and given course credit after completing the study.

Measures

Commitment Readiness. Participants completed the Commitment Readiness Scale (Hadden et al., 2018) to assess their readiness to commit to a romantic relationship. This measure requires people to report the extent to which they agree with eight items (e.g., “I feel ready to be involved in a committed relationship”) using a 9-point Likert scale from 0 (*completely disagree*) to 8 (*completely agree*). Appropriate items were reverse coded and all items were summed ($M = 37.95$; $SD = 14.95$). Internal consistency was good ($\alpha = .94$).

Expected Available Partners. Participants completed an assessment of expected available romantic partners. Although our predictions address the implications of perceived current, rather than expected, potential partners, expected interpersonal experiences are often

shaped by current experiences (Baker et al., 2017) and such expectations influence interpersonal decisions (Baker et al., 2020). This measure requires people to report the extent to which they agree with seven items (e.g., “I will have limited options for committed partners in the future”) using a 9-point Likert scale from 0 (*completely disagree*) to 8 (*completely agree*). Appropriate items were reverse coded and all items were summed ($M = 32.04$; $SD = 11.06$). Higher scores indicate that participants expected to have more potential partners. Internal consistency was good ($\alpha = .88$).

Results and Discussion

Consistent with predictions, perceived availability of romantic partners was associated with commitment readiness. Specifically, consistent with the possibility that perceiving many potential partners decreases readiness to commit to a romantic relationship, perceived partners were negatively associated with commitment readiness, $r = -.34$, $p < .001$. Nevertheless, the findings from this study are limited due to the cross-sectional nature of the study, precluding conclusions about the causal nature of the association. The following experiments were designed to identify the possible causal implications of perceived available partners for commitment readiness.

Studies 1a and 1b

Study 1a was an experiment designed to provide causal evidence that perceptions of available romantic partners influence feelings of readiness to commit to a romantic relationship; Study 1b was a replication of Study 1a that included stronger manipulation checks and a larger sample. In both studies, participants read articles that led them to believe that they had either many or few romantic partners available to them. Next, participants reported their commitment readiness. Given that perceived available partners were negatively associated with commitment

readiness in the Pilot Study, we amended our initial prediction to specify that commitment readiness would be lower among participants who were led to believe that they had many available romantic partners compared to participants who were led to believe that they had few available romantic partners.

Method

Participants

An *a priori* power analysis based on the effect size from the Pilot Study ($d = .72$) indicated that 54 people were necessary to achieve power greater than .80. Nevertheless, given that it is difficult to predict the effect size of an experimental manipulation from cross-sectional self-reports (Bosco et al., 2015), we made an *a priori* decision to increase our sample size to 200 participants for Study 1a, yet only obtained 114 usable participants (63 male, 51 female; $M_{age} = 34.18$, $SD_{age} = 11.62$) due to recruiting difficulties detailed in Appendix C. Because of these recruiting difficulties, we conducted Study 1b using stricter recruitment criteria (i.e., greater approval rate for previous studies). An *a priori* power analysis that anticipated smaller effect sizes ($d = .30$) indicated that 352 people were necessary to achieve power greater than .80. Accordingly, we obtained 352 usable participants (184 female, 164 male, 2 transgender, 2 other; $M_{age} = 43.69$, $SD_{age} = 14.50$). A majority of participants (71.9% in Study 1a; 75.6% in Study 1b) identified as Caucasian, 9.6% in Study 1a and 13.6% in Study 1b as African-American, 7.9% in Study 1a and 2.8% in Study 1b as Hispanic, 4.4% in Study 1a and 6.0% in Study 1b as Asian, and 6.1% in Study 1a and 2.0% in Study 1b as a different ethnicity or two or more ethnicities. A majority of participants (91.2% in Study 1a; 84.4% in Study 1b) identified as heterosexual, 6.1% in Study 1a and 8.2% in Study 1b identified as bisexual, and 2.6% in Study 1a and 5.4% in Study 1b identified as gay or lesbian.

Procedure

Participants completed all procedures online using Qualtrics survey software. After providing informed consent, participants were randomly assigned to one of two conditions to complete a reading task. For this task, all participants were instructed to carefully read a filler article intended to disguise the true purpose of the study and a target article that was intended to manipulate participants' perception of available romantic partners. The target article read by participants in the *few partners condition* led participants to believe that there are not as many potential romantic partners available as they may think (e.g., "Recent research revealed that people have a much harder time finding romantic partners than they may think; thus, while people may believe there are plenty of fish in the sea, they tend to be wrong"). Participants in the *many partners condition* read a different article that led participants to believe that there are more potential romantic partners available than they may think (e.g., "Recent research revealed that people have a much easier time finding romantic partners than they may think; thus, while people may believe there are barely any fish in the sea, they tend to be wrong").

Given that the effectiveness of these manipulations had yet to be established, all participants were instructed to complete a second task intended to similarly influence perceptions of available partners to further reinforce the likelihood that such perceptions were manipulated. Prior research on cognitive ease (Schwarz et al., 1991; Tan & Agnew, 2016) has revealed that people are more confident in judgments when they can easily provide evidence for that judgment. Thus, given that it is likely difficult to think of numerous potential partners, participants in the *few partners condition* were asked to provide the initials of seven people with whom they could begin a romantic relationship to further their perception that there are actually few potential romantic partners available. In contrast, given that it is likely easy to think of few

potential partners, participants in the *many partners condition* were asked to provide the initials of one person with whom they could begin a romantic relationship to further their perception that they have potential romantic partners available. After completing both tasks, participants completed manipulation checks and reported their commitment readiness. Participants were debriefed and paid \$0.50 in Study 1a and \$1.00 in Study 1b for completing the study. All procedures were registered before data collection.

Measures

Commitment Readiness. Participants completed the same Commitment Readiness Scale described in the Pilot Study ($M = 29.62$; $SD = 17.78$; $\alpha = .94$).

Manipulation Check. In Study 1a, participants reported the ease of perceiving potential partners with a single item (“How easy or difficult was it to generate one person [seven people] who you would be interested in starting a relationship with?”), using a 7-point Likert scale (1 = *extremely difficult*, 7 = *extremely easy*). However, given that this manipulation check did not directly address participants’ perceived alternatives, participants in Study 1b responded to three items that assessed their perceived alternatives (e.g., “I currently have many attractive dating options available to me”), using a 7-point Likert scale (1 = *extremely difficult*, 7 = *extremely easy*). These three items were summed; internal consistency was good ($\alpha = .91$). Participants in Study 1b also responded to seven other alternative items to ensure that the manipulation did not affect other related constructs, such as the frequency of single individuals that live in close geographical proximity, the desire to find a partner, their perceived mate value, the size of their social network, and previous dating success.

Results and Discussion

Confirming the effectiveness of the manipulation in Study 1a, participants in the many

partners condition ($M = 5.02$; $SD = 1.85$) reported it easier to perceive potential partners compared to participants in the few partners condition ($M = 2.27$; $SD = 1.67$), $t(112) = -8.20$, $p < .001$, $d = -1.55$. Similarly, in Study 1b, participants in the many partners condition ($M = 12.31$; $SD = 4.91$) reported perceiving more alternatives than did participants in the few partners condition ($M = 10.31$; $SD = 5.48$), $t(350) = 3.62$, $p < .001$, $d = 0.39$. Participants in the two conditions did not respond differently to the alternative manipulation checks (t 's < 1.6 , p 's $> .119$) with one exception: participants in the many partners condition reported believing that others have more dating options than did participants in the few partners condition, $t(350) = 2.55$, $p = .011$, $d = 0.27$, which is likely the result of the target article discussing dating options generally and not addressing the specific participant's dating options. Controlling for this alternative manipulation check did not affect the primary results (see Appendix C for additional information about the alternative manipulation checks).

Providing causal evidence that perceiving many available romantic partners decreases commitment readiness, those in the many partners condition (Study 1a: $M = 26.32$; $SD = 15.57$; Study 1b: $M = 36.11$; $SD = 15.82$) reported that they were significantly less ready to enter into a committed relationship than did those in the few partners condition (Study 1a: $M = 33.71$; $SD = 19.58$; Study 1b: $M = 42.69$; $SD = 16.17$), Study 1a: $t(112) = -2.25$, $p = .027$, $d = -.42$, 95% CI [-13.91, -0.87], Study 1b: $t(350) = -3.86$, $p < .001$, $d = -.41$, 95% CI [-9.93, -3.22].

Study 2

The goal of Study 2 was to provide a more ecologically-valid test of our predictions by providing participants with feedback indicating that either many or few people were romantically interested in them. To this end, participants created a profile for a dating website and were provided false feedback on their profile that either enhanced or diminished their perception of

available romantic partners. Then, participants reported their commitment readiness. Based on the results from the previous studies, we predicted that commitment readiness would be lower among participants who ostensibly received interest from many, compared to few, people on their dating profiles.

Method

Participants

Participants were 108 undergraduate students who were recruited from a university in the southeastern United States. Participants were eligible to participate if they were single and were not currently using any online dating services because we did not want previous feedback from online dating services to override the feedback they would receive during the study. An *a priori* power analysis based on a pilot study that used a similar manipulation ($d = .61$) revealed that the power to detect an association between commitment readiness and perception of available partners would be greater than .80 with a sample of at least 88 participants. Given that participants were required to attend two separate sessions to complete the study, 20 participants were excluded for not attending both sessions. Twelve participants were excluded for not following directions or for correctly identifying the use of deception in the study (7 excluded from *many partners condition*, 5 excluded from *few partners condition*), leaving a total of 76 participants (55 female, 19 male, 1 trans male, 1 unidentified; $M_{age} = 19.34$ years, $SD_{age} = 2.13$ years). A sensitivity power analysis indicated that the present sample size would be able to detect a medium effect ($d = .65$) with power of .80. A majority of participants (51.3%) identified as African-American, 25% as Caucasian, 10.5% as Hispanic, 7.9% as Asian, and 5.2% as a different ethnicity or two or more ethnicities. A majority of participants (84.2%) identified as heterosexual, 10.5% identified as bisexual, and 5.3% identified as gay or lesbian.

Procedure

Participants were recruited via an online sign-up system and completed the study in a laboratory setting. After providing informed consent, participants completed a questionnaire assessing the extent to which they believe others are interested in dating them that would later be utilized to provide them with feedback about their dating profile. Then, participants were told that the goal of the study was to learn more about how single people evaluate dating profiles. To do so, participants were asked to create a dating profile that would be shared with and evaluated by students at an out-of-state university that was otherwise similar to the participants' university. Participants were told that a focus group at the collaborating university would view and evaluate their profile, and asked whether or not they would be romantically interested in the participant. Participants were then informed that they needed to return to the laboratory for a second session to receive feedback from the other university because it can be unsettling to be evaluated by others without knowing the results of those evaluations. Participants were given time to create their dating profile by uploading a picture of themselves and completing biographic information through a Qualtrics survey that was designed to resemble Match.com. After creating their dating profile, participants were informed that the first part of the study was over and reminded they should return one week later to receive feedback about their profile. Unbeknownst to participants, participants' profiles were not evaluated by anyone.

When participants returned for their feedback, they were reminded of the goals of the study, that they previously completed a dating profile, and that they had completed a questionnaire assessing others' interest in them. Participants were informed that people often inaccurately perceive the number of people that are actually interested in them. Participants were then randomly assigned to receive feedback ostensibly from the focus group that either fewer or

more people expressed interest in their profile than they expected. Those in the *few partners condition* were informed that few people in the focus group were interested in them (i.e., “It turns out that a lot fewer people are interested in you than what you originally thought!”). In contrast, participants in the *many partners condition* were informed that many people in the focus group were interested in them (i.e., “It turns out that a lot more people are interested in you than what you originally thought!”). After receiving the feedback, participants were asked to complete additional questionnaires ostensibly intended to help us further understand the process of how people create and evaluate dating profiles. Participants reported their commitment readiness and filler questionnaires intended to hide the true purpose of the study. Finally, participants were debriefed and granted class credit for their participation. All procedures were registered before data collection.

Measures

Commitment Readiness. Participants completed the same commitment readiness measure used in the previous studies ($M = 43.49$; $SD = 12.88$; $\alpha = .89$).

Manipulation Check. Participants responded to one item (“I find that potential romantic partners tend to like me”) that was included with six filler items intended to conceal the purpose of the manipulation check, using a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*).

Results and Discussion

To examine the effectiveness of the manipulation, an independent samples *t*-test revealed that participants in the many partners condition ($M = 3.81$; $SD = 1.35$) did not differ from those in the few partners condition ($M = 3.90$; $SD = 1.50$) regarding their perceptions of being liked by potential romantic partners, $t(74) = -0.29$, $p = .774$, $d = -.06$. However, upon retrospectively reviewing the single item used for the manipulation check, it is likely that the item led

participants to reflect more on previous experiences rather than the current information they were given about potential romantic partners due to the item emphasizing a pattern of experiences (i.e., “tend to”). Because of this, the item may not have assessed their beliefs about current interest from others and thus may not be a true reflection of the effectiveness of the manipulation.

Nevertheless, consistent with our predictions, those in the many partners condition reported that they were significantly less ready to enter into a committed relationship ($n = 36$; $M = 37.86$; $SD = 13.14$) than did those in the few partners condition ($n = 40$; $M = 48.55$; $SD = 10.42$), $t(67) = -3.90$, $p < .001$, $d = -.90$, 95% CI [-16.16, -5.22].

General Discussion

Despite the importance of commitment readiness for initiating (Hadden et al., 2018) and subsequently maintaining (Agnew et al., 2019) close relationships, research has only begun to identify the factors that motivate feeling ready for a committed romantic relationship. Existing theory and research suggest that the extent to which people perceive they have numerous available partners should play a role in determining commitment readiness; however, they can be used to make competing predictions about whether such perceptions should increase or decrease commitment readiness. In this brief Case Report, four studies provided consistent evidence that perceiving many potential romantic partners is associated with decreased commitment readiness. The Pilot Study provided evidence that participants’ perceived available partners were associated with their commitment readiness and indicated the direction of this association—participants were less ready to commit to a romantic relationship to the extent that they perceived having many available partners. Studies 1a, 1b, and 2 tested the causal relationship between perception of available partners and commitment readiness by having participants read articles (Studies 1a

and 1b) or receive false feedback (Study 2) that increased or decreased their perceived available partners and subsequently reported their commitment readiness. Participants who were led to believe that they had many available romantic partners reported lower commitment readiness compared to participants who were led to believe that they had few available romantic partners.

Implications and Future Directions

These findings have important theoretical and practical implications and suggest several directions for future research. First, these studies join a growing body of literature that highlights the importance of commitment readiness for pursuing, forming, and maintaining romantic relationships (Agnew et al., 2019; Hadden et al., 2018; Riela et al., 2010). For example, commitment readiness has been associated with increased pursuit of romantic relationships (Hadden et al., 2018), falling in love with a romantic partner (Aron et al., 1989; Riela et al., 2010), and enacting more relationship maintenance behaviors once involved in a relationship (Agnew et al., 2019). Nevertheless, despite the importance of commitment readiness for subsequent relationship initiation and maintenance, the current studies are the first to identify factors that determine this important motive.

Further, recent advances in technology and the rise in online dating services (Smith & Duggan, 2013) highlight the practical implications of these findings. For instance, past research (Finkel et al., 2012; Taubert et al., 2016) has revealed that the ability to peruse hundreds of dating profiles tends to increase perceptions of available potential partners. Results from the current studies suggest that this immediate online access to numerous potential partners may consequently undermine users' willingness to feel ready to commit to any one person. Indeed, access to so many potential partners, that are otherwise unlikely to be available in-person, can be overwhelming and reduce the likelihood of selecting any given partner (Fisman et al., 2006;

Lenton & Francesconi, 2011). Furthermore, given that a vast majority of US adolescents use the Internet (95%; Lenhart et al., 2011) and approximately 32% of US adults between the ages of 18-34 use online dating services (Smith & Duggan, 2013), the implications of online dating—and thus having many potential partners available—on subsequent commitment readiness and relationship initiation are likely most salient for adolescents and young adults. Consistent with these ideas, current young adults are more likely to delay entering into committed relationships compared to previous generations (Cherlin, 2010; Copen et al., 2012). Thus, while the goal of online dating services may be to facilitate relationship initiation, they may actually accomplish the opposite by providing people with too many potential partners and thus decreasing the motivation to commit to a romantic relationship.

Study Strengths and Weaknesses

Several aspects of the present studies increase our confidence in the current results. First, the effect between perception of available partners and commitment readiness was observed in four different samples that were diverse in ethnicity, age, sexual orientation, and gender, increasing our confidence in the external validity of our findings. Second, Studies 1 and 2 experimentally manipulated perceptions of available partners using different manipulations. Finally, Study 2 provided a more ecologically-valid test of our predictions by providing feedback via a method frequently utilized by singles—online dating forums.

Nevertheless, several limitations of these studies limit the interpretation of these results until they can be replicated and extended. First, although the present studies provided evidence that perceptions of available partners affect commitment readiness, none of the studies addressed potential mechanisms that might explain this effect, nor identified factors that could potentially strengthen or weaken the observed relationship between perceived available partners and

commitment readiness. For example, recent research (Spielmann et al., 2019) suggests that people who fear being single are highly motivated to enter into a relationship, and thus might feel ready to enter into a committed relationship even if they perceive numerous available partners. Further, although our confidence in the findings is enhanced due to the observed association between perception of available partners and commitment readiness across four different samples, Study 2 included a sub-optimal manipulation check and relied on a relatively small sample.

Conclusion

Together, the current results revealed that when many available romantic partners are perceived, people experience lower commitment readiness compared to when few available romantic partners are perceived. These results add to a growing literature on the construct of commitment readiness, and more broadly on romantic relationship initiation, and furthers understanding about why people choose to initiate a romantic relationship or remain single.

Open Practices

All procedures were registered before data collection for Studies 1a (osf.io/7935g/?view_only=7030f84861974a228075485497a44cb4), 1b (https://osf.io/e3x9h/?view_only=9b64ab25da194d04beacf09d9443676a) and 2 (osf.io/xbn6t/?view_only=cd8d55530a454e4d9275ea601b915921). Requests for data and materials can be sent to the lead author at albrady3@uncg.edu.

CHAPTER V: INTEGRATED DISCUSSION

Over the course of a romantic relationship, people will inevitably face sexual challenges that may present a threat to their individual and relational well-being if left unresolved. To this end, it is critical to understand how people can successfully navigate prevalent sexual challenges. The present program of research aimed to address this important topic across three different projects. In the first project, I described three studies that employed cross-sectional, longitudinal, and experimental methods to examine whether experiencing and receiving gratitude increased the motivation to fulfill a partner's sexual needs. The results of these studies revealed how partners can increase their motivation to fulfill one another's sexual needs, and thus furthers understanding of how couples can successfully navigate challenges of sexual incompatibility to maintain sexual and relationship satisfaction over time. In the second project, I described two studies (one experimental, one longitudinal) that examined whether people in romantic relationships are more likely to engage in infidelity as a result of initially paying attention to attractive alternatives, and whether the implications of attending to attractive alternatives depend on self-regulatory ability. The results of these studies aid in our understanding of when people are at greater risk of engaging in infidelity, as well as how romantic partners can successfully navigate the temptation of attractive alternatives to avoid the threat of infidelity. In the third project, I described four studies (one correlational, three experimental) that examined whether perceiving many or few available romantic partners decreased commitment readiness among singles. The results of these studies aid in our understanding of when people are less likely to be ready to commit to a romantic relationship, as well as highlights an important factor that people should consider when initiating a relationship to more successfully navigate the challenge of selecting a mate at the optimal timing for subsequent individual and relational well-being.

Together, the current program of research adds to our understanding of how people can successfully navigate these three common sexual challenges, and ultimately maintain individual and relational well-being over time.

Implications

This program of research has several important implications. First, the current projects integrate literature from close relationships and sexuality research to highlight the prevalence of sexual challenges that couples likely face throughout the duration of a romantic relationship, as well as the detrimental outcomes that may occur when such challenges are left unresolved. Given the importance of satisfying sexual relationships for individual and relational well-being, it is critical to understand how people can successfully navigate sexual challenges that often occur over the course of a relationship. To this end, the current program of research contributes to this literature by identifying relatively simple solutions that people can implement into their daily lives to help successfully navigate common sexual challenges, such as expressing gratitude to a romantic partner to reduce issues of sexual incompatibility or avoiding situations that impair self-regulatory ability to limit the threat of infidelity. This is not to say that the findings should be interpreted as cures to people's sexual challenges, rather the current results may serve as tools for people to draw on to help reduce the severity of such challenges.

When sexual challenges are complex, couples may benefit from pursuing additional guidance from relationship counselors. To this end, the current findings can also be applied to therapeutic interventions intended to improve sexual functioning and well-being. As previously discussed, practitioners may benefit from incorporating gratitude into therapeutic techniques for couples facing incompatible sexual desires. Indeed, while practitioners have already begun to incorporate gratitude into several therapeutic techniques to improve relationship functioning

(Kerr et al., 2015; Seligman et al., 2005), they may benefit from further exploring the benefits of gratitude for increasing partners' SCS. Similarly, practitioners may help people avoid infidelity by identifying and avoiding situations that tax self-regulatory ability (e.g., drinking at a bar with an attractive friend) or having clients engage in exercises to improve dispositional self-regulatory ability (e.g., committing to a consistent daily routine). Past research suggests that engaging in such practices are often helpful in improving people's self-regulatory ability and thus avoiding self-regulatory failures (Baumeister et al., 2006; Fishbach & Hofmann, 2015). Finally, practitioners may benefit from considering the role of people's perceived available romantic partners when clients are struggling to commit to a romantic relationship. For example, given the drastic rise in available romantic partners in recent years due to the increased use of social networking and dating sites (Pew Research Center, 2021a; Pew Research Center, 2021b), practitioners may recommend limiting the use of such sites when clients are considering whether or not they should initiate a committed relationship. By incorporating the current findings into their repertoire of resources, practitioners may further help people navigate these prevalent sexual challenges.

Strengths and Limitations

Several limitations of the current program of research should be noted. First, although the sexual challenges addressed in the present projects were conceptualized as distinct challenges that are likely to occur at specific times throughout the development of a romantic relationship, it is expected that these sexual challenges may interact with one another over time. For example, past research has revealed that a person's readiness to initiate a romantic relationship is associated with subsequent relationship maintenance behaviors once the relationship is established (Agnew et al., 2019). Given that romantic partners often maintain their relationships

by avoiding attractive alternatives, a person's readiness to initiate a romantic relationship may have implications for subsequent pursuit or avoidance of infidelity. Similarly, if couples are experiencing challenges related to sexual incompatibility, and thus are experiencing low sexual satisfaction, they may be at greater risk of noticing attractive alternatives. Indeed, one of the most common predictors of engaging in infidelity is sexual incompatibility (Mark et al., 2011). Thus, although I expect that these sexual challenges do not occur in isolation, addressing how such sexual challenges relate to and interact with one another was beyond the scope of the current program of research.

Second, although the current program of research included diverse samples across studies in regard to ethnicity, age, gender, sexual orientation, and relationship type, none of the studies considered how sexual challenges may vary due to these diverse factors. For example, people in monogamous relationships may face distinct sexual challenges (e.g., infidelity) compared to people in consensually non-monogamous relationships (e.g., increased risk of contracting STDs). Similarly, couples may be more likely to experience distinct types of sexual incompatibility—such as incompatibility in ideal sexual frequency versus incompatibility in sexual fantasies—based on these diverse factors. For example, given the abundance of past research that suggests men have higher sexual desire compared to women (for review, Baumeister et al., 2001), opposite-sex couples may experience more sexual challenges due to greater incompatibility in ideal sexual frequency compared to same-sex couples. To this end, future research may benefit by considering the specific sexual challenges that couples are especially likely to face due to these diverse factors, as well as how the solutions to successfully navigate such challenges may vary depending on these diverse factors.

Third, although the current program of research highlighted the importance of successfully navigating sexual challenges for subsequent individual and relational well-being, the projects included in this program of research did not address long-term individual and relational well-being. Rather, the purpose of the present projects was to explore how couples can successfully navigate sexual challenges that they are likely to encounter over the course of a relationship. Although multiple studies within the current program of research addressed how certain processes affect outcomes over time (i.e., Study 1 in project 1 presented in Chapter II, Study 2 in project 2 presented in Chapter III), none of the studies addressed the downstream implications for well-being. Given that past research has consistently revealed the long-term implications of these sexual challenges on subsequent individual and relational well-being (Basson & Schultz, 2007; Brotto et al., 2010; Davies et al., 1999; Flynn et al., 2016; McCall-Hosenfeld et al., 2008; Rosen et al., 2019; Rusbult, 1980, 1983; Rusbult et al., 1998; Schmiedeberg et al., 2017; Willoughby et al., 2014), replicating these findings in the current projects was beyond the scope of this program of research. Nevertheless, addressing the long-term implications of these sexual challenges would have strengthened the current projects and contributed to an important area of research.

Finally, although the studies included in this program of research used diverse methodologies—including correlational, longitudinal, and experimental designs—a majority of the studies relied on self-report assessments and thus creates concerns regarding the validity of the present findings. Specifically, given that many of the topics addressed in this program of research were about sexual habits and experiences, and given that people are especially motivated to present themselves favorably when completing self-report assessments related to sensitive topics (i.e., sexual habits; Charles & Dattalo, 2018; Krumpal, 2013), there is a strong

possibility that participants' reports were biased. For example, fewer than 20% of participants included in the second project reported engaging in infidelity, yet estimates suggest that 20 to 30% of relationships are affected by infidelity (Jones & Weiser, 2014). Although confidence in the current findings is increased due to consistent results emerging across studies, future research may enhance the validity of the findings when studying sexual topics by limiting social desirability concerns. For instance, recent research suggests that including forgiving language in self-report assessments can help reduce biased responses for sensitive topics (Charles & Dattalo, 2018).

Despite these limitations, several aspects of the present projects strengthen this program of research. First, the projects in this program of research add to newly emerging concepts in the close relationships literature. For example, feelings of readiness to begin a committed relationship is a prevalent concept within society—people often describe reasons for why they are or are not ready to be involved in a romantic relationship and the concept of commitment readiness is frequently depicted in social media, blogs, TV shows, and movies (Garapick, 2012; Gunther, 2016; Sama, 2014)—yet commitment readiness has only recently been addressed in close relationships literature (Agnew et al., 2019; Hadden et al., 2018). Similarly, although many people may recognize the benefits of gratitude in maintaining their relationships, the current research represents the first to extend the benefits of gratitude to the sexual domain. Finally, although people often describe that they prefer their partners to not look at attractive alternatives because it is believed that avoiding desirable alternatives reduces the likelihood of infidelity (Maner et al., 2009; Miller, 1997), limited research has addressed whether this perspective is accurate (McNulty et al., 2018). Thus, the current projects are capturing phenomenon that are

highly relevant to people's lived experiences and have important implications for subsequent well-being, but have received little attention in past research.

Second, the current program of research recognizes the sexual challenges that may be prevalent across the entire course of a romantic relationship—from relationship initiation to highly interdependent relationships—rather than just addressing sexual challenges that occur within established relationships. Specifically, although an abundance of research has addressed sexual challenges that occur within established relationships, limited research has considered the sexual challenges that people face during the process of relationship initiation. Nevertheless, this limited research has revealed that the decision to begin a relationship or remain single has important implications for subsequent relationship maintenance and stability (Agnew et al., 2019). To this end, the current program of research highlights the importance of considering sexual challenges across the development of romantic relationships, including relationship initiation.

Finally, although a majority of the studies included in this program of research relied on self-report assessments, the results remain highly robust given that the findings were consistent across studies that used diverse methodologies (including correlational, longitudinal, and experimental designs). Furthermore, the effect between variables within each project was observed using experiments, allowing for causal conclusions to be drawn regarding the relationships of interest. Similarly, the effect between variables within each project was observed in multiple samples that were diverse in ethnicity, age, sexual orientation, gender, and relationship type, and thus increases the external validity of the present findings. Given that the goal of this program of research was to identify ways in which people can successfully navigate

common sexual challenges, the strengths of these studies increase confidence in the conclusions and generalizability of the findings.

Future Directions

The present findings suggest several directions for future research. As previously suggested, although the sexual challenges addressed in the present projects were conceptualized as distinct challenges that are likely to occur at specific times throughout the development of a romantic relationship, it is expected that these sexual challenges relate to and interact with one another over time. Thus, future research may benefit from addressing this possibility. For example, previous research suggests that certain sexual challenges are likely to co-occur, such as couples facing challenges associated with low sexual desire and low sexual satisfaction (Mark, 2012; Sprecher, 2002). Similarly, certain sexual challenges (e.g., low sexual satisfaction) have also been found to predict subsequent sexual challenges (e.g., infidelity; Mark et al., 2011). To this end, future research may benefit from considering the extent to which the sexual challenges in the current program of research co-occur (e.g., low sexual communal strength and high attention to attractive alternatives), as well as whether certain sexual challenges (e.g., low commitment readiness) predict subsequent sexual challenges (e.g., high attention to attractive alternatives). Furthermore, future research may benefit from addressing whether certain strategies for successfully navigating specific sexual challenges (e.g., experiencing gratitude to increase sexual communal strength) also have beneficial effects on reducing other related sexual challenges (e.g., high attention to attractive alternatives).

Relatedly, future research may benefit from addressing how sexual challenges evolve over the entire trajectory of a romantic relationship. Indeed, past research has consistently revealed that certain sexual challenges are likely to occur as interdependence in the relationship

increases (e.g., decreased sexual desire, sexual satisfaction, and sexual frequency; Sims & Meana, 2010; Sprecher & Regan, 1998). However, limited research has considered sexual challenges that occur outside of established relationships, and how such challenges inform subsequent relationship initiation and relationship functioning when a relationship is established. To this end, close relationship researchers would benefit from more frequently considering sexual challenges beyond the challenges that are prevalent in established or highly interdependent relationships. Similarly, future research would benefit from conducting longitudinal research to understand how sexual challenges during one phase of a relationship (e.g., relationship initiation) may have downstream consequences for the appearance of other sexual challenges during later phases of a relationship.

Finally, future research may benefit from considering these sexual challenges in the context of recent societal changes. For example, given the drastic rise in internet accessibility and social media use over recent decades (Pew Research Center, 2021a; Pew Research Center, 2021b), the number of available attractive alternatives that people in romantic relationships currently have has increased at a rapid rate. To this end, the increase in availability and accessibility of online attractive alternatives may have important implications when considering self-regulatory processes and infidelity. Specifically, people often perceive online alternatives as less threatening than in-person alternatives due to the inability to engage in physical contact with online alternatives (Sahni & Swasti, 2018), and thus people are arguably less concerned about the threat of engaging in infidelity with online alternatives compared to in-person alternatives. Furthermore, self-regulatory ability may become more quickly exhausted when evaluating online alternatives due to the high quantity of online alternatives, and thus people may be less able to protect against the threat of infidelity when interacting with online alternatives compared to in-

person alternatives. Together, this suggests that people may be at a greater risk of pursuing infidelity because they 1) do not perceive online alternatives as threatening and 2) are more likely to experience impaired self-regulatory ability due to the high quantity of online alternatives. Thus, future research would benefit from assessing the extent to which using the Internet and social networking sites may increase people's perception of available attractive alternatives, decrease their self-regulatory ability, and thus increase the threat of infidelity.

Similarly, societal trends suggest an increased involvement in non-traditional relationships in recent years, such as consensually non-monogamous (CNM) relationships. Specifically, more than one in five people report engaging in CNM relationships at some point in their lifetime (Hauptert et al., 2017), and research suggests that engaging in CNM relationships may provide a means for couples to maintain their romantic relationships in the face of sexual challenges. For example, more couples may be opting to open up their relationships, rather than ending their relationships, when faced with threatening attractive alternatives due to the recent increase in acceptance of CNM (Stephens & Emmers-Sommer, 2020). Given that infidelity tends to harm relationship satisfaction and stability (Amato & Previti, 2003; Betzig, 1989; Charny & Parnass, 1995), CNM may provide an option for people who are tempted by attractive alternatives to remain committed to their primary relationship partner. Thus, future research may benefit from exploring CNM as a possible solution for couples facing sexual challenges related to sexual incompatibility or infidelity.

Conclusion

As can be seen in the current program of research, the sexual challenges that people often experience over the course of a romantic relationship are vast and distinct. Nevertheless, these challenges all present a threat to individual and relational well-being when left unresolved. To

this end, it is critical to understand how people can successfully navigate prevalent sexual challenges. By identifying factors that resolve sexual incompatibility, revealing how people can avoid infidelity, and understanding factors that affect mate selection, the current program of research adds to our understanding of how people can successfully navigate these three common sexual challenges. Ultimately, these findings contribute to literature on how people can maintain sexual and relationship satisfaction over time, and thus promote individual and relational well-being.

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APPENDIX A: SUPPLEMENTAL MATERIALS FOR CHAPTER II

Pilot Study

Method

Participants

Participants were required to be in a romantic relationship for at least three months ($M = 24.2$ months, $SD = 38.54$ months); 87 (47%) participants were married, 69 (37.3%) were dating their partner exclusively, 16 (8.6%) were engaged, and 13 (7%) were dating their partner casually. The majority of participants ($n = 166$; 89.7%) identified as heterosexual, 10 (5.4%) identified as bisexual, 8 (4.3%) identified as lesbian or gay, and 1 (0.5%) identified as other.

Measures

Communal Strength. Participants completed the Communal Strength measure (CS; Mills et al., 2004). This measure requires individuals to respond to 10 questions that assess their communal strength within the romantic relationship (e.g., “How happy do you feel when doing something that helps your partner?”) using an 11-point scale (1 = *not at all*, 11 = *extremely*). Appropriate items were reverse coded and all items were summed. Internal consistency was acceptable ($\alpha = .84$).

Results

Descriptive statistics and bivariate correlations appear in Table 5. Men and women did not differ in their reports of SCS, $t(181) = 0.12, p = .903, d = .02$, experiences of gratitude toward their partner, $t(181) = -0.46, p = .643, d = .07$, or expressions of gratitude received from their partner, $t(181) = 0.34, p = .739, d = .05$.

Study 1

Method

Participants

To ensure the couples recruited were in a relationship, three screening questions were independently asked to both partners during telephone interviews. Specifically, participants were asked their partner's date of birth, the length of their relationship, and their mother-in-law's name. No participants were excluded from analyses.

Measures

Communal Strength. Participants completed the Communal Strength measure (Mills et al., 2004) described in the Pilot Study. Internal consistency was acceptable ($\alpha = .73$).

Relationship Satisfaction. Participants completed the relationship satisfaction subscale of the Perceived Relationship Quality Component Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000). This subscale requires individuals to respond to three questions that assess their satisfaction within the romantic relationship (e.g., "How satisfied are you with your relationship?") using a 7-point scale (1 = *not at all*, 7 = *extremely*). Items were summed and internal consistency was acceptable ($\alpha = .98$).

Commitment. Participants completed the commitment subscale of the Perceived Relationship Quality Component Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000). This subscale requires individuals to respond to three questions that assess their commitment within the romantic relationship (e.g., "How committed are you to your relationship?") using a 7-point scale (1 = *not at all*, 7 = *extremely*). Items were summed and internal consistency was acceptable ($\alpha = .98$).

Intimacy. Participants completed the intimacy subscale of the Perceived Relationship Quality Component Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000). This subscale requires individuals to respond to three questions that assess their intimacy within the romantic relationship (e.g., “How intimate is your relationship?”) using a 7-point scale (1 = *not at all*, 7 = *extremely*). Items were summed and internal consistency was acceptable ($\alpha = .94$).

Sexual Desire. Participants completed the 25-item Hurlbert Index of Sexual Desire (Apt & Hurlbert, 1992). Items were rated on a 7-point scale (1 = *never*, 7 = *all the time*) and included such items as “My desire for sex with my partner is strong” ($M = 5.27$, $SD = 1.09$). Items were averaged and internal consistency was excellent ($\alpha = .94$).

Results

Descriptive statistics and bivariate correlations appear in Table 6. At baseline, men reported higher levels of SCS, $t(234) = -2.28$, $p = .023$, $d = .30$, and they reported receiving greater expressions of gratitude from their partners, $t(206) = -2.77$, $p = .006$, $d = .36$, than did women. Women reported experiencing more gratitude than did men, $t(234) = 2.68$, $p = .008$, $d = .35$.

Gratitude and Concurrent SCS

Before examining whether gratitude predicted changes in SCS, we first examined whether gratitude at each time point was associated with SCS at the same time point by estimating two-level cross models, in which persons are nested within dyads, and person and days are crossed given that both partners reports were provided on the same days (Kenny, Kashy, & Cook, 2006). In each of these models, SCS was regressed onto one of the four gratitude scores (i.e., own reports of experienced gratitude, own reports of received gratitude, partner’s reports of experienced gratitude, partner’s reports of received gratitude). All predictors were group (i.e.,

within-person) centered; thus, results represent changes in SCS based on whether participants reported more or less gratitude than their individual average.

Results indicated that participants' reports of their own SCS at each time point were positively associated with their concurrent reports of their experienced gratitude, $B = 0.39$, $SE = 0.07$, $t(283) = 5.27$, $p < .001$, $r = .30$, their concurrent reports of their received gratitude, $B = 0.20$, $SE = 0.07$, $t(283) = 2.80$, $p = .005$, $r = .16$, their partner's concurrent reports of those partner's experienced gratitude, $B = 0.28$, $SE = 0.09$, $t(267) = 3.06$, $p = .002$, $r = .18$, and their partner's concurrent reports of those partner's received gratitude, $B = 0.16$, $SE = 0.07$, $t(267) = 2.22$, $p = .027$, $r = .13$.

Supplemental analyses that employed an Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006) approach revealed that participants' SCS remained positively associated with their concurrent reports of their experienced gratitude, $B = 0.32$, $SE = 0.07$, $t(265) = 4.84$, $p < .001$, $r = .28$, and with their concurrent reports of their received gratitude, $B = 0.16$, $SE = 0.07$, $t(265) = 2.39$, $p = .018$, $r = .15$, controlling for their partners' reports of gratitude.

Partner Gratitude and Changes in SCS

We next examined whether participants' partner's reports of their experienced and received gratitude predicted changes in each participants' SCS. Results indicated that changes in participants' SCS were positively associated with their partner's reports of those partner's experienced gratitude, $B = 0.26$, $SE = 0.10$, $t(115) = 2.70$, $p = .008$, $r = .24$, yet were not associated with their partner's reports of those partner's received gratitude, $B = 0.20$, $SE = 0.10$, $t(115) = 1.96$, $p = .052$, $r = .18$.

Next, we examined whether both partner's reports of experienced and received gratitude were associated with changes in SCS from each time point to the next time point when SCS was simultaneously regressed onto both. To do so, we regressed SCS at each time of assessment onto both partner gratitude variables (i.e., partner experienced gratitude and partner received gratitude) at the previous time of assessment. Results indicated that changes in participants' own SCS were not associated with their partner's reports of those partner's experienced gratitude, $B = 0.17$, $SE = 0.10$, $t(113) = 1.79$, $p = .076$, $r = .17$, nor with their partner's reports of those partner's received gratitude, $B = 0.13$, $SE = 0.12$, $t(113) = 1.09$, $p = .279$, $r = .10$, when SCS was simultaneously regressed onto both.

Further, we examined whether the effects of partners' reports of gratitude were independent from other similar variables. Results are presented in Table 7 and revealed a similar pattern of results after controlling for other similar variables.

Does CS Mediate the Association Between Gratitude and SCS?

To further examine the temporal relationship between gratitude, SCS, and CS, we conducted several mediation analyses in which indirect effects were estimated using RMediation (Tofighi & MacKinnon, 2011). First, we assessed if changes in CS mediated the association between experienced gratitude and changes in SCS. Results revealed that own experiences of gratitude significantly predicted changes in CS, $B = 0.19$, $SE = 0.08$, $t(122) = 2.34$, $p = .021$, $r = .21$, but CS did not significantly predict changes in SCS, $B = 0.11$, $SE = 0.13$, $t(113) = 0.83$, $p = .409$, $r = .08$, controlling for own experienced gratitude. The indirect effect revealed that CS did not mediate the association between experienced gratitude and SCS ($b = 0.02$, $SE = 0.03$, 95% CI = -0.03, 0.09). Next, we assessed if changes in CS mediated the association between received gratitude and changes in SCS. Results revealed that own received gratitude did not significantly

predict changes in CS, $B = 0.08$, $SE = 0.08$, $t(122) = 1.04$, $p = .302$, $r = .09$, and CS did not significantly predict changes in SCS, $B = 0.03$, $SE = 0.14$, $t(113) = 0.22$, $p = .830$, $r = .02$, controlling for own received gratitude. The indirect effect revealed that CS did not mediate the association between received gratitude and SCS ($b = 0.002$, $SE = 0.02$, 95% CI = -0.03, 0.04).

Does Experiencing Gratitude Mediate the Association Between Receiving Gratitude and SCS?

Next, to examine whether receiving gratitude promotes own experiences of gratitude, we conducted a similar mediation analysis in which indirect effects were estimated using RMediation (Tofighi & MacKinnon, 2011). Specifically, we assessed if changes in experienced gratitude mediated the association between receiving gratitude and changes in SCS. Results revealed that received gratitude did not significantly predict changes in experienced gratitude, $B = -0.01$, $SE = 0.10$, $t(122) = -0.14$, $p = .8931$, $r = -.01$, and experienced gratitude did not significantly predict changes in SCS, $B = 0.17$, $SE = 0.13$, $t(113) = 1.34$, $p = .182$, $r = .13$, controlling for own received gratitude. The indirect effect revealed that experiencing gratitude did not mediate the association between receiving gratitude and SCS ($b = 0.01$, $SE = 0.02$, 95% CI = -0.05, 0.05)

Is the Relationship Between Gratitude and SCS Bidirectional?

Finally, we examined whether SCS was associated with changes in gratitude from each time point to the next time point. In these models, one of the four gratitude variables was regressed onto SCS. Results indicated that participants' SCS did not predict changes in participants' own reports of experienced gratitude, $B = 0.01$, $SE = 0.08$, $t(120) = 0.15$, $p = .879$, $r = .01$, participants' own reports of received gratitude, $B = -0.03$, $SE = 0.11$, $t(120) = -0.31$, $p = .761$, $r = -.03$, partner's reports of those partner's experienced gratitude, $B = -0.06$, $SE = 0.08$, $t(120) = -0.78$, $p = .435$, $r = -.07$, or partner's reports of those partner's received gratitude, $B =$

0.07, $SE = 0.10$, $t(120) = 0.70$, $p = .483$, $r = .06$, suggesting that the association between gratitude and SCS is not bidirectional.

Study 2

Method

Participants

One-hundred nineteen (58.6%) participants were married, 67 (33%) were dating exclusively, 13 (6.4%) were engaged, and 4 (2%) were dating casually. Further, 181 (89.2%) participants identified as heterosexual, 16 (7.9%) identified as bisexual, 3 (1.5%) identified as gay or lesbian, and 3 (1.5%) identified as other.

Measures

Communal Strength. Participants completed the Communal Strength measure (Mills et al., 2004) described in the Pilot Study. Internal consistency was acceptable ($\alpha = .87$).

Relationship Satisfaction. Participants completed the relationship satisfaction subscale of the Perceived Relationship Quality Component Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000) described in Study 1. Internal consistency was acceptable ($\alpha = .97$).

Commitment. Participants completed the commitment subscale of the Perceived Relationship Quality Component Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000) described in Study 1. Internal consistency was acceptable ($\alpha = .96$).

Intimacy. Participants completed the intimacy subscale of the Perceived Relationship Quality Component Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000) described in Study 1. Internal consistency was acceptable ($\alpha = .91$).

Results

Descriptive statistics and bivariate correlations appear in Table 8. Men and women did

not differ in their reports of SCS, $t(161) = 0.84, p = .402, d = .12$.

Does CS Mediate the Association Between Gratitude and SCS?

To further examine the temporal relationship between gratitude, SCS, and CS, we conducted several mediation analyses in which indirect effects were estimated using the PROCESS macro Version 2.13 (Hayes, 2013), using a bootstrap estimation approach with 1,000 samples. First, we assessed if CS mediated the association between the experiencing gratitude condition and SCS. A dummy-coded variable for condition ($0 = \textit{control conditions}$, $1 = \textit{experiencing gratitude condition}$) was specified as the independent variable, CS as the mediator, and SCS as the dependent variable. Results revealed that participants in the experiencing gratitude condition reported greater CS than did those in the control conditions, $B = 0.82, SE = 0.29, t(158) = 2.86, p = .005, r = .22$, and CS was positively associated with SCS, $B = 0.74, SE = 0.09, t(158) = 8.70, p < .001, r = .62$, controlling for the experiencing gratitude condition. The indirect effect revealed that CS significantly mediated the association between experiencing gratitude and SCS ($b = 0.61, SE = 0.21, 90\% \text{ CI} = 0.27, 0.96, p = .007$).

Next, we assessed if CS mediated the association between the receiving gratitude condition and SCS. A dummy-coded variable for condition ($0 = \textit{control conditions}$, $1 = \textit{receiving gratitude condition}$) was specified as the independent variable, CS as the mediator, and SCS as the dependent variable. Results revealed that participants in the receiving gratitude condition reported greater CS than did those in the control conditions, $B = 0.97, SE = 0.32, t(143) = 3.05, p = .003, r = .25$, and CS was positively associated with SCS, $B = 0.79, SE = 0.08, t(158) = 9.39, p < .001, r = .69$, controlling for the receiving gratitude condition. The indirect effect revealed that CS significantly mediated the association between receiving gratitude and SCS ($b = 0.76, SE = 0.23, 90\% \text{ CI} = 0.37, 1.13, p = .004$).

Do the Manipulation Checks Mediate the Association Between Gratitude and SCS?

We conducted several mediation analyses in which indirect effects were estimated using the PROCESS macro Version 2.13 (Hayes, 2013), using a bootstrap estimation approach with 1,000 samples. First, we assessed if participants' reports of experiencing gratitude mediated the association between the experiencing gratitude condition and SCS. The model specified a dummy-coded variable for condition ($0 = \textit{control conditions}$, $1 = \textit{experiencing gratitude condition}$) as the independent variable, the experienced gratitude manipulation check as the mediator, and SCS as the dependent variable. Results revealed that participants in the experiencing gratitude condition reported feeling more gratitude for their partners than those in the control conditions, $B = 2.12$, $SE = 0.35$, $t(158) = 6.03$, $p < .001$, $r = .44$, and such experienced gratitude was positively associated with SCS, $B = 0.68$, $SE = 0.07$, $t(158) = 10.39$, $p < .001$, $r = .68$, controlling for the experiencing gratitude condition. The indirect effect revealed that the experienced gratitude manipulation check significantly mediated the association between the experiencing gratitude condition and SCS ($b = 1.44$, $SE = 0.25$, 90% CI = 1.06, 1.89, $p < .001$).

Next, we assessed if participants' reports of experiencing gratitude mediated the association between the receiving gratitude condition and SCS. The model specified a dummy-coded variable for condition ($0 = \textit{control conditions}$, $1 = \textit{receiving gratitude condition}$) as the independent variable, the experienced gratitude manipulation check as the mediator, and SCS as the dependent variable. Results revealed that participants in the receiving gratitude condition reported feeling more gratitude for their partners than those in the control conditions, $B = 0.92$, $SE = 0.46$, $t(143) = 2.01$, $p = .046$, $r = .17$, and such experienced gratitude was positively associated with SCS, $B = 0.38$, $SE = 0.07$, $t(143) = 5.65$, $p < .001$, $r = .56$, controlling for the receiving gratitude condition. The indirect effect revealed that the experienced gratitude

manipulation check did not mediate the association between receiving gratitude and SCS ($b = 0.35$, $SE = 0.21$, 90% CI = 0.06, 0.74, $p = .061$). Furthermore, the receiving gratitude condition remained significant in these analyses, $B = 1.67$, $SE = 0.37$, $t(143) = 4.51$, $p < .001$, $r = .56$, suggesting that feelings of gratitude only partially mediates the effects of receiving gratitude.

Finally, we assessed if participants' reports of receiving gratitude from their partner mediated the association between receiving gratitude and SCS. The model specified a dummy-coded variable for condition (0 = *control conditions*, 1 = *receiving gratitude condition*) as the independent variable, the received gratitude manipulation check as the mediator, and SCS as the dependent variable. Results revealed that participants in the receiving gratitude condition reported receiving more gratitude from their partners than those in the control conditions, $B = 2.59$, $SE = 0.44$, $t(143) = 5.94$, $p < .001$, $r = .45$, and such received gratitude was positively associated with SCS, $B = 0.51$, $SE = 0.06$, $t(143) = 7.91$, $p < .001$, $r = .64$, controlling for the receiving gratitude condition. The indirect effect revealed that the received gratitude manipulation check mediated the association between receiving gratitude and SCS ($b = 1.33$, $SE = 0.27$, 90% CI = 0.89, 1.79, $p < .001$).

Controlling for Optimism and Excitement

Finally, we examined whether the effects of gratitude were independent from optimism (“As of right now, I feel optimistic about my partner”) and excitement (“As of right now, I feel excited about my partner”), assessed by two items used to conceal the manipulation check. Results revealed significant differences in SCS between the conditions after controlling for optimism, $F(3,198) = 5.80$, $p = .001$, and excitement, $F(3,198) = 6.56$, $p < .001$. Fisher's LDS post hoc tests revealed that participants in the experiencing gratitude condition reported greater SCS than those in the positive affect control condition after controlling for optimism ($p = .006$)

and excitement ($p = .005$), as well as greater SCS than those in the partner control condition after controlling for optimism ($p = .023$) and excitement ($p = .025$). Participants in the receiving gratitude condition reported greater SCS than those in the positive affect control condition after controlling for optimism ($p < .001$) and excitement ($p < .001$), as well as greater SCS than those in the partner control condition after controlling for optimism ($p = .002$) and excitement ($p = .001$).

Tables

Table 1. Descriptive Statistics and Correlations Among Variables in Project 1, Study 1

Time 1	1	2	3	<i>M</i>	<i>SD</i>
SCS	.11	.14*	.24**	5.56	0.94
Gratitude Experienced	.33**	.40**	.65**	5.24	1.00
Gratitude Received	.20**	.52**	.46**	5.15	1.38
Time 2	1	2	3	<i>M</i>	<i>SD</i>
SCS	.17*	.28**	.26**	5.61	1.02
Gratitude Experienced	.41**	.49**	.60**	5.26	0.99
Gratitude Received	.30**	.65**	.49**	5.16	1.27
Time 3	1	2	3	<i>M</i>	<i>SD</i>
SCS	.33**	.23**	.25**	5.43	1.05
Gratitude Experienced	.49**	.34**	.50**	5.32	1.02
Gratitude Received	.33**	.70**	.42**	5.02	1.41

Note. Intrapersonal correlations are presented below the diagonal, interpersonal correlations appear on and above the diagonal. SCS = sexual communal strength.

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

Table 2. Regression Analyses of Gratitude Predicting Sexual Communal Strength, Controlling for Covariates in Project 1, Study 1

Covariate	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>r</i>	95% CI
Communal motivation						
Gratitude Experienced	0.28	0.12	2.31	.023	.21	0.04, 0.52
Gratitude Received	0.25	0.09	2.85	.005	.26	0.07, 0.43
Relationship Satisfaction						
Gratitude Experienced	0.28	0.13	2.09	.039	.19	0.02, 0.54
Gratitude Received	0.25	0.09	2.76	.007	.25	0.07, 0.43
Commitment						
Gratitude Experienced	0.25	0.12	2.10	.038	.19	0.01, 0.49
Gratitude Received	0.23	0.08	2.76	.007	.25	0.07, 0.39
Intimacy						
Gratitude Experienced	0.26	0.12	2.10	.038	.19	0.02, 0.50
Gratitude Received	0.24	0.09	2.65	.009	.24	0.06, 0.42
Sexual Desire						
Gratitude Experienced	0.32	0.12	2.57	.012	.23	0.08, 0.56
Gratitude Received	0.29	0.09	3.34	.001	.30	0.11, 0.47

Note. *df* = 113.

Table 3. Descriptive Statistics and Correlations Among Variables in Project 1, Study 2

	1	2	<i>M</i>	<i>SD</i>
(1) SCS			8.18	2.32
(2) Experiencing Gratitude	.47**		7.20	2.36
(3) Receiving Gratitude	.41**	.51**	6.78	2.62

Note. Intrapersonal correlations are presented below the diagonal, interpersonal correlations appear on and above the diagonal. SCS = sexual communal strength.

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

Table 4. Post Hoc Analyses Comparing Conditions in Sexual Communal Strength, Controlling for Covariates in Project 1, Study 2

	Experiencing Gratitude vs. Positive Affect Control	Experiencing Gratitude vs. Partner Control	Receiving Gratitude vs. Positive Affect Control	Receiving Gratitude vs. Partner Control
Covariate	<i>p</i> [95% CI]			
Communal Motivation	.004 [0.32, 1.68]	.166 [-0.22, 1.28]	<.001 [0.81, 2.28]	.009 [0.27, 1.87]
Relationship Satisfaction	.006 [0.30, 1.75]	.008 [0.27, 1.84]	.009 [0.28, 1.93]	.010 [0.28, 2.00]
Commitment Intimacy	.009 [0.25, 1.67]	.086 [-0.10, 1.45]	<.001 [0.91, 2.43]	.001 [0.57, 2.21]
Positive Affect	.005 [0.31, 1.75]	.006 [0.33, 1.88]	<.001 [0.59, 2.18]	.001 [0.63, 2.29]
	.003 [0.41, 1.97]	.026 [0.12, 1.81]	<.001 [0.81, 2.53]	.002 [0.53, 2.36]

Table 5. Descriptive Statistics and Correlations Among Supplemental Variables in Project 1, the Pilot Study

	1	2	3	4	5	6	<i>M</i> _{women}	<i>SD</i> _{women}
(1) SCS	--	.48**	.43**	.58**	.43**	.45**	7.68	1.47
(2) Gratitude Experienced	.60**	--	.54**	.56**	.89**	.95**	5.08	1.03
(3) Gratitude received	.57**	.82**	--	.25**	.49**	.50**	4.94	1.24
(4) CS	.72**	.66**	.59**	--	.45**	.57**	8.52	1.62
(5) Feelings of Gratitude	.65**	.92**	.75**	.56**	--	.69**	4.86	1.04
(6) Expressions of Gratitude	.48**	.94**	.78**	.66**	.74**	--	5.25	1.19
<i>M</i> _{men}	7.70	5.01	5.00	7.93	4.76	5.20		
<i>SD</i> _{men}	1.68	0.95	1.03	1.58	1.04	0.99		

Note. Descriptive statistics and correlations are presented above the diagonal for women and below the diagonal for me. SCS = sexual communal strength, CS = communal strength.

**p* < .05, ** *p* < .01.

Table 6. Descriptive Statistics and Correlations Among Supplemental Variables in Project 1, Study 1

Time 1	1	2	3	4	5	6	<i>M</i>	<i>SD</i>
(1) SCS	.11	.14*	.24**	.20**	.17**	.12	5.56	0.94
(2) Gratitude Experienced	.33**	.40**	.65**	.27**	.42**	.37**	5.24	1.00
(3) Gratitude Received	.20**	.52**	.46**	.28**	.55**	.67**	5.15	1.38
(4) CS	.48**	.45**	.31**	.40**	.27**	.26**	5.87	0.74
(5) Feelings of Gratitude	.31**	.89**	.57**	.46**	.40**	.41**	5.28	0.94
(6) Expressions of Gratitude	.33**	.94**	.48**	.41**	.73**	.32**	5.44	1.11
Time 2	1	2	3	4	5	6	<i>M</i>	<i>SD</i>
(1) SCS	.17*	.28**	.26**	.35**	.29**	.27**	5.61	1.02
(2) Gratitude Experienced	.41**	.49**	.60**	.31**	.50**	.45**	5.26	0.99
(3) Gratitude Received	.30**	.65**	.49**	.31**	.54**	.58**	5.16	1.27
(4) CS	.61**	.46**	.38**	.55**	.37**	.28**	5.82	0.82
(5) Feelings of Gratitude	.41**	.92**	.69**	.53**	.49**	.47**	5.33	0.98
(6) Expressions of Gratitude	.38**	.94**	.58**	.42**	.78**	.42**	5.43	1.10
Time 3	1	2	3	4	5	6	<i>M</i>	<i>SD</i>

(1) SCS	.33**	.23*	.25*	.26**	.25*	.19	5.43	1.05
(2) Gratitude Experienced	.49**	.34**	.50**	.20*	.33**	.31**	5.02	1.02
(3) Gratitude Received	.33**	.70**	.42**	.20	.43**	.52**	5.02	1.41
(4) CS	.60**	.56**	.42**	.25*	.22*	.16	5.64	0.89
(5) Feelings of Gratitude	.46**	.95**	.72**	.55**	.33**	.30**	5.31	1.06
(6) Expressions of Gratitude	.46**	.94**	.60**	.51**	.77**	.29**	5.34	1.12

Note. Intrapersonal correlations are presented below the diagonal, interpersonal correlations appear on and above the diagonal.

SCS = sexual communal strength, CS = communal strength.

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

Table 7. Regression Analyses of Partner's Gratitude Predicting Sexual Communal Strength, Controlling for Covariates in Project 1, Study 1

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>r</i>
Communal motivation					
Partner Gratitude Experienced	0.23	0.09	2.50	.014	.23
Partner Gratitude Received	0.20	0.11	1.58	.117	.15
Relationship Satisfaction					
Partner Gratitude Experienced	0.23	0.11	2.07	.041	.19
Partner Gratitude Received	0.17	0.11	1.56	.123	.15
Commitment					
Partner Gratitude Experienced	0.21	0.10	2.13	.035	.20
Partner Gratitude Received	0.16	0.12	1.27	.207	.12
Intimacy					
Partner Gratitude Experienced	0.21	0.10	2.10	.038	.19
Partner Gratitude Received	0.16	0.12	1.36	.178	.13
Sexual Desire					
Partner Gratitude Experienced	0.26	0.11	2.48	.015	.23
Partner Gratitude Received	0.20	0.11	1.82	.071	.17

Note. *df* = 113.

Table 8. Descriptive Statistics and Correlations Among Supplemental Variables in Project 1, Study 2

	1	2	3	<i>M</i>	<i>SD</i>
(1) SCS				8.18	2.32
(2) Experiencing Gratitude	.47**			7.20	2.36
(3) Receiving Gratitude	.41**	.51**		6.78	2.62
(4) CS	.57**	.62**	.58**	8.55	1.70

Note. SCS = sexual communal strength, CS = communal strength.

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

Measures for Pilot Study and Study 1

Sexual Communal Strength

Keeping in mind your romantic partner, answer the following questions. Circle one answer for each question on the scale from 1 = *not at all* to 7 = *extremely* before going on the next question. Your answers will remain confidential.

1. How far would you be willing to go to meet your partner's sexual needs?
2. How readily could you put the sexual needs of your partner out of your thoughts?
3. How high a priority for you is meeting the sexual needs of your partner?
4. How easily could you accept not meeting your partner's sexual needs?
5. How likely are you to sacrifice your own needs to meet the sexual needs of your partner?
6. How happy do you feel when satisfying your partner's sexual needs?

Appreciation in Relationships (AIR) Scale

Answer according to how strongly you agree with each item. 1 = *strongly disagree*; 7 = *strongly agree*.

1. I tell my partner often that s/he is the best.
2. I often tell my partner how much I appreciate her/him.
3. At times I take my partner for granted.
4. I appreciate my partner.
5. Sometimes I don't really acknowledge or treat my partner like s/he is someone special.
6. I make sure my partner feels appreciated.
7. My partner sometimes says that I fail to notice the things that s/he does for me.
8. I acknowledge the things that my partner does for me, even the really small things.
9. I am sometimes struck with a sense of awe and wonder when I think about my partner being in my life.
10. My partner makes sure I feel appreciated.
11. When I am with my partner, sometimes s/he will look at me excitedly and tell me how much s/he appreciate me.
12. My partner often tells me the things that s/he really likes about me.
13. At times my partner takes me for granted.
14. My partner often expresses her/his thanks when I do something nice, even if it's really small.
15. My partner doesn't notice when I do nice things for her/him.
16. My partner makes me feel special.

The 10-item Communal Strength Measure

Keeping in mind your romantic partner, answer the following questions. Circle one answer for each question on the scale from 1 = *not at all* to 11 = *extremely* before going on the next question. Your answers will remain confidential.

1. How far would you be willing to go to visit your partner?
2. How happy do you feel when doing something that helps your partner?
3. How large a benefit would you be likely to give your partner?
4. How large a cost would you incur to meet a need of your partner?
5. How readily can you put the needs of your partner out of your thoughts?
6. How high a priority for you is meeting the needs of your partner?
7. How reluctant would you be to sacrifice for your partner?
8. How much would you be willing to give up to benefit your partner?
9. How far would you go out of your way to do something for your partner?
10. How easily could you accept not helping your partner?

Demographics.

1. What is your gender?
2. How old are you?
3. What is your ethnicity?
4. What is your sexual orientation?
5. How many months and/or years have you been with your current romantic partner?
6. What best describes your relationship with your current romantic partner?

Measures for Study 2

Manipulation Instructions for Writing Task 1

For this task, we would like for you to write a letter about a recent experience you encountered.

- **Experiencing gratitude condition:** “Specifically, we would like you to think about and describe in detail the most recent moment felt appreciation or gratitude toward your romantic partner, and how you felt in that situation.”

- **Receiving gratitude condition:** “Specifically, we would like you to think about and describe in detail the most recent moment that your romantic partner expressed appreciation or gratitude towards yourself, and how you felt in that situation.”
- **Positive affect control condition:** “Specifically, we would like you to think about and describe in detail the most recent moment that you had a good experience that **did not involve your romantic partner**, and how you felt in that situation.”
- **Partner control condition:** “Specifically, we would like you to think about and describe in detail the most recent experience that happened to your romantic partner that **did not affect or involve you in any way.**”

Manipulation Instructions for Writing Task 2

For this task, we would like you to make a list.

- **Experiencing gratitude condition:** “Specifically, we would like you to list two things that you are most appreciative or grateful for about your romantic partner, and to write 2-3 sentences for each item, describing why you are so appreciative of those qualities.”
- **Receiving gratitude condition:** “Specifically, we would like you to list two things that you feel your romantic partner is most appreciative or grateful for about yourself, and to write 2-3 sentences for each item, describing how you know your romantic partner is appreciative of those qualities.”
- **Positive affect control condition:** “Specifically, we would like you to list two activities that you enjoy doing **without your romantic partner**, and to write 2-3 sentences for each item, describing why you chose those activities.”
- **Partner control condition:** “Specifically, we would like you to list two activities that your romantic partner enjoys doing that **does not involve you**, and to write 2-3 sentences for each item.”

Manipulation Check

Please respond to the following statements **based on how you are currently feeling**. 1 = *do not agree at all*, 9 = *agree completely*. “As of right now, I feel ___ about my partner”

1. ...Frustrated
2. ...Happy
3. ...Worried
4. ...Nervous
5. ...Sad
6. ...Optimistic
7. ...Appreciative
8. ...Jealous
9. ...Excited
10. ...Angry

“As of right now, my partner makes me feel...”

1. ...Frustrated
2. ...Happy
3. ...Worried
4. ...Nervous
5. ...Sad
6. ...Optimistic
7. ...Appreciated
8. ...Jealous
9. ...Excited
10. ...Angry

Sexual Communal Strength

Keeping in mind your romantic partner, answer the following questions. Circle one answer for each question on the scale from 1 = *not at all* to 11 = *extremely* before going on the next question. Your answers will remain confidential.

1. How far would you be willing to go to meet your partner’s sexual needs?
2. How readily could you put the sexual needs of your partner out of your thoughts?
3. How high a priority for you is meeting the sexual needs of your partner?
4. How easily could you accept not meeting your partner’s sexual needs?
5. How likely are you to sacrifice your own needs to meet the sexual needs of your partner?
6. How happy do you feel when satisfying your partner’s sexual needs?

The 10-item Communal Strength Measure

Keeping in mind your romantic partner, answer the following questions. Circle one answer for each question on the scale from 1 = *not at all* to 11 = *extremely* before going on the next question. Your answers will remain confidential.

1. How far would you be willing to go to visit your partner?
2. How happy do you feel when doing something that helps your partner?
3. How large a benefit would you be likely to give your partner?
4. How large a cost would you incur to meet a need of your partner?
5. How readily can you put the needs of your partner out of your thoughts?
6. How high a priority for you is meeting the needs of your partner?
7. How reluctant would you be to sacrifice for your partner?
8. How much would you be willing to give up to benefit your partner?

9. How far would you go out of your way to do something for your partner?
10. How easily could you accept not helping your partner?

Demographics

1. What sex were you assigned at birth, on your original birth certificate?
2. How do you describe yourself?
3. How old are you?
4. What is your ethnicity?
5. What is your sexual orientation?
6. How many months have you been with your current romantic partner?
7. What best describes your relationship with your current romantic partner?
8. Are you and your partner in an open relationship?

APPENDIX B: SUPPLEMENTAL MATERIALS FOR CHAPTER III

An abundance of research has also implicated intimates' (a) commitment to maintaining their primary romantic relationship and (b) motivation to intentionally seek out and form extradyadic romantic relationships in determining both their attention to attractive alternatives and infidelity (Maner et al., 2009; Maner et al., 2008; Miller, 1997). As such, in these OSM, we posed two supplemental research questions that addressed the role of these two factors. First, based on previous research that has revealed that people pay less attention to attractive others to the extent that they are committed to their relationships (Maner et al., 2009; Miller, 1997) and are not intentionally seeking extradyadic romantic relationships (DeWall et al., 2011), we predicted that intimates' attention to attractive others would be negatively associated with relationship commitment and positively associated with intentional pursuit of alternatives. Second, consistent with the theoretical perspectives of Lydon and Karremans (2015) who posit that both motivation and ability are necessary to resist tempting others, we predicted that the implications of commitment and intentional pursuit of alternatives for infidelity (i.e., motivation) would similarly depend on self-regulatory ability, such that intimates who are low in commitment, are intentionally pursuing alternative partners, and/or lack self-regulatory ability would be at greater risk for infidelity than intimates who possess both the ability and motivation to resist infidelity.

Study 1

In addition to the measures reported in the primary manuscript, participants also reported their relationship commitment and intentional pursuit of alternatives. We predicted that intimates' attention to attractive other would be negatively associated with commitment and

positively associated with intentional pursuit, and we examined whether these associations were further moderated by self-regulatory ability.

Methods

Participants

Participants reported being in a relationship for an average of 18.40 ($SD = 15.98$) months. One hundred and forty-four (81%) participants were dating exclusively, 23 (13%) were dating casually, 6 (3%) were engaged, and 4 (2%) were married. Sixty-nine participants (39%) identified as Black or African American, 68 (38%) identified as White or Caucasian, 16 (9%) identified as Hispanic or Latino/a, 10 (6%) identified as Asian, and the remaining 14 (8%) identified as another ethnicity or two or more ethnicities. The majority of participants ($n = 150$; 85%) identified as heterosexual, 17 (10%) identified as bisexual, 4 (2%) identified as gay or lesbian, and 6 (3%) identified as other or did not know.

Measures

Intentional Pursuit of Alternatives. The extent to which participants intentionally attempt to seek out and form relationships with extradyadic partners was assessed with the Active Prowling subscale of the Attention to Alternatives Index (Miller et al., 2010). This measure requires individuals to report the extent to which they agree with seven items that assess the extent to which they actively pursue attractive others (e.g., “I’m always on the prowl for an exciting new relationship”, “I’m always looking for new romantic partners even though I’m already in a relationship”) using a 5-point Likert response scale from 1 (*never*) to 5 (*always*). All items were summed. Internal consistency was acceptable ($\alpha = .74$).

Commitment. Relationship commitment was assessed with the Commitment subscale of the Investment Model Scale (Rusbult, Martz, & Agnew, 1998). This measure requires

individuals to report the extent to which they agree with seven items that assess the extent to which they are committed to their current relationship (e.g., “I want our relationship to last for a very long time”, “I am committed to maintaining my relationship with my partner”) using a 9-point scale from 0 (*do not agree at all*) to 8 (*agree completely*). Internal consistency was acceptable ($\alpha = .93$).

Results

Descriptive Statistics and Preliminary Analyses

Descriptive statistics and bivariate correlations appear in Table 1. Men ($M = 12.72$, $SD = 5.40$) reported intentionally seeking to form extradyadic romantic relationships more than women did ($M = 10.70$, $SD = 3.36$), $t(172) = 2.79$, $p = .006$, $d = .45$. Further, women ($M = 56.61$, $SD = 9.80$) were more committed to their relationships than were men ($M = 49.44$, $SD = 15.06$), $t(172) = -3.46$, $p = .001$, $d = .56$.

The Role of Commitment

Before examining the implications of commitment, we first examined whether the Self-Control Condition X Attention interaction that was reported in the primary manuscript continued to significantly predict the likelihood of participants’ registering for the dating app and the number of people that participants reported being interested in pursuing, after controlling for commitment. Results indicated that, after controlling for commitment, the Self-Control Condition X Attention interaction remained marginally significant when predicting the likelihood of participants’ registering for the dating app, $b = 0.11$, $SE = 0.06$, $Wald(1) = 3.57$, $p = .059$, and the number of people that participants reported being interested in pursuing, $b = 0.50$, $SE = 0.27$, $t(168) = 1.83$, $p = .069$, $\beta = .22$.

Next, we conducted supplemental analyses to examine the role of intimates’ relationship

commitment for their attention to attractive alternatives and behaviors that contribute to infidelity. As the bivariate correlations in Table 9 reveal, participants' attention was negatively associated with commitment, suggesting that, consistent with previous research (Maner et al., 2009; Miller, 1997), intimates reported paying less attention to attractive others to the extent that they were committed to their relationships. Similarly, commitment was negatively associated with registering for the dating app and being interested in pursuing fewer others.

Finally, we examined whether the self-regulation manipulation similarly determined the implications of commitment by repeating the multivariate regressions described in the primary manuscript, except the current analyses replaced mean-centered attention scores and the Self-Control Condition X Attention interaction with mean-centered commitment scores and the Self-Control Condition X Commitment interaction. Inconsistent with our predictions, results indicated that the Self-Control Condition X Commitment interaction was not associated with frequency of alternatives, $b = 0.04$, $SE = 0.15$, $t(169) = 0.27$, $p = .791$, $\beta = .04$, nor registering for the dating app, $b = -0.01$, $SE = 0.02$, $Wald(1) = 0.05$, $p = .822$, $Odds Ratio = 1.00$, indicating that the implications of commitment for behaviors that contribute to infidelity did not depend on self-regulatory ability.

The Role of Intentional Pursuit of Alternatives

Before examining the implications of the intentional pursuit of alternatives, we first examined whether the Self-Control Condition X Attention interaction that was reported in the primary manuscript continued to significantly predict the likelihood of participants' registering for the dating app and the number of people that participants reported being interested in pursuing, after controlling for intentional pursuit. Results indicated that, after controlling for intentional pursuit, the Self-Control Condition X Attention interaction remained marginally

significant when predicting the likelihood of participants' registering for the dating app, $b = 0.11$, $SE = 0.06$, $Wald(1) = 3.62$, $p = .057$, and the number of people that participants reported being interested in pursuing, $b = 0.48$, $SE = 0.27$, $t(168) = 1.79$, $p = .075$, $\beta = .21$.

Next, we conducted supplemental analyses to examine the role of intentional pursuit for attention to alternatives and behaviors that contribute to infidelity. As the bivariate correlations in Table 9 reveal, participants' attention was positively associated with intentional pursuit, suggesting that intimates paid less attention to attractive others to the extent that they were not intending to seek out and form extradyadic romantic relationships. Furthermore, participants' intentions to form extradyadic romantic relationships were associated with being interested in pursuing more people and an increased likelihood of registering for the dating app.

Finally, we examined whether the self-regulation manipulation similarly determined the implications of intentional pursuit by repeating the multivariate regressions described in the primary manuscript, except the current analyses replaced mean-centered attention scores and the Self-Control Condition X Attention interaction with mean-centered intentional pursuit scores and the Self-Control Condition X Intentional Pursuit interaction. The Self-Control Condition X Intentional Pursuit interaction was not associated with frequency of alternatives, $b = -0.11$, $SE = 0.42$, $t(169) = -0.27$, $p = .787$, $\beta = -.03$, nor registering for the dating app, $b = 0.05$, $SE = 0.09$, $Wald(1) = 0.34$, $p = .558$, $Odds Ratio = 1.06$, indicating that the implications of intimates' intentions to form extradyadic romantic relationships for behaviors that contribute to infidelity did not depend on self-regulatory ability.

Study 2

In addition to the measures reported in the primary manuscript, participants also reported their relationship commitment and intentional pursuit of alternatives. Nevertheless, we did not

test our predictions involving commitment with these data. In particular, given that the study consisted of newlywed couples who tend to be extremely committed to their new marriages (e.g., Veroff, 1999), our measure of commitment yielded a ceiling effect ($M = 61.09$, $SD = 3.69$, on the commitment subscale of the IMS, which ranges from 7-63) and thus this study does not provide a fair test of the supplemental predictions involving commitment due to the lack of variability on this measure. As such, we tested whether intimates' attention to attractive other would be positively associated with intentional pursuit, and we examined whether this association was further moderated by self-regulatory ability.

Methods

Participants

Husbands had received 16.17 years ($SD = 3.02$) of education. Sixty-two percent were White or Caucasian, 28% percent were Black or African American, and the remaining 9% were another or two or more ethnicities. Forty-six percent were Christian, 34% were agnostic, atheist, or reported that they were not religious, and the remaining 20% reported another religious affiliation. Seventy-six percent were employed full time and 12% were full-time students. Wives had received 17.54 years ($SD = 2.61$) of education. Sixty-five percent were White or Caucasian, 26% were Black or African American, and the remaining 11% were another or two or more ethnicities. Forty-five percent were Christian, 33% were agnostic, atheist, or reported that they were not religious, and the remaining 22% reported another religious affiliation. Sixty-five percent were employed full time and 13% were full-time students.

Measures

Intentional Pursuit of Alternatives. The extent to which participants intentionally seek out and form extradyadic romantic relationships was again assessed with the Active Prowling

subscale of the Attention to Alternatives Index (Miller et al., 2010) that was described in Study 1. Internal consistency was acceptable ($\alpha = .79$).

Results

Descriptive Statistics and Preliminary Analyses

Descriptive statistics and bivariate correlations appear in Table 11.

The Role of Intentional Pursuit of Alternatives

Before examining the implications of the intentional pursuit of alternatives, we first examined whether the Self-Control Condition X Attention interaction that was reported in the primary manuscript continued to significantly predict infidelity, after controlling for intentional pursuit. Results indicated that self-regulatory ability continued to moderate the implications of both objective, $b = -0.00$, $SE = 0.00$, $t(79) = -3.13$, $p = .002$, and self-reported, $b = -0.01$, $SE = 0.00$, $t(82) = -2.05$, $p = .044$, attention to alternatives after controlling for spouses' intentional pursuit of alternative partners.

Next, we examined whether intentional pursuit was associated with paying attention to attractive alternatives by estimating two separate two-level models in which either objective or self-reported attention scores were regressed onto their intentional pursuit scores (the former controlled for their average reaction time to non-attractive faces). Consistent with the results from Study 1, results indicated that intentional pursuit was positively associated with self-reported, $b = 0.79$, $SE = 0.13$, $t(100) = 5.87$, $p < .001$, $\beta = .38$, but not objective, $b = 0.16$, $SE = 0.88$, $t(96) = 0.18$, $p = .856$, $\beta = .00$, attention to attractive alternatives, suggesting that intimates report that they pay less attention to attractive others to the extent that they are not intending to seek out and form extradyadic romantic relationships, although we did not find any evidence that they actually do pay less attention.

Finally, we examined the implications of intentional pursuit for infidelity by estimating a two-level model in which spouses' infidelity scores were regressed onto their intentional pursuit scores. Consistent with the results from Study 1, results indicated that participants' intentions to form extradyadic romantic relationships were associated with a greater likelihood of infidelity, $b = 0.34$, $SE = 0.09$, $t(85) = 3.79$, $p < .001$. Finally, we examined whether self-control determined the implications of intentional pursuit in a manner similar to attention to alternatives by repeating the multilevel models described in the primary manuscript, except the current analyses replaced mean-centered attention scores and the Self-Control X Attention interaction with mean-centered intentional pursuit scores and the Self-Control X Intentional Pursuit interaction. Inconsistent with our predictions, the Self-Control Condition X Intentional Pursuit interaction was not associated with infidelity, $b = 0.02$, $SE = 0.01$, $t(83) = 1.47$, $p = .145$, indicating that the implications of intimates' intentions to form extradyadic romantic relationships for infidelity did not depend on self-regulatory ability.

General Discussion

These results suggest that intimates' commitment to maintaining their primary romantic relationship and intentional pursuit of alternative partners do not account for the effects of their attention to alternatives reported in the primary manuscript. However, consistent with previous research, commitment was negatively associated with, and intentional pursuit was positively associated with, engaging in infidelity. Nevertheless, inconsistent with our predictions and theoretical perspectives on extradyadic pursuit (Lydon & Karremans, 2015), self-regulatory ability did not moderate these effects.

Tables

Table 9. Descriptive Statistics and Correlations Among Variables in Project 2, Study 1

	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
(1) Attention	--							20.23	6.07
(2) Self-control Condition	.03	--						50%	--
(3) Frequency of Interest	.06	.17*	--					11.60	10.75
(4) Attractiveness of Interest	.09	.20**	.99**	--				67.88	58.92
(5) Registered for Dating App	.18*	.03	.20**	.22**	--			58%	--
(6) Commitment	-.37**	-.17*	-.20**	-.24**	-.17*	--		55.10	11.36
(7) Intentional Pursuit	.37**	.12	.23**	--	.19*	-.60**	--	11.19	4.02

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

Table 10. Effects of Attention to Alternatives, Self-control, and their Interactions on Interest in Attractive Alternatives and Registering for the Dating App in Project 2, Study 1

	Frequency of Interest ^a			
	<i>b</i>	<i>t</i>	<i>p</i>	β
Gender	-12.75	-8.73	< .001	-.15
Attention to Alternatives (AA)	-0.09	-0.66	.512	-.17
Condition (C)	3.15	2.70	.008	.15
C X AA	0.54	2.76	.006	.25
	Attractiveness of Interest ^b			
	<i>b</i>	<i>t</i>	<i>p</i>	β
Gender	-6.38	-8.73	< .001	-.09
Frequency of Interest	5.26	94.55	< .001	.96
Attention to Alternatives (AA)	-0.10	-0.66	.512	-.01
Condition (C)	3.15	2.70	.008	.03
C X AA	0.54	2.76	.006	.04
	Registering for the Dating App ^c			
	<i>b</i>	<i>Wald</i>	<i>p</i>	<i>Odds Ratio</i>
Attention to Alternatives (AA)	0.00	0.00	.991	1.00
Condition (C)	0.15	0.22	.637	1.16
C X AA	0.12	4.38	.036	1.12

Note. ^a *df* = 169, ^b *df* = 168, ^c *df* = 1.

Table 11. Descriptive Statistics and Correlations Among Variables in Project 2, Study 2

	1	2	3	4	5	<i>M</i>	<i>SD</i>
(1) Self-reported Attention	.12	.00	-.20*	.43**	.40**	18.70	6.84
(2) Objective Attention	.00	.01	.08	.02	-.07	542.38	116.53
(3) Self-control	-.11	-.06	.06	-.09	-.18†	44.11	9.15
(4) Infidelity at Follow Up	.19†	.25*	-.27*	.02	.44**	0.30	1.57
(5) Intentional Pursuit	.32**	-.01	-.10	.37**	.07	9.34	3.77
<i>M</i>	19.99	520.79	42.95	0.36	8.80		
<i>SD</i>	6.47	113.44	7.97	1.82	2.49		

Note. Descriptive statistics and correlations are presented above the diagonal for women and below the diagonal for men.

Correlations between spouses appear on the diagonal in bold.

† $p < .10$, * $p < .05$, ** $p < .01$.

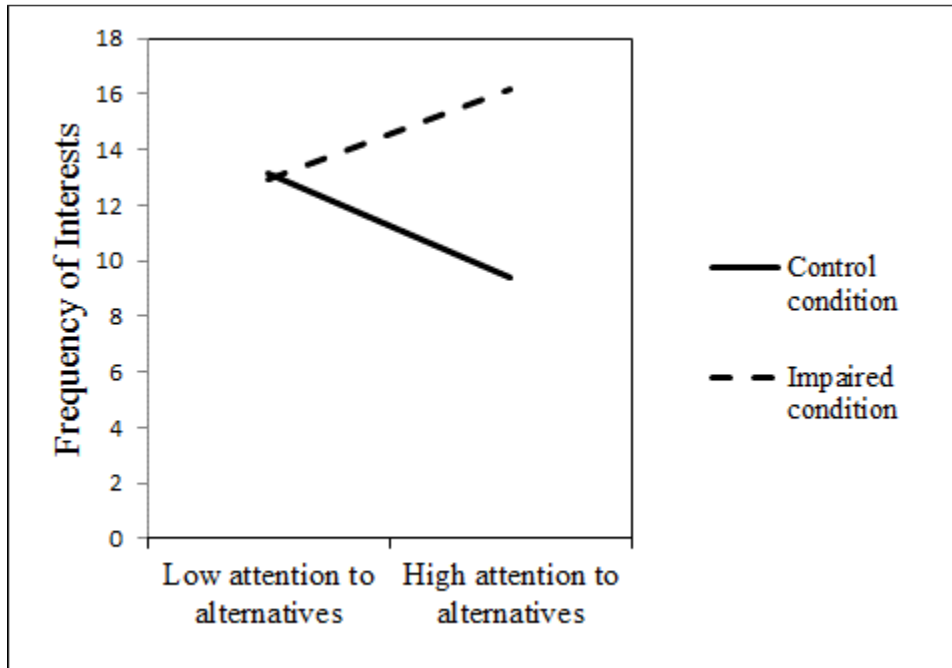
Table 12. Effects of Objective and Self-reported Attention to Alternatives, Self-control, and their Interactions on Infidelity in Project 2, Study 2

	Infidelity ^a			
	<i>b</i>	<i>t</i>	<i>p</i>	β
Average Reaction Time	-0.01	-1.82	.072	-.55
Objective Attention (OA)	0.01	2.01	.048	.47
Self-control (SC)	-0.03	-2.07	.041	-.16
SC X OA	-0.00	-2.33	.023	-.17
	Infidelity ^b			
	<i>b</i>	<i>t</i>	<i>p</i>	β
Self-reported Attention (SA)	0.08	4.10	< .001	.30
Self-control (SC)	-0.03	-2.13	.036	-.16
SC X SA	-0.01	-3.03	.003	-.23

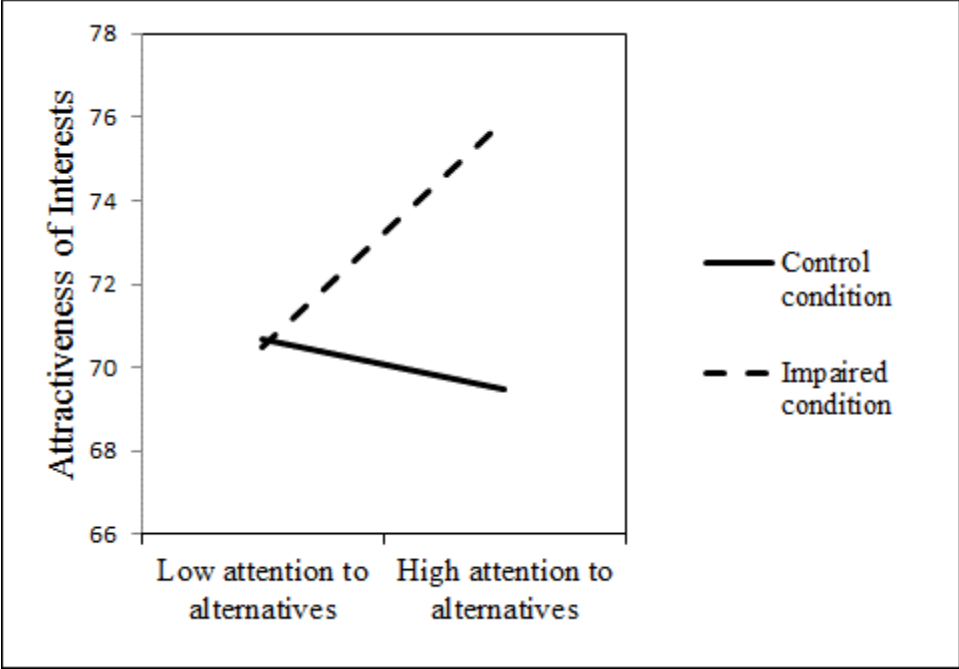
Note. ^a *df* = 78, ^b *df* = 80.

Figures

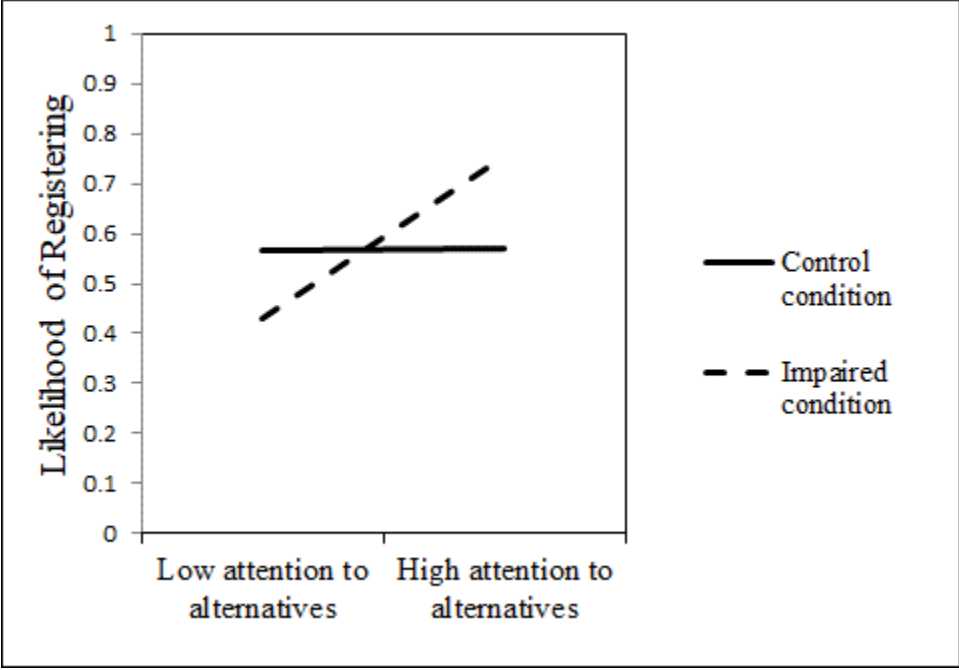
Figure 1. Interactive Effects of Attention to Attractive Alternatives and Self-control on Behaviors that Contribute to Infidelity in Project 2, Study 1



Panel A

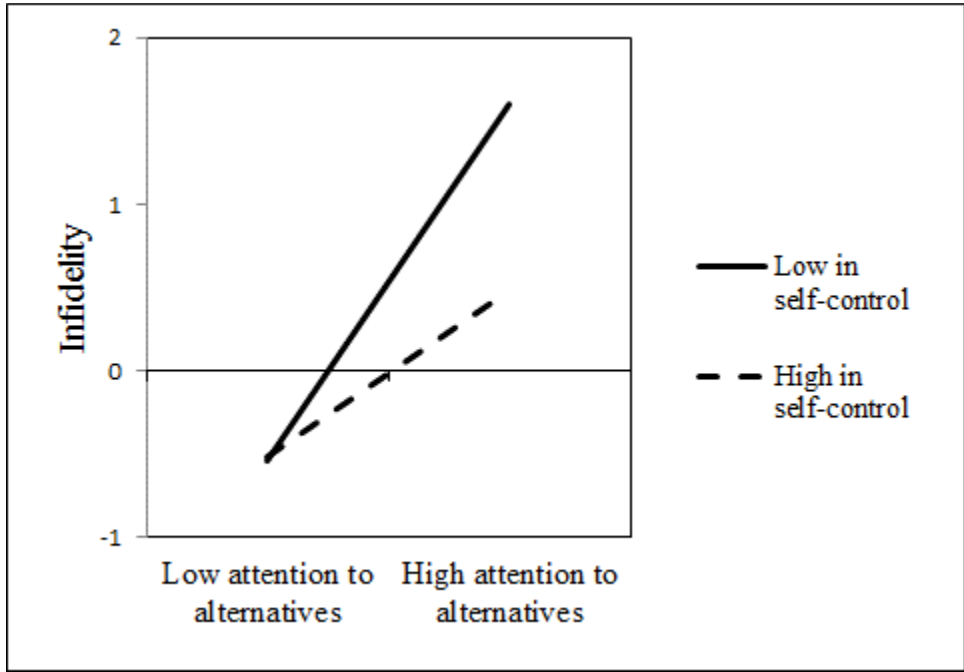


Panel B

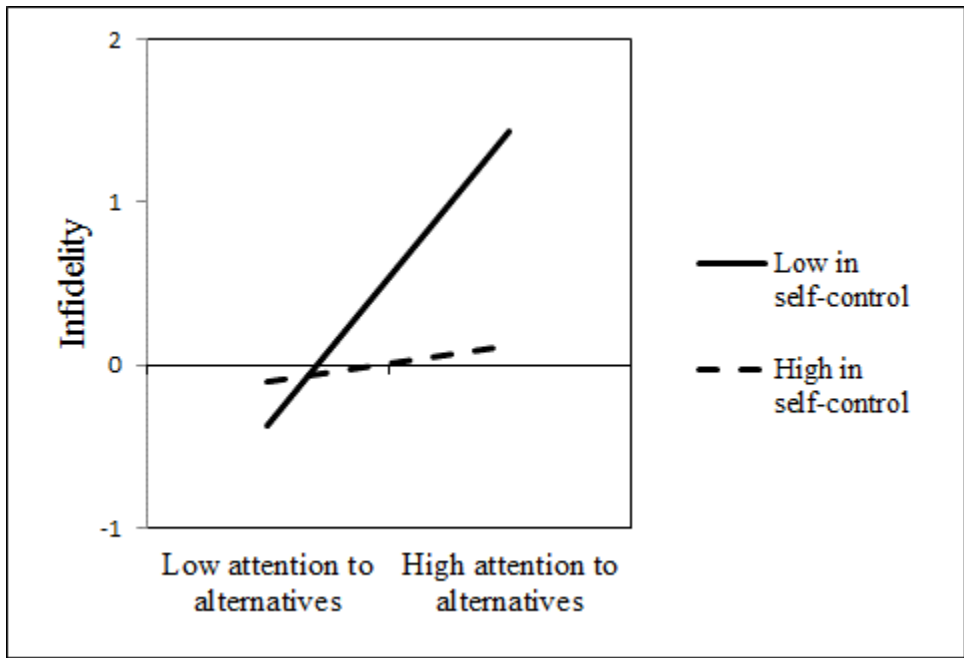


Panel C

Figure 2. Interaction Effects of Attention to Attractive Alternatives and Self-control on Infidelity in Project 2, Study 2



Panel A (Objective Attention)



Panel B (Self-reported Attention)

APPENDIX C: SUPPLEMENTAL MATERIALS FOR CHAPTER IV

Pilot Study

Results

Preliminary analyses revealed that men and women did not differ in their reports of commitment readiness, $t(355) = 0.27, p = .790, d = .03$. However, men reported expecting significantly fewer available partners compared to women, $t(355) = -2.36, p = .019, d = -.25$. Further, supplemental analyses indicated that perceived romantic partners remained negatively associated with commitment readiness after controlling for gender, $B = -0.40, SE = 0.06, t(356) = -6.64, p < .001$.

Studies 1a and 1b

Method

Participants

Study 1a was conducted during a period when it had become clear that not all MTurk respondents were human and/or serious respondents (see Ahler et al., 2019). Accordingly, 575 of the 784 recruited participants were excluded for failing attention checks and/or not following instructions and 95 participants were excluded for indicating that they were already in a committed relationship. In Study 1b, we recruited 393 single participants, 41 of whom were excluded for failing attention checks and/or not following instructions, leaving a total of 352 participants (184 female, 164 male, 2 transgender, 2 other; $M_{age} = 43.69, SD_{age} = 14.50$).

Results

Preliminary analyses indicated that men and women in Study 1a did not differ in their reports of commitment readiness, $t(112) = 0.19, p = .852, d = .04$. However, in Study 1b, men (M

= 41.50, $SD = 15.27$) were more ready for a committed relationship than were women ($M = 37.58$, $SD = 16.94$), $t(350) = 2.26$, $p = .024$, $d = .24$.

In Study 1b, participants in the many partners condition did not differ from participants in the few partners condition in regard to their perceptions of the amount of single people who live near them, $t(350) = 1.40$, $p = .163$, $d = .15$, enjoyment from interacting with others, $t(350) = -0.91$, $p = .928$, $d = -.01$, perceived mate value, $t(350) = 1.27$, $p = .206$, $d = .14$, ease finding potential partners, $t(350) = 1.56$, $p = .119$, $d = .17$, social network size, $t(350) = 0.22$, $p = .829$, $d = .02$, or previous dating success, $t(350) = 1.25$, $p = .212$, $d = .13$.

As noted in the manuscript, in Study 1b, participants in the many partners condition reported that they were significantly less ready to enter into a committed relationship than did those in the few partners condition, even after controlling for the one significant alternative manipulation check item, $F(1, 2) = 22.25$, $p < .001$. Further, this difference remained significant after controlling for all seven alternative manipulation checks, $F(1, 9) = 23.91$, $p < .001$, suggesting that the effect of the manipulation on commitment readiness emerged due to changes in participants' perceived alternatives, not other related constructs (e.g., perceived mate value, previous dating success). Finally, this difference remained significant after controlling for participants' gender in Study 1b, $F(1, 2) = 15.78$, $p < .001$.

Study 2

Results

Preliminary analyses revealed that men and women did not differ in their reports of commitment readiness, $t(72) = 1.03$, $p = .306$, $d = .26$.

Measures for Pilot Study

Intro Demographics

1. What is your age?
2. Are you currently in a romantic relationship?

Commitment Readiness

Please indicate how much you agree with each of the statements below.

1. Considering all of the factors in my life right now, I am receptive to being in a committed romantic relationship.
2. I am not ready to be in a committed relationship at this time.
3. I feel that this is the "right time" for me to be in a committed relationship.
4. I am not receptive to being in a committed romantic relationship.
5. I feel ready to be involved in a committed relationship.
6. Now is not the time for me to be involved in a committed romantic relationship.
7. Regardless of whether I am currently seeing someone, I see my being in a committed romantic relationship as a good thing for me now.
8. I do not feel particularly receptive right now to pursuing a committed romantic relationship.

Expected Alternatives/Getting' While the Getting's Good

Please indicate how much you agree with each of the statements below.

1. I won't be able to do much better if I waited longer to find a committed partner.
2. My dating possibilities won't improve by waiting for a future partner.
3. It will be more difficult later to find a suitable committed relationship.
4. I will have limited options for committed partners in the future.
5. Now is the time to "get it while the getting's good" regarding a committed relationship.
6. There is no rush to commit now to a relationship partner.
7. It will be easy enough to find a committed relationship partner later.

Measures for Study 1a

Screening Questions

1. Are you currently in a romantic relationship?
2. Please indicate the degree to which you agree with the following statement (“I am committed to maintaining my relationship with my partner.”) regarding your current relationship on a scale ranging from 1 (Do not agree at all) to 7 (agree completely).

Reading Check

“We are going to test your memory after reading the news articles presented. Please pay close attention as you read the articles.”

Article 1 – Filler article

1. What behavior do wolves exhibit that is also experienced in primates and dogs?
2. What university does the co-author, Teresa Romero, work at?
3. Do male or female wolves react more quickly to a yawn?

Article 2 – Underestimating/Overestimating article

1. Are people good or bad at estimating how many people they are compatible with?
2. What university does the researcher, Dr. Robert Finkel, work at?
3. Following a break up, do people have an easy time or hard time finding a new partner?

Number of Alternatives

“We are going to ask you questions about the people you list below. Please think carefully when identifying these individuals.”

Overestimating Article

Please list the initials of 7 people that you would start a relationship with.

Underestimating Article

Please list the initials of 1 person that you would start a relationship with.

Manipulation check

“How easy or difficult was it to generate 1 person (or 7 people) that you would be interested in starting a relationship with?” 1 = *extremely difficult*; 7 = *extremely easy*.

Relationship Satisfaction

Please indicate the degree to which you agree with each of the following statements regarding your current relationship. 1 = *Don't agree at all*, 4 = *Agree completely*.

1. My partner fulfills my needs for intimacy (sharing personal thoughts, secrets, etc.)
2. My partner fulfills my needs for companionship (doing things together, enjoying each other's company, etc.)
3. My partner fulfills my sexual needs (holding hands, kissing, etc.)
4. My partner fulfills my needs for security (feeling trusting, comfortable in a stable relationship, etc.)
5. My partner fulfills my needs for emotional involvement (feeling emotionally attached, feeling good when another feels good, etc.)

0 = *Do not agree at all*, 8 = *Agree completely*

6. I feel satisfied with our relationship.
7. My relationship is much better than others' relationships.
8. My relationship is close to ideal.
9. Our relationship makes me very happy.
10. Our relationship does a good job of fulfilling my needs for intimacy, companionship, etc.

Quality of Alternatives

Please indicate the degree to which you agree with each statement regarding the fulfillment of each need in alternative relationships (e.g., by another dating partner, friends, family). 1 = *Don't agree at all*, 4 = *Agree completely*.

1. My needs for intimacy (sharing personal thoughts, secrets, etc.) could be fulfilled in alternatives relationships
2. My needs for companionships (doing things together, enjoying each other's company, etc.) could be fulfilled in alternative relationships
3. My sexual needs (holding hands, kissing, etc.) could be fulfilled in alternative relationships

4. My needs for security (feeling trusting, comfortable in a stable relationship, etc.) could be fulfilled in alternative relationships
5. My needs for emotional involvement (feeling emotionally attached, feeling good when another feels good, etc.) could be fulfilled in alternatives relationships

0 = *Do not agree at all*, 8 = *Agree completely*

6. The people other than my partner with whom I might become involved are very appealing.
7. My alternatives to our relationship are close to ideal (dating another, spending time with friends or on my own, etc.).
8. If I weren't dating my partner, I would do fine—I would find another appealing person to date.
9. My alternatives are attractive to me (dating another, spending time with friends or on my own, etc.).
10. My needs for intimacy, companionship, etc., could easily be fulfilled in an alternative relationship.

Investment Size

Please indicate the degree to which you agree with each of the following statements regarding your current relationship. 1 = *Don't agree at all*, 4 = *Agree completely*.

1. I have invested a great deal of time in our relationship
2. I have told my partner many private things about myself (I disclose secrets to him/her)
3. My partner and I have an intellectual life together that would be difficult to replace
4. My sense of personal identity (who I am) is linked to my partner and our relationship
5. My partner and I share many memories

0 = *Do not agree at all*, 8 = *Agree completely*

6. I have put a great deal into our relationship that I would lose if the relationship were to end.
7. Many aspects of my life have become linked to my partner (recreational activities, etc.) and I would lose all of this if we were to break up.
8. I feel very involved in our relationship—like I have put a great deal into it.
9. My relationships with friends and family members would be complicated if my partner and I were to break up (e.g., partner is friends with people I care about).
10. Compared to other people I know, I have invested a great deal in my relationship with my partner.

Commitment

0 = *Do not agree at all*, 8 = *Agree completely*.

1. I want our relationship to last for a very long time.
2. I am committed to maintaining my relationship with my partner.
3. I would not feel very upset if our relationship were to end in the near future.
4. It is likely that I will date someone other than my partner within the next year.
5. I feel very attached to our relationships—very strongly linked to my partner.
6. I want our relationship to last forever.
7. I am oriented toward the long-term future of my relationship (for example, I imagine being with my partner several years from now).

Commitment Readiness

Please indicate how much you agree with each of the statements below. 0 = *completely disagree*, 8 = *completely agree*.

1. Considering all of the factors in my life right now, I am receptive to being in a committed romantic relationship.
2. I am not ready to be in a committed relationship at this time.
3. I feel that this is the “right time” for me to be in a committed relationship.
4. I am not receptive to being in a committed romantic relationship.
5. I feel ready to be involved in a committed relationship.
6. Now is not the time for me to be involved in a committed romantic relationship.
7. Regardless of whether I am currently seeing someone, I see my being in a committed romantic relationship as a good thing for me now.
8. I do not feel particularly receptive right now to pursuing a committed romantic relationship.

Mate Value Scale – Own Version

1=*Extremely undesirable*; 7=*Extremely desirable*.

1. Overall, how would you rate your level of desirability as a partner on the following scale?
2. Overall, how would members of the opposite sex rate your level of desirability as a partner on the following scale?

1=*Very much lower than average*; 7=*Very much higher than average*

3. Overall, how do you believe you compare to other people in desirability as a partner on the following scale?

1=Very bad catch; 7=Very good catch

4. Overall, how good of a catch are you?

Mate Value Scale – Partner Version

1=Extremely undesirable; 7=Extremely desirable.

1. Overall, how would you rate your partner's level of desirability as a partner on the following scale?
2. Overall, how would members of the opposite sex rate your partner's level of desirability as a partner on the following scale?

1=Very much lower than average; 7=Very much higher than average.

3. Overall, how do you believe your partner compares to other people in desirability as a partner on the following scale?

1=Very bad catch; 7=Very good catch.

4. Overall, how good of a catch is your partner?

Demographics

What is your gender?

How old are you?

What is your ethnicity?

What is your sexual orientation?

What is your religious affiliation?

How many months and/or years have you been with your current romantic partner?

What best describes your relationship with your current romantic partner?

Are you and your partner in an open relationship?

Do you have children?

Measures for Study 1b

Screening Questions

1. What is your age?
 - a. Less than 18 [ineligible]
 - b. 18-24
 - c. 25-34
 - d. 35-44
 - e. 45-54
 - f. 55-64
 - g. Greater than 65

2. Are you currently in a romantic relationship?
 - a. Yes [ineligible]
 - b. No

Reading Check

“You are now going to read two news articles. We are going to test your memory after reading the news articles presented. Please pay close attention as you read the articles.”

Article 1 – Filler Article

1. What behavior do wolves exhibit that is also experienced in primates and dogs?
2. What university does the co-author, Teresa Romero, work at?
3. Do male or female wolves react more quickly to a yawn?

Article 2 – Overestimating Article

Attention Check 1. Are people good or bad at estimating how many people they are compatible with?

- Good
- Bad [correct answer]
- Neither

1. What university does the researcher, Dr. Robert Finkel, work at?

Attention Check 2. Following a break up, do people have an easy time or hard time finding a new partner?

- Easy time
- Hard time [correct answer]
- Neither

Article 2 – Underestimating Article

Attention Check 1. Are people good or bad at estimating how many people they are compatible with?

- Good
- Bad [correct answer]
- Neither

1. What university does the researcher, Dr. Robert Finkel, work at?

Attention Check 2. Following a break up, do people have an easy time or hard time finding a new partner?

- Easy time [correct answer]
- Hard time
- Neither

Number of Available Partners

“Thank you for completing the first portion of the study. Now we are going to ask you a variety of questions in which you will identify individuals. We are going to ask you questions about the people you list below. Please think carefully when identifying these individuals.”

Overestimating Article

“Please list the initials of 7 people who you could start a relationship with.”

Underestimating Article

“Please list the initials of 1 person who you could start a relationship with.”

Manipulation Checks

1 = strongly disagree, 7 = strongly agree.

1. There are many attractive single people that live near me.
2. Most people have a lot of options when it comes to who they want to date.
3. I highly enjoy connecting and interacting with other people.
4. There are many desirable people who I could realistically start a romantic relationship with right now.*
5. I am a highly desirable romantic partner.
6. It's easy for me to find people who are single.
7. I currently have many attractive dating options available to me.*
8. In general, I have a large social network (i.e., friends, coworkers, family, etc.).
9. There are many people who I am currently interested in as a potential romantic partner, and who are also interested in me as a potential romantic partner.*
10. In the past, it hasn't been difficult for me to get a date.

*Direct manipulation checks for the IV

Attention Check 3

“In exactly 9 words, please describe what you have eaten in the past 24 hours”

Commitment Readiness

“Please indicate how much you agree with each of the statements below.” 0 = completely disagree, 8 = completely agree.

1. Considering all of the factors in my life right now, I am receptive to being in a committed romantic relationship.
2. I am not ready to be in a committed relationship at this time.
3. I feel that this is the “right time” for me to be in a committed relationship.
4. I am not receptive to being in a committed romantic relationship.
5. I feel ready to be involved in a committed relationship.
6. Now is not the time for me to be involved in a committed romantic relationship.
7. Regardless of whether I am currently seeing someone, I see my being in a committed romantic relationship as a good thing for me now.
8. I do not feel particularly receptive right now to pursuing a committed romantic relationship.

Attention Check 4

“What is the first thing that you imagine seeing if you looked up at the sky? Recent research suggests that it's important for people to pay attention while participating in research to

ensure the quality of the data. Thus, if you are paying attention, please disregard the above question, select the answer “Other”, and enter in the word “Horse”.

- Clouds
- Birds
- Airplanes
- Lightening
- Blue sky
- The sun
- Stars
- Other

Demographics

What is your gender?

How old are you? (please only include numeric value)

What is your ethnicity?

What is your sexual orientation?

What is your religious affiliation?

Measures for Study 2

Part 1

For the first portion of the study, participants will complete questionnaires to assess their perceived mate value, as well as demographic information.

Demographics

- What is your gender?
- How old are you?
- What is your ethnicity?
- What is your sexual orientation?
- What is your religious affiliation?

Mate Value Scale – Own Version

1=Extremely undesirable; 7=Extremely desirable.

1. Overall, how would you rate your level of desirability as a partner on the following scale?
2. Overall, how would members of the opposite sex rate your level of desirability as a partner on the following scale?

1=Very much lower than average; 7=Very much higher than average

3. Overall, how do you believe you compare to other people in desirability as a partner on the following scale?

1=Very bad catch; 7=Very good catch

4. Overall, how good of a catch are you?

Part 2

For the second portion of the study, participants will complete a variety of filler questionnaires (e.g., self-esteem, social self-efficacy), as well as a measure to assess commitment readiness, sociosexuality, romantic partner selectivity, and a manipulation check.

Commitment Readiness

Please indicate how much you agree with each of the statements below. 0 = *completely disagree*, 8 = *completely agree*.

1. Considering all of the factors in my life right now, I am receptive to being in a committed romantic relationship.
2. I am not ready to be in a committed relationship at this time.
3. I feel that this is the “right time” for me to be in a committed relationship.
4. I am not receptive to being in a committed romantic relationship.
5. I feel ready to be involved in a committed relationship.
6. Now is not the time for me to be involved in a committed romantic relationship.
7. Regardless of whether I am currently seeing someone, I see my being in a committed romantic relationship as a good thing for me now.
8. I do not feel particularly receptive right now to pursuing a committed romantic relationship.

Sociosexuality – Sociosexuality Orientation Inventory

1. How frequently do you think about sex? 1 = *virtually never*, 9 = *almost all of the time*
2. How often did you fantasize about having sex with someone other than your most recent dating partner? 1 = *never*, 8 = *at least once a day*

Please indicate how much you agree with each item below.

1 = *strongly disagree*, 9 = *strongly agree*

3. Sex without love is OK
4. I can imagine myself being comfortable and enjoying casual sex with different partners
5. I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her

Romantic Partner Selectivity

Please read each item and indicate how much you agree with each of the statements

below. 1 = *completely disagree*, 8 = *completely agree*.

1. I can still be happy with a romantic partner who does not fit my “ideal” type. (R)
2. I would never settle for a romantic partner who was not my perfect match.
3. I would rather be in a relationship with someone that is not a perfect fit than not be in a relationship at all. (R)
4. When getting to know new potential partners, I have a hard time finding people that possess all the qualities I need in a romantic partner.
5. I would define myself as picky when starting romantic relationships.
6. I have high standards for my romantic partners.
7. It is unrealistic to wait for a perfect partner. (R)
8. I treat relationships like clothing: I don’t want an item unless I get the perfect fit.
9. I do not date someone unless they have all the qualities I desire in a romantic partner.
10. I’m willing to accept characteristics or habits about my partner that do not align with what I would want in an ideal partner. (R)
11. I deserve the best in a romantic partner.

Filler Questions Included in the Second Portion of Study 2

1. When creating the dating profile, what did you focus on more?
 - a. The profile picture
 - b. The biographical information
 - c. Neither the profile picture nor the biographical information
 - d. Both the profile picture and the biographical information
2. When creating the dating profile, were you as true to yourself as possible? (i.e., the profile picture is an accurate picture of yourself, the biographical information is a true reflection of yourself)
 - a. Yes, both the profile picture and the biographical information was truly accurate of myself
 - b. Somewhat, only the profile picture was accurate of myself
 - c. Somewhat, only the biographical information was accurate of myself
 - d. No, neither the profile picture nor the biographical information was truly accurate of myself
3. Which of the following is most likely to fall from the sky?

- a. Houses (1)
 - b. Pigs (2)
 - c. Printer paper (3)
 - d. Rain (4)
 - e. Bridges (5)
4. If you were to evaluate a dating profile, what is most important to you?
- a. The profile picture
 - b. The biographical information
 - c. Neither the profile picture nor the biographical information
 - d. Both the profile picture and the biographical information
5. Why do you choose not to use a dating service? (select all that apply)
- a. People's profiles are inaccurate/there is a potential for catfishing
 - b. I am uncomfortable with meeting people online/it is dangerous
 - c. People just use dating services when they want a casual relationship, rather than a serious relationship
 - d. I would rather meet someone by chance
 - e. other

Rosenberg Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, fill in the circle below SA. If you agree with the statement, fill in the circle below A. If you disagree, fill in the circle below D. If you strongly disagree, fill in the circle below SD.

- 1 On the whole, I am satisfied with myself
- 2 At times, I think I am no good at all
- 3 I feel that I have a number of good qualities
- 4 I am able to do things as well as most other people
- 5 I feel I do not have much to be proud of
- 6 I certainly feel useless at times

- 7 I feel that I'm a person of worth, at least on an equal plane with others
- 8 I wish I could have more respect for myself
- 9 All in all, I am inclined to feel that I am a failure
- 10 I take a positive attitude toward myself

Social Self-Efficacy Scale

Please indicate how strongly you agree with each item on a 1 (strongly disagree) to 7

(strongly agree)

- 1. It is difficult for me to meet new potential romantic partners
- 2. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
- 3. If I meet someone interesting who is hard to get to know, I'll soon stop trying to pursue a relationship with that person.

Manipulation check: I find that potential romantic partners tend to like me

- 4. When I'm trying to get to know someone who seems uninterested at first, I don't give up easily.
- 5. I do not handle myself well in social gatherings.
- 6. I have acquired my friends and romantic partners through my personal abilities.