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Commitment and Romantic Alternative Monitoring

Abstract

This dissertation examines cognitive and behavioral factors involved in the management of potential alternative partners. Two studies are described here, each in a separate paper. The first study investigates perceptions of potential alternative partners as presented in an experimental paradigm (Study 1) and the second study examines links between alternative monitoring and relationship outcomes, measured longitudinally in survey research (Study 2). In the first study, *Perceptual Downgrading and Relationship Commitment*, I use a well-established paradigm to test a novel series of questions: Do individuals in committed relationships perceive attractive others as less attractive than single people do? This phenomenon is referred to as perceptual downgrading. I investigate if perceptual downgrading varies based on whether the alternative is presented as a threat to the current relationship, and if this phenomenon amplified for those who are happier in their relationship and/or more committed to their relationship. In the second study, *Alternative Monitoring, Infidelity, and Break-Up*, I evaluate whether and how alternative monitoring is linked with important relationship outcomes. There is strong theoretical rationale to expect that alternative monitoring would be associated with increased risk for both infidelity and relationship dissolution. However, the associations between alternative monitoring and these relationship outcomes remain unclear in the literature. Together, these two papers consider how alternative monitoring is associated with behavioral and cognitive processes underlying relationship maintenance and commitment. Future directions for research are identified, which focus on addressing limitations of these studies and expanding the knowledge base of alternative monitoring and other romantic relationship processes related to commitment. Clinical implications are also discussed, including considerations for couples with challenging circumstances related to alternative monitoring (e.g., instances of infidelity).

Document Type

Dissertation

Degree Name

Ph.D.

Department

Psychology

First Advisor

Howard J. Markman, Ph.D.

Keywords

Alternative monitoring, Potential alternative partners, Relationship longevity

Subject Categories

Experimental Analysis of Behavior | Psychology | Social and Behavioral Sciences

Publication Statement

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Commitment and Romantic Alternative Monitoring

A Dissertation

Presented to

the Faculty of Social Sciences

University of Denver

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Lane L. Ritchie

August 2019

Advisor: Howard J. Markman, Ph.D.

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Title: Commitment and Romantic Alternative Monitoring
Advisor: Howard J. Markman, Ph.D.
Degree Date: August 2019

ABSTRACT

This dissertation examines cognitive and behavioral factors involved in the management of potential alternative partners. Two studies are described here, each in a separate paper. The first study investigates perceptions of potential alternative partners as presented in an experimental paradigm (Study 1) and the second study examines links between alternative monitoring and relationship outcomes, measured longitudinally in survey research (Study 2). In the first study, *Perceptual Downgrading and Relationship Commitment*, I use a well-established paradigm to test a novel series of questions: Do individuals in committed relationships perceive attractive others as less attractive than single people do? This phenomenon is referred to as *perceptual downgrading*. I investigate if perceptual downgrading varies based on whether the alternative is presented as a threat to the current relationship, and if this phenomenon amplified for those who are happier in their relationship and/or more committed to their relationship. In the second study, *Alternative Monitoring, Infidelity, and Break-Up*, I evaluate whether and how alternative monitoring is linked with important relationship outcomes. There is strong theoretical rationale to expect that alternative monitoring would be associated with increased risk for both infidelity and relationship dissolution. However, the associations between alternative monitoring and these relationship outcomes remain unclear in the literature.

Together, these two papers consider how alternative monitoring is associated with behavioral and cognitive processes underlying relationship maintenance and commitment. Future directions for research are identified, which focus on addressing limitations of these studies and expanding the knowledge base of alternative monitoring and other romantic relationship processes related to commitment. Clinical implications are also discussed, including considerations for couples with challenging circumstances related to alternative monitoring (e.g., instances of infidelity).

ACKNOWLEDGEMENTS

I would like to acknowledge the participants who provided data by sharing their experiences. I express my sincere appreciation to Dr. Jesse Owen, Dr. Sarah Watamura, and Dr. Timothy Sweeny for providing valuable feedback in the development of this project. I extend a special thank-you to Dr. Galena Rhoades for consulting on this research, for leading by brilliant and elegant example, and for entrusting me with the projects that have become my passions. I am deeply grateful to my advisor, Dr. Howard Markman, who has provided robust training, innumerable opportunities, and unrelenting confidence in my abilities; the impact of his mentorship extends far beyond this project.

I would also like to acknowledge the comprehensive and unwavering support provided by Dr. Scott Stanley, without whom this project would not have been possible. Dr. Stanley's career is founded on producing rigorous and meaningful scholarly work; this project is only one example of his commitment to mentoring junior colleagues in pursuing the same. He invested countless hours and immeasurable thoughtfulness in mentoring me over several years as I developed and completed this project. Dr. Stanley demonstrates sound integrity, thorough scientific process, and intentional vulnerability; working together has indelibly enriched my career and has been a sincere pleasure.

This project emerged within the context of an exceptional experience at the Center for Marital and Family Studies. I thank Dr. Markman, Dr. Rhoades, and Dr. Stanley for their steadfast support, which is characterized by impeccable training and unparalleled professional cohesiveness. The impact of this support cannot be overstated; each subsequent mark of success in my career will be attributable to their investment in me. I am honored to be part of this research family.

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CHAPTER ONE: GENERAL INTRODUCTION

Commitment has been categorized in two broad dimensions: dedication, which involves prioritizing the relationship and intending for it to be long-term, and constraint, which includes factors that limit couples' ability to break up (Stanley & Markman, 1992). Commitment is integrally related to quality and availability of alternative partners. The extent to which individuals think about and interact with potential alternative partners while in a relationship is referred to as alternative monitoring, which has been measured as one component of dedication (Stanley & Markman, 1992). The monitoring of alternative partners is theorized to have important implications for relationship outcomes, including stability and fidelity.

There are several mechanisms that may underlie links between alternative monitoring and relationship outcomes. In the first paper, I examine one of these possible mechanisms (i.e., perceptual downgrading). In the second paper, I investigate how alternative monitoring is associated with significant relationship events (i.e., infidelity and break-up). A major contribution of this dissertation is that these two studies on alternative monitoring use very different methods, one focusing on a possible mechanism protecting commitment and the other evaluating behavioral outcomes related to commitment. Specifically, these two studies investigate (a) perceptions of alternative partners as presented in an experimental paradigm administered via the internet and (b) links between alternative monitoring and relationship outcomes, measured longitudinally in survey research.

In the first paper (Study 1), I use a well-established paradigm to test whether individuals in committed relationships perceive attractive others as less attractive than

single people do—a phenomenon referred to as *perceptual downgrading*. A previous study has found this pattern of results in a sample of undergraduate students, demonstrated in a laboratory-based, computer delivered perceptual task (Cole, Trope, & Balcetis, 2016). In the current study, I test whether this paradigm can successfully be adapted for internet-based administration outside of the laboratory, and I test whether perceptual downgrading occurs in a more heterogeneous sample, including adults with a wider range of ages and sexual orientations. Perceptual downgrading is one possible mechanism that may explain links between alternative monitoring and relationship stability and fidelity, which is the focus of the second paper. For example, perceptual downgrading may function to protect commitments that individuals have made, in the midst of attractive alternatives.

In the second paper, I use a data from a national, longitudinal sample to investigate links between changes in alternative monitoring over time and relationship outcomes. Although the theoretical base predicting these associations is strong, no studies have demonstrated a clear effect. Specifically, I test whether there are differences in alternative monitoring between those who break up and those who do not, and between those who report infidelity and those who do not. I also test whether changes in alternative monitoring over time, within the same relationships, precede these two relationship outcomes. The second paper also includes an investigation of whether constraint commitment—factors that make it difficult for couples to break up—is associated with whether people remain in the relationship following infidelity.

Together, these projects consider how alternative monitoring is associated with behavioral and cognitive processes underlying relationship maintenance and commitment. The first study investigates one possible mechanism for these relationship processes, and the second study focuses on relevant behavioral outcomes. As discussed in each paper and in the general discussion, these studies identify future directions for basic science and applied research on the role of commitment processes. Additionally, these findings can inform prevention and intervention efforts aimed at improving relationship quality and stability.

CHAPTER TWO:
PAPER 1: PERCEPTUAL DOWNGRADING AND RELATIONSHIP
COMMITMENT¹

¹ Manuscript to be submitted for publication with coauthors Scott M. Stanley, Ph.D., Galena K. Rhoades, Ph.D., and Howard J. Markman, Ph.D.

Abstract

Committing to a romantic partner typically includes a decision—or series of decisions—to give up other romantic options (Stanley, Rhoades, & Whitton, 2010). However, individuals continue to encounter alternative partners and must manage those interactions and attractions. Consequently, monitoring alternatives is considered an important mechanism whereby relationship maintenance may be undermined (e.g., Stanley & Markman, 1992; Thibaut & Kelley, 1959). This study replicates analyses from a laboratory-based study of perceptual downgrading (Cole et al., 2016) and examines whether perceptual downgrading occurs more strongly for those who score higher on measures of self-reported relationship happiness and relationship commitment. Participants were 242 adults who participated in an internet-based study. ANOVAs were used to investigate the hypothesized interactions and main effects. The hypotheses were not supported, as results were not consistent with a significant perceptual downgrading effect. There were also no significant differences by self-reported relationship happiness or commitment. Methodological differences between the current study and prior studies are explored, which may partially account for differences in findings. Future directions are identified, including recommendations for the use of within-person experimental designs.

Background

Sustaining a long-term healthy relationship is associated with many individual and social benefits, including superior physical and mental health (House, Landis, & Umberson, 1988), better wellbeing (Dush & Amato, 2005), and better parenting abilities (Hawkins, Amato, & Kinghorn, 2013). Relationship stability is strongly predicted by self-reported commitment to the relationship (Impett, Beals, & Peplau, 2001; Le, Dove, Agnew, Korn, & Mutso, 2010), even when controlling for dyadic adjustment (Stanley et al., 2016). Because relationship quality and stability are linked with a range of personal, social, and economic benefits, this study aims to explore the processes by which commitment is maintained over time within romantic relationships. Theory and empirical evidence suggest that psychological mechanisms may function to ward off potential relationship threat (Gonzaga, Keltner, Londahl, & Smith, 2001). There are at least two ways that individuals could maintain commitment to one partner, given that there are other potential partners in the world: (a) reducing the amount of attention paid to alternatives and (b) minimizing the perceived attractiveness of alternatives.

Commitment has been conceptualized as making a decision to give up other options (Stanley, Rhoades, & Whitton, 2010). However, once an individual has made a commitment to one partner, the individual does not cease to encounter other potential partners. Indeed, the individual continues to encounter alternative partners and must manage those interactions and attractions. Monitoring alternatives is considered an important mechanism whereby relationship maintenance may be undermined (e.g., Stanley & Markman, 1992; Thibaut & Kelley, 1959). Thus it is important to study the mechanisms that both support and hinder the management of alternatives (i.e.,

understanding how individuals perceive and engage with alternative partners).

Longitudinal studies show that, as commitment increases over time, individuals consider the quality of alternatives to be decreasing (Rusbult, 1983). Further, higher levels of commitment are associated with less awareness of—or serious monitoring of—alternatives (Johnson & Rusbult, 1989; Stanley, Markman, & Whitton, 2002).

Consistent with the literature on alternative monitoring, one strategy that helps partnered individuals maintain high levels of commitment is decreasing attention to attractive others. There is evidence that those in a relationship pay less attention to attractive others than single people do (e.g., Maner, Rouby, & Gonzaga, 2008). Additionally, studies of attention to alternatives have identified that, among those in a relationship, there appear to be differences depending on characteristics of the relationship. For example, relationship satisfaction has been identified as an important variable to consider. One study measured the amount of time that individuals spent viewing images of attractive faces (Miller, 1997). The results showed that those who were less satisfied in their current relationships chose to spend more time viewing images of attractive people than those who were more satisfied in their relationships (Miller, 1997). Of course, the direction of causality has not been established, and there is strong rationale to expect causality in each direction. In one direction of explanation, those who pay more attention to alternatives may focus on positive attributes of the alternatives in a way that undermines their satisfaction with the current partner by identifying ways in which the romantic alternatives may be better than their current partner (Niehuis, 2005). Or, those who already have lower relationship satisfaction pay more attention to alternatives, potentially with the intent to find a new partner. Conversely, having greater

relationship satisfaction may make it less likely that someone attends to attractive alternatives. In summary, research provides evidence that those in relationships tend to pay less attention to attractive others than single people do, and those in more satisfied relationships pay less attention to attractive others than those in less satisfied relationships. However, there has not been much research focusing on variability in levels of commitment, among those who are in romantic relationships. It may be that degree of commitment also matters, with nuances related to different dimensions of the construct.

The studies described above examined attention to alternatives, which is the first strategy used to minimize threat. The second strategy that individuals use to minimize threat to the relationship is deemphasizing the attractiveness of alternative partners (Johnson & Rusbult, 1989). One study found that eliciting feelings of love in participants, by asking them to write about love for their partner, temporarily decreased the amount that they thought about a photo of an attractive person to which they were exposed afterward (Maner et al., 2008). Participants who had written about feelings of love for their partner also demonstrated poorer memory for details about what characteristics were attractive about the alternative, compared to those who were assigned to the control group. In fact, it has been suggested that deemphasizing the overall attractiveness of alternative partners relative to someone's own partner could be used as a conscious strategy to strengthen commitment within the context of therapy (Stanley, Lobitz, & Dickson, 1999). This strategy could likewise be applied in other contexts outside of therapy.

The strategy just described is a conscious one, but there may be elements of devaluation that occur outside of conscious processing. When faced with images of

attractive people, those in committed relationships rate the attractive others as less attractive than single people do (e.g., Johnson & Rusbult, 1989; Lydon, Fitzsimons, & Naidoo, 2003; Ritter, Karremans, & Van Schie, 2010). Initially, it had been thought that this effect may occur due to reporting bias, such that partnered and single individuals perceive attractive targets as equally attractive, but partnered individuals purposely temper their responses in a way that they believe to be socially desirable. That is, social desirability could account for differences in attractiveness ratings provided by partnered individuals compared to single individuals. However, recent work has implemented methodology that does not rely on self-reported attractiveness of the target, and findings do not support the social desirability explanation for such effects. Mangini and Biederman (2004) developed a paradigm to estimate the internal mental representations that individuals held of a target face. As part of this method, participants do not provide any direct ratings of attractiveness—or any other characteristic—of the target image. Instead, participants are asked to select the image that they believe best matched the target face from a series of several pairs of face images. All of the options reflect the same base face, but with variation superimposed onto the images. Through this process including several pairs of face images, participants arrive at a version of the face that most closely approximates their memory of the face. Karremans, Dotsch, and Corneille (2011) used this same methodology to investigate differences in memory of attractive faces by partnered and single individuals. This gets around the problem of potential bias in self-reported attractiveness. In this study, participants were asked to select the image that they believed best matched the target face from a series of several pairs of faces that had slight variability in attractiveness. This process yielded a final face image, reflecting

each participant's internal mental representation of the target face. These faces were then rated for attractiveness by independent raters (Karremans et al., 2011). Findings from this study suggest that those in romantic relationships actually perceive attractive others as less attractive and consequently encode memories for attractive others as less attractive than single people. Thus, their results provided support for the explanation that the bias in partnered individuals occurs at the level of perception or memory rather than at the level of reporting. This phenomenon is referred to as *perceptual downgrading*.

In a follow-up study, Cole, Trope, and Balcetis (2016) implemented a paradigm also aimed at measuring perceptual downgrading. This study aimed to distinguish between memory and perception by using a modified version of a paradigm that had initially been developed by Epley and Whitchurch (2008). In this paradigm, images of participants' own faces were morphed into 11 versions ranging from less attractive to more attractive (Epley & Whitchurch, 2008). Cole et al. (2016) used this same morphing procedure, but with a set of target faces rather than participants' own faces, and then used these faces in what they call a Visual Matching Task. Hence, their task utilized an array of faces whereas Mangini and Biederman (2004) presented a series of choices between two faces at a time. Cole et al. (2016) presented the target face, along with an array of 11 faces that were morphed to be more or less attractive to varying degrees. Participants were then instructed to select which face matched the target face, choosing among the 11 faces. They found that those in relationships, compared to those not currently in a relationship, consistently selected versions of the face that were morphed to be less attractive, as rated by independent raters (Cole et al., 2016). In both studies just described, the paradigms did not rely on participants own reports of the target's

attractiveness; as such, the results serve as evidence that perceptual downgrading occurs at the level of perception, rather than reflecting differences in self-report attributable to social desirability.

In line with the theory presented earlier about alternative monitoring, attractive targets should be more threatening than less attractive ones, and targets who are romantically available should be the most threatening to those in existing relationships. Consistent with this hypothesis, Cole et al. (2016) found that those in committed relationships who were presented with a target they were told was romantically available demonstrated the strongest perceptual downgrading. That is, those in committed relationships perceived the attractive target as less attractive than those who were single, especially when the target was presented as romantically available (i.e., highly threatening to the relationship). Perceptual downgrading was also strongest for those with higher relationship satisfaction, compared to those with lower relationship satisfaction, consistent with findings from Miller's study (1997) regarding attention.

The Cole et al. (2016) study found differences between those in relationships and those who were single, though the sample was fairly homogeneous with regard to sexual orientation and college enrollment status. The manuscript did not report participants' ages, though presumably they were young; they were university undergraduates. In order to investigate the robustness of this effect, as well as its generalizability across the general adult population, it is necessary to replicate the finding in a more heterogeneous sample of adults with a range of romantic relationship commitment. For example, it is important to know whether perceptual downgrading effects emerge among individuals more broadly than undergraduates within one university (e.g., Cole et al., 2016).

Current Study

Self-report measures of commitment have considered monitoring alternatives to be a sign of low commitment. For example, the degree to which individuals focus on romantic alternatives is included in some self-report measures of dedication (e.g., Stanley & Markman, 1992). The studies described above suggest that cognitive processes such as attention, perception, and memory may be involved in how people deal with attractive alternatives. Therefore, findings from self-report measures of romantic relationship processes can be bolstered by also studying these processes using methodology from cognitive psychology (e.g., Lydon et al., 2003; Karremans et al., 2011). Cognitive methodology is well equipped to differentiate between differences in perception versus biases in explicit reporting. Thus, although several important discoveries about alternative monitoring and commitment have emerged in recent years, the relationship research field would benefit from incorporating knowledge built from cognitive methods to gain a better understanding of the mechanisms underlying perceptual downgrading. The current study utilizes the Visual Matching Task to investigate perceptual downgrading in a study that also utilizes widely used self-report measures of relationship commitment.

The current study makes adaptations for internet-based administration of the Visual Matching Task as used by Cole et al. (2016). By using broad recruitment and internet-based administration of the Visual Matching Task, the current study builds on previous findings by extending the methodology to be delivered using internet-based administration and recruiting a more heterogeneous sample of adults than has been used in the prior laboratory-based studies. It also combines the use of an assessment of

perceptual downgrading as an objectively scored measure of alternative monitoring, along with self-reported measurement of several dimensions of relationship commitment.

This study has two major aims: First, we replicate analyses conducted by Cole et al. (2016) from their laboratory-based study using an internet-based administration of the task. Second, because this study also includes various measures of self-reported commitment, we examine whether perceptual downgrading occurs more strongly for those who score higher on measures of self-reported relationship happiness and relationship commitment. Based on findings from the Cole et al. (2016) study, we hypothesized a main effect of relationship status consistent with perceptual downgrading, such that those in relationships would perceive the target as less attractive than those who are single (H1). Also, based on studies such as Johnson and Rusbult (1989) and findings from Cole et al. (2016), we hypothesized that the effect would be moderated by level of target threat, which was manipulated experimentally (H2). Specifically, we hypothesized that perceptual downgrading would be strongest for those in relationships who were presented with a high-threat target. Additionally, we hypothesized moderation by self-reported relationship happiness (H3) and commitment (H4), such that those reporting the highest relationship happiness and the highest commitment would demonstrate the strongest perceptual downgrading effects.

Method

Participants

Participants were 242 adults between the ages of 18 and 34 years old (M age = 24.98 years, $SD = 4.96$). The sample included 46% women, 54% men, and one individual who did not identify within the gender/sex binary (i.e., “genderfluid”). The breakdown by

race was: 17% Asian, 3% American Indian or Alaska Native, 4% Black or African American, 3% Native Hawaiian or Pacific Islander, 57% White, and 7% who endorsed a race not listed (e.g., Lebanese, Pakistani, Slavic). In terms of ethnicity, 14% of the sample was Hispanic or Latino/a. In terms of sexual orientation, 64% were heterosexual, 13% were bisexual, 5% were gay/lesbian, and 2% had a sexual orientation other than the orientations listed (e.g., asexual, pansexual). These numbers do not add up to 100% because 16% of participants did not reach the end of the questionnaire where there were some specific demographic items, including this question about sexual orientation.

Procedure

This study received approval from the university's Institutional Review Board. A variety of recruitment techniques were used. General advertisements invited adults between the ages of 18 and 34 years to participate in a study about social relationships ("including family members, friends, co-workers, and romantic partners"). This age range was selected in order to provide a more heterogeneous sample of adults (i.e., not limited to only undergraduate students), and in keeping consistent with large studies of romantic relationships (e.g., Rhoades et al., 2010).

Participation took place online using Qualtrics survey software. After reading the informed consent form, participants completed a short questionnaire. Participants were not required to provide any identifying information, but had the option of providing their email address in order to be entered into a drawing for one of several \$50 Starbucks gift cards. After answering a few basic questions, participants completed the Visual Matching Task based on the procedure outlined by Cole and colleagues (2016; see Visual Matching Task section below for details).

As part of this task, participants viewed a social networking profile belonging to a target of the gender to which they report being primarily attracted. This profile information included a photo of a target face that had been rated in previous work as above average in attractiveness (see Cole et al., 2016 for details). Stimuli for this study included three different target faces of each apparent gender (i.e., three apparent men and three apparent women). Each participant was randomly presented with only one of the three photos, according to the gender to which they reported mostly being attracted. For example, participants who reported being primarily attracted to men were randomly assigned to view one of the three apparent target men. Each participant saw only one social networking profile, with only one target face. All of the social networking profile information provided was consistent across participants, with the exception of the experimental manipulation of level of target threat in which the target's interest in dating was randomly assigned (see Target Threat section below for details).

After viewing the social networking profile, participants were given a brief quiz about the profile information, including questions like "What is the person's name?" and "Is the person single or in a relationship?" The primary purpose of the quiz was to provide a check that participants were generally paying attention to the information provided as part of the social networking profile. In this way, the questions were meant as a manipulation check. This quiz also included the Visual Matching Task, during which each participant selected which face they believed was correct from 11 possible options differing in attractiveness (see Visual Matching Task section below for details). In order to increase motivation for providing accurate answers, an accuracy incentive was offered (i.e., participants were told that they would be entered into an additional drawing for a

gift card if they selected the correct face). Following the completion of the Visual Matching Task, participants completed the remaining questionnaire items, including the measures described below and other measures not used in the current analyses.

Measures

Visual Matching Task. Scores on the Visual Matching Task were used to measure perceptual downgrading. When each participant viewed the target face as part of the social networking profile, they always viewed the base image of the face (i.e., the stimulus face was not morphed to be more or less attractive). When completing the Visual Matching Task, each participant was presented with 11 options and was asked to choose which face correctly matched the target's face. These arrays of 11 faces were composed by Cole and colleagues (see Cole et al., 2016 for pilot testing data establishing validity). Participants were instructed to choose which of the 11 faces correctly matched the target's face. Cole and colleagues created each series of 11 faces by morphing the base face to appear less attractive (reflected by lower % values) and more attractive (reflected by higher % values). Five of the faces are the base face morphed together with a less attractive face, in increasing increments, and reflected by values ranging from -7% to -50%. One of the faces is the correct face, and the other five faces are the base face morphed together with a more attractive face, in increasing increments, reflected by values ranging from 7% to 50%.

Scores on the Visual Matching Task were coded according to the amount of attractive or unattractive face that was morphed into the face that each participant selected. For example, a participant who selected a face that was morphed with 7% of an attractive face would have a score of 7% for the task. A participant who selected the

correct face would have a 0% score for the task. Any score besides 0% indicates that the participant selected an incorrect target face. Positive scores indicate that participants selected a face morphed to be more attractive than the base face, and negative scores indicate that participants selected a face morphed to be less attractive than the base face. Scores ranged from -50% (least attractive photo; highest degree of perceptual downgrading) to 50% (most attractive photo; least degree of perceptual downgrading). Within each target gender, three different photos were used. In other words, there were a total of six target faces used across all participants. The same morphing procedure was conducted for each face, such that each face was morphed together with a less attractive face and a more attractive face, in increasing increments.

This task, including the face stimuli, demonstrated construct validity in a pilot study conducted by Cole et al. (2016). Specifically, they showed that when participants were presented with the array of 11 faces and asked which face they preferred, participants consistently chose the faces that were morphed with an attractive face. It was not common for participants to choose the base face or faces that were morphed with an unattractive face. In the Cole et al. (2016) pilot study, participants selected faces with a value of 33% on average ($SD = 24.81$) on the scale from -50% to +50%. Cole et al. (2016) note that when indicating their preference, participants made comments about the faces being different from one another, but were not aware that these differences were related to attractiveness. This pilot study demonstrated that participants notice that there are differences between the 11 faces, and they express preferences for more attractive faces, but participants do not seem to notice that the differences between the 11 faces are related to attractiveness.

Target threat. Level of target threat was manipulated by presenting the target in the profile as interested in dating or not interested in dating. All participants were randomly assigned to either the high-threat or low-threat condition. In the low-threat condition, the target is described as romantically unavailable (i.e., “Nah, I’m not interested [in dating] right now”). In the high-threat condition, the target is described as romantically available (i.e., “Yes, I’m interested in dating!”). This is consistent with the manipulation of target threat used by (Cole et al., 2016). However, the Cole et al. (2016) procedure involved telling participants that the profile information and target face were submitted by another participant, who was present elsewhere in the laboratory. Because this study was conducted online and not in a physical laboratory space, we could not use this same instruction. In order to try to achieve a similar effect, we told participants that they would be provided with a social networking profile. To attempt to increase the perceived relevance of this information, we told participants that afterward, we would ask them whether they would be interested in meeting up with this person.

Relationship commitment. Eight items from the Revised Commitment Inventory (Owen, Rhoades, Stanley, & Markman, 2011; cf. Stanley & Markman, 1992) were used to measure dedication commitment. Participants responded to items on a seven-point scale from “*strongly disagree*” to “*strongly agree*.” Example items include “I want this relationship to stay strong no matter what rough times we encounter” and “My relationship with [partner] is clearly part of my future life plans” This scale has demonstrated strong validity and reliability (Owen et al., 2011). The mean of the dedication subscale reflects level of dedication, which was 5.46 ($SD = 1.32$) in the current sample. The Chronbach’s alpha in this sample was .91. In analyses testing for moderation

by relationship commitment, we used a median split, such that those who reported relationship commitment at or above 5.00 were categorized as having high commitment, and those with scores below 5.00 were categorized as having low commitment.

Alternative monitoring. In order to measure the extent to which individuals pay attention to romantic alternatives, the questionnaire also included five items of Alternative Monitoring from the original Commitment Inventory (Stanley & Markman, 1992). Items such as “I know people whom I desire more than [partner]” were rated on a seven-point scale from “1” = “*strongly disagree*” to “7” = “*strongly agree*.” All five of these items are listed in Table 1, along with their means and standard deviations in the current sample. Higher scores indicate a higher level of monitoring alternatives. The Chronbach’s alpha for these five items was .81, and the mean level of alternative monitoring reported by participants was 2.64 ($SD = 1.42$).

Alternative availability. Six items from the original Commitment Inventory (Stanley & Markman, 1992) were used to measure alternative availability. Items such as “I would have trouble finding a suitable partner if this relationship ended” were rated on a seven-point scale from “1” = “*strongly disagree*” to “7” = “*strongly agree*.” All six of these items are listed in Table 2, along with their means and standard deviations in the current sample. For this subscale, we scored items in the opposite direction that the commitment inventory uses, such that higher scores indicate a higher level of available alternatives (and not higher level of constraint). These six items demonstrated a Chronbach’s alpha of .72. The mean level of alternative availability reported in the current sample was 4.51 ($SD = 1.01$).

Relationship happiness. A single item was used to measure relationship happiness on a seven-point scale from “0” = “*extremely unhappy*” to “6” = “*perfectly happy*.” For those in the current sample who were in a relationship, the mean level of happiness was 4.02 ($SD = 1.25$). A one-item measure was used for both brevity in the questionnaire administration time and to assure that what was measured was purely about relationship happiness and not other constructs such as commitment. This single item demonstrated construct validity in the current study. Convergent validity is demonstrated by correlations with other measures of relationship characteristics in the expected directions (i.e., significant positive correlation with dedication and significant negative correlation with alternative monitoring). Divergent validity is demonstrated by this item not correlating with a self-report measure of a construct that would not be theoretically expected to correlate (i.e., alternative availability). We used a median split, such that those with relationship happiness scores of 4.00 or above were categorized as having high happiness, and those with happiness scores below 4.00 were categorized as having low happiness.

Results

Descriptive Statistics

In terms of relationship status, 57% were single, 7% were seeing only one person on a regular basis but did not consider themselves to be “in a relationship,” 19% endorsed being “in a relationship,” 3% were engaged, and 15% were married. For analyses with a dichotomous relationship status variable, we collapsed these categories such that those who were seeing one person regularly, those who identified as “in a relationship,” those

who were engaged, and those who were married were all characterized as being in a relationship (versus single).

Of those who were in a romantic relationship of some kind, relationship length ranged from less than one month to 14 years (*Mdn* = 4 years). Self-reported relationship characteristics were significantly correlated in the expected directions. Alternative monitoring was significantly negatively correlated with dedication ($r = -.54$) and with relationship happiness ($r = -.41$). Dedication and happiness were significantly positively correlated ($r = .55$). Scores on the Visual Matching Task did not correlate with any of these self-report measures. There were no gender differences in the pattern of these correlations or in the significance of these correlation tests. See Table 3 for correlations among these key study variables.

Regardless of the participant's own gender/sex, they were presented with a target based on the gender to which they reported being primarily attracted, with 52% of the sample primarily attracted to women and 48% of the sample primarily attracted to men.

Experimental Manipulation Checks

After viewing the social networking profile, each participant completed a brief series of quiz questions about the profile. These questions were meant to disguise the Visual Matching Task as just one of many questions about the profile they had seen. The quiz questions may also serve as a proxy for engagement in the task, such that those who paid attention to the profile information should be able to answer the quiz questions. Those who are not able to answer the quiz questions may not have paid adequate attention to the profile information, including the target face and the threat manipulation. Of the 242 participants who completed the Visual Matching Task, 13 left the quiz

questions blank. For this reason, we completed analyses with and without those who left these quiz questions blank. Omitting these participants did not alter the pattern of results. Because lack of attention to the task is only one potential reason why these 13 participants may have left these questions blank, the final analyses presented here include these participants.

In order for the task to be a valid measure of perceptual downgrading, it is important that the target faces were generally perceived as attractive. In previous work, these target faces have been independently rated as above average in attractiveness (Cole et al., 2016). It is also important to ensure that the target faces were generally perceived as attractive by participants in the current sample. See Table 4 for descriptive statistics of scores on the Visual Matching Task for each of the three target faces used, reported separately by relationship status. Before proceeding to test the hypotheses, we first tested whether any specific target faces were perceived as more or less attractive than other target faces, using an ANOVA with relationship status and target face as the independent variables and scores on the Visual Matching Task as the dependent variable. A significant main effect of target face would indicate that there were differences in perceived attractiveness among the three different target faces used for each gender, such that all three target faces of a particular apparent gender were not consistently perceived as similarly attractive across participants. Because differences in perceived attractiveness are expected to occur based on the study hypotheses, we also tested for interactions between target face and relationship status. An interaction between target face and relationship status would indicate that there were differences in perceived attractiveness among the three different target faces used, such that all three target faces of a particular

apparent gender were not consistently perceived as similarly attractive among participants of a particular relationship status.

Results from these ANOVAs identified one significant difference. For the target men's faces, there was no significant interaction between the specific target face and relationship status, $F(2,110) = 0.004, p = 1.00$. There was also no main effect of target face, $F(2,110) = 2.03, p = .14$. However, for target women's faces, there was a significant interaction between target face and relationship status, $F(2,120) = 3.65, p = .03$. Among single people, there were no significant differences between scores on the Visual Matching Task for the three target faces. However, among those in a relationship, there was a trend for significant differences across the three target faces, $F(2,37) = 2.60, p = .09$. Post hoc tests showed that among those in a relationship, the third target woman was perceived as more attractive than the first target woman, $p = .04$ and there was a trend for the third target woman to be perceived as more attractive than the second target woman, $p = .06$.

Although this difference reached only trend-level significance, there is potential concern about whether the test functioned similarly for participants in a relationship, depending on which of the three target women they were presented with. Because there is some evidence that one of the faces was perceived as more attractive than the others by participants in a relationship, we ran all analyses using only the subset of the sample who received the other five target faces (i.e., excluding those who received the third target woman). The pattern of results was similar. Therefore, we present analyses below using data from the full sample.

Tests of Hypotheses: Relationship Status and Target Threat

Based on findings from Cole et al. (2016), we hypothesized that there would be significant main effects of relationship status (H1) and a significant interaction between relationship status and target threat (H2). Therefore, we conducted a 2 (participant relationship status: single vs. in a relationship) x 2 (level of target threat: low vs. high) ANOVA predicting scores on the Visual Matching Task. A main effect of relationship status would indicate that there is a difference between those who were single and those who were in a relationship on perceptions of the target's attractiveness. A main effect of target threat would indicate a significant difference between those assigned to the high-threat condition and those assigned to the low-threat condition. An interaction between relationship status and target threat would indicate that differences by relationship status in scores on the Visual Matching Task depend on the level of target threat.

Based on Cole et al. (2016)'s findings, we predicted that perceptual downgrading would be strongest for those who are in a relationship and encounter a target that threatens the relationship by being interested in dating. This hypothesis was not supported. The interaction between relationship status and target threat was not significant, $F(1,238) = 0.003, p = .95$. There were also no main effects of relationship status, $F(1,238) = 0.31, p = .58$, or level of target threat, $F(1,238) = 0.10, p = .75$.

Tests of Hypotheses: Self-Report Relationship Characteristics

In addition to the main prediction that perceptual downgrading would be strongest for those in relationships who encounter a high-threat target, we investigated whether scores on the Visual Matching Task differed by self-reported relationship happiness and commitment. We hypothesized that perceptual downgrading would be strongest for those

in happier relationships (H3) and more committed relationships (H4). In order to test this, ANOVAs were conducted among only those who were in a relationship. Self-reported relationship happiness and commitment were entered as independent variables (2 levels of self-reported commitment: high commitment, low commitment, 2 levels of happiness: high happiness, low happiness). In each of these analyses, the experimentally manipulated level of target threat was also entered as an independent variable (2 levels: high threat, low threat). Based on findings from Cole et al. (2016), perceptual downgrading would be expected to be strongest for those in happier relationships who are randomly assigned to the high-threat condition. Additionally, we hypothesized that perceptual downgrading would be strongest for those who self-report having higher commitment and are randomly assigned to the high-threat condition.

Among those in relationships, we tested whether there was an interaction between target threat and relationship happiness or an interaction between target threat and commitment. ANOVAs did not reveal a significant interaction between level of target threat and relationship happiness, $F(1,95) = 0.17, p = .68$. There was also no significant interaction between level of target threat and relationship commitment, $F(1,93) = 0.09, p = .73$. Main effects of relationship happiness and commitment were also not significant.

Exploratory Analyses

Exploratory analyses were also conducted in order to investigate potential moderation by self-reported alternative monitoring and alternative availability. Specifically, among those in relationships, we explored whether there was an interaction between target threat and self-reported alternative monitoring or an interaction between target threat and self-reported availability of alternatives. ANOVAs did not reveal a

significant interaction between level of target threat and alternative monitoring, $F(1,89) = 0.71, p = .40$. There was also no significant interaction between level of target threat and alternative availability, $F(1,87) = 0.05, p = .83$. Main effects of alternative monitoring and alternative availability were also not significant.

The sample for the current study was intentionally more heterogeneous than the sample recruited by Cole et al. (2016), which included only heterosexual undergraduates. Because previous studies on this topic have been conducted with heterosexual samples, we also examined whether there was support for the hypotheses when the sample was limited to heterosexual participants only. In this series of tests, the hypotheses were similarly not supported.

Discussion

The current study investigated perceptual downgrading using a paradigm that was most recently refined by Cole et al. (2016). Data were collected from individuals who were either in a romantic relationship or were single, and measures of self-reported relationship happiness and commitment were also collected. We hypothesized an interaction between relationship status and level of target threat, such that individuals in relationships who were presented with a high-threat target would demonstrate the strongest perceptual downgrading. We also hypothesized moderation by self-reported relationship happiness and commitment. The internet-based procedure provided an opportunity to replicate the tests of perceptual downgrading findings from prior work.

In the current sample, self-report measures of relationship characteristics demonstrated significant correlations in the expected directions, consistent with previous studies of romantic relationships. The hypotheses were not supported; results were not

consistent with a significant perceptual downgrading effect based on relationship status or target threat level. We also conducted analyses to investigate whether scores on the Visual Matching Task differed significantly by self-reported relationship happiness and commitment, and whether these relationship characteristics demonstrated an interaction with target threat on scores on the Visual Matching Task. These analyses did not reveal any significant interactions or main effects.

One limitation is that the online procedure employed here may not have effectively manipulated the level of target threat. In the Cole et al. (2016) study, participants were told that the social networking profile information was provided by another participant, who was also present in the laboratory. Here, rather than having participants come into the laboratory where they could be told that the target is another participant who is present in the next room, participants in the current study were simply told that they would be viewing someone's social networking profile. It is possible that this information was less salient or less relevant for participants in our study using these modified instructions. These changes significantly altered the procedure, such that the manipulation of target threat may not have been as effective as it had been in the Cole et al. (2016) study. This procedural difference may be one reason contributing to lack of significant findings regarding level of target threat.

In addition to these key procedural changes, there were further intentional differences in the sample recruitment for the current study. The sample used in the Cole et al. (2016) study consisted of university undergraduates who identified as heterosexual. The current sample was recruited more broadly in order to reflect diversity in the population. For example, participants in the current study were older, ranging up to 34

years old and with a mean age of 25 years old. The current study also recruited participants of any sexual orientation, and there was no attempt made to target recruitment such that any sexual orientation would be over-recruited. In order to determine which target gender would be presented to each participant, the participant answered whether they are primarily attracted to men or women. There were no theory-driven hypothesis predicting differences by age or sexual orientation; however, there was greater heterogeneity in the current sample compared to the Cole et al. (2016) sample, which may partially explain differences in the pattern of results. All in all, the sample used here is larger and more heterogeneous than that used in the previous study. It could be that the procedure simply works better in a laboratory setting on a campus or that it may work better with undergraduates and/or younger people.

Another limitation of the procedure developed by Cole et al. (2016) and used here is that attractiveness is primarily examined with regard to faces. This results in a need for caution with regard to generalizability. In daily life, individuals experience the physical attractiveness of others in multiple domains (e.g., features of the body, hair styles, clothing styles, as well as the face). Furthermore, attractiveness of alternatives includes many more factors beyond physical attractiveness (e.g., personality characteristics, social behavior). Although the current methodology includes a small amount of written social networking profile information for the targets, in addition to facial images, the attractiveness of this profile information is not manipulated. Attractiveness of others, as experienced in real-life settings, is likely much more complex than any of these methodologies can address in studies such as this one.

Future Directions

The current study also identifies several directions for future research investigating perceptual downgrading. For example, the current study used a between-person experimental design, with each participant viewing only one social networking profile. As such, each participant was randomly assigned to the high- vs. low-threat condition only once. The administration of this task online could provide an opportunity to conduct multiple trials using a within-person experimental design, which would have more statistical power. Using a laboratory-based design, it would not have been believable from the participants' perspective to conduct multiple trials. That is, participants would not have believed that several other participants were also present in the laboratory. However, adaptations made to this online procedure could allow for multiple trials, without the participants doubting whether the instructions were believable. Instead of each participant viewing only one social networking profile, future studies could use the procedures from this study but instead have each participant view several social networking profiles. The experimental manipulation of target threat could then be manipulated within-person, as well, at the level of each trial (versus at the level of each participant, as in the current study). This type of within-person design would also allow multiple target faces to be used. Having each participant view multiple target faces would help to clarify differences in scores on the Visual Matching Task by each target face. In summary, this study identifies ways in which the task could be administered online, using a within-person experimental design, in order to further investigate perceptual downgrading.

Conclusions

In summary, the current study attempted to replicate basic perceptual downgrading findings from previous work, but these hypotheses were not supported. Results from this study identify future directions for basic science studies of romantic relationship processes, including cognitive processes that may support versus undermine relationship maintenance. It will be important for additional studies to further clarify the nature and function of perceptual downgrading. As the mechanisms underlying perceptual downgrading become better understood, there may be aspects of perceptual downgrading that have clinical implications. Specifically, future research can investigate whether and how interventions can impact these mechanisms.

CHAPTER THREE:

PAPER 2: ALTERNATIVE MONITORING, INFIDELITY, AND BREAK-UP²

² Manuscript to be submitted for publication with coauthors Scott M. Stanley, Ph.D., Galena K. Rhoades, Ph.D., and Howard J. Markman, Ph.D.

Abstract

Monitoring alternative partners may be associated with engaging in behaviors that undermine relationship fidelity and/or stability. For example, paying attention to romantic alternatives has been shown to be associated with lower relationship quality (e.g., Simeon & Miller, 2005). Studies have just recently begun investigating the association between alternative monitoring and relationship outcomes, with many studies characterized by methodological limitations. This study aims to longitudinally explore whether and how alternative monitoring is associated with infidelity and break-up. Participants were 779 individuals drawn from a longitudinal study of unmarried opposite relationships (see Rhoades, Stanley, & Markman, 2010 for details). As hypothesized, alternative monitoring was higher for those who broke up and for those who reported infidelity, compared to those who remained together without infidelity. Additionally, increases in alternative monitoring preceded both break-up and infidelity, compared to trajectories for those who remained together and did not report infidelity. Also consistent with hypotheses, those who remained together following infidelity reported significantly higher levels of perceived constraint than those who broke up following infidelity. Those who remained together following infidelity also reported significantly larger increases in perceived constraint compared to those who broke up following infidelity. Results highlight the importance of measuring change in these relationship characteristics over time, rather than only considering mean differences at a single timepoint. Future directions and clinical implications are discussed.

Background

Romantic relationships contain spoken and unspoken expectations about what constitutes fidelity for each partner. In samples of teens (Knopp, Rhoades, Stanley, & Markman, 2017) and young adults (Knopp, Rhoades, Stanley, & Markman, 2015a), approximately 50% of individuals in romantic relationships reported having explicitly discussed their expectations for fidelity. Often, these expectations include romantic and sexual exclusivity (i.e., concurrent monogamy). However, even among those who place importance on romantic and sexual exclusivity, there is wide variation in the emotions, thoughts, and behaviors that individuals consider to be acceptable within a committed relationship (e.g., Wilson, Mattingly, Clark, Weidler, & Bequette, 2011). For example, one study found that many participants considered fantasizing about someone besides their current partner to be moderately indicative of infidelity (Wilson et al., 2011).

According to most estimates, infidelity occurs at rates between 20 and 50 percent, though estimates vary based on the terminology used (e.g., “cheating,” “extradyadic sex”), how the construct is defined (e.g., sexual intercourse, any behavior that would violate relationship agreements), and whether dating (Hall & Fincham, 2009; Owen, Rhoades, Stanley, & Fincham, 2010) or marital (Tafoya & Spitzberg, 2007) relationships are considered. Notably, because fidelity is operationalized differently across studies, it is difficult to measure because such expectations are often implicitly assumed for each individual and/or unspoken between partners (Knopp et al., 2015a; Knopp et al., 2017). Despite inconsistencies in operational definitions and measurement, research shows that infidelity is one of the most significant threats to relationship stability, with many relationships dissolving after infidelity is discovered (Allen & Atkins, 2012; Vangelisti &

Gerstenberger, 2014). In fact, the presence of an alternative partner is the most commonly cited reason for relationship dissolution across over 100 cultures (Betxig, 1989), and infidelity is a commonly cited reason for divorce (Scott, Rhoades, Stanley, Allen, & Markman, 2013).

Deciding to reject other potential relationship partners has been conceptualized as an important component of commitment (Stanley & Markman, 1992; Rusbult, 1983). Conversely, paying attention to alternative relationship partners has been used as a sign of low commitment (e.g., Johnson & Rusbult, 1989; Stanley & Markman, 1992). Thus, monitoring—being aware of, or thinking about—alternative partners may be associated with engaging in behaviors that undermine relationship fidelity and/or stability. For example, paying attention to romantic alternatives has been shown to be associated with lower relationship quality (e.g., Simeon & Miller, 2005). However, there has been a lack of research examining whether alternative monitoring is associated with infidelity. Studies have just recently begun investigating the association between alternative monitoring and infidelity, with many studies characterized by methodological limitations. In these initial studies, the findings have been mixed and appear to depend on the methods of measurement and the duration of the study period. For example, one cross-sectional study found that reporting attraction to another person while in a relationship was not associated with having engaged in infidelity in the past (Belu & O’Sullivan, 2019). In contrast, another study found that those who could more rapidly divert their attention from alternatives during a laboratory task at baseline were less likely to report infidelity during the following 3.5 years (McNulty, Meltzer, Makhanova, & Maner 2018). More research is needed in order to investigate the association between alternative

monitoring and infidelity, including how these two variables might vary together over time.

There is reason to expect causality in both directions between alternative monitoring and infidelity. On one hand, engaging in infidelity may increase an individual's awareness of alternative partners, and may lead them to pay more attention to alternatives generally. On the other hand, monitoring alternatives may increase the likelihood of infidelity occurring, as the individual may be alert to opportunities to become involved with alternative partners. It is likely that the association between alternative monitoring and infidelity is bidirectional, and it may be important to consider changes in alternative monitoring over time within each individual, in addition to overall differences between people.

Alternative monitoring also may be associated with break-up. Monitoring alternatives could contribute to the likelihood of break-up and/or the timing of break-up, as an individual increases their awareness of alternatives and decreases their investment in the current relationship. Additionally, individuals may monitor alternatives more prior to ending a current relationship, such that alternative monitoring may be a short-term strategy to maintain the current relationship until the individual is ready to break up (Collins & Gillath, 2012). Specifically, monitoring alternatives leading up to break-up may allow individuals to retain the benefits of the current relationship and avoid any discomfort associated with being single, while also monitoring options for the next relationship. Yet, one study found that alternative monitoring did not predict break-up during the same semester among undergraduates (Quirk et al., 2016). However, this study was only able to measure alternative monitoring at one timepoint. It may be that changes

in alternative monitoring would better predict break-up than the values at one timepoint only. That is, changes in alternative monitoring—more so than the level of alternative monitoring at one point in time—may be associated with relationship outcomes including infidelity and break-up.

In considering the relationship processes underlying infidelity and break-up, commitment is one important factor. Commitment has been conceptualized in various ways (e.g., Rusbult, 1983). One model focuses on two broad components—dedication, which refers to a personal desire to commit to a relationship, and constraint, which includes factors that make it more difficult to leave a relationship (Stanley & Markman, 1992). Some constraints have to do with the perceived social context (e.g., having many of the same friends, having family members who would be upset if a break-up occurred) or practical factors (e.g., both partners relying on one partner's income). Other constraints focus on the anticipated personal and interpersonal impact of a potential break-up (e.g., having concerns that the partner's wellbeing would suffer if a break-up occurred). Importantly, constraint commitment can be associated with positive or negative relationship outcomes. Specifically, when the level of dedication is low, high levels of constraint are associated with negative experiences (Knopp, Rhoades, Stanley, & Markman, 2015b). Various dimensions associated with constraint add to the explanation of why people remain in relationships net of dedication (Rhoades, Stanley, & Markman, 2010).

One theory proposes that when constraints develop ahead of dedication maturing, individuals may become stuck in relationships that they would not have otherwise remained in (Stanley, Rhoades, & Markman, 2006). This concept is referred to as

relationship inertia. Regardless of how these aspects of commitment developed early on in the relationship, it is possible that some individuals who engage in infidelity may remain in a relationship that they would otherwise leave, partly because of the perceived constraints on leaving. If this is accurate, constraint commitment would be expected to be lower among those who break up following infidelity, compared to those who remain together following infidelity. Alternative monitoring can be analyzed as a dimension within dedication or as a separate variable of theoretical interest, as noted by Stanley and Markman (1992). Our interest here was specifically on alternative monitoring, and we examine it (along with perceived constraint) as a predictor of relationship outcomes regarding infidelity and stability.

Current Study

This study aims to longitudinally explore whether and how alternative monitoring is associated with infidelity and break-up. Analyses focus on two main relationship outcomes: new instances of infidelity reported during the study period and break-up within the study period. This study focuses on individuals in unmarried opposite-sex relationships, assessed over eight waves of data collection that spanned approximately four years. We compare linear trajectories of alternative monitoring between those who remained together without infidelity, those who broke up organically (i.e., without the break-up being preceded by infidelity), and those who engaged in infidelity. We hypothesized that alternative monitoring would be higher for those who broke up (H1a) and would increase more steeply (H1b) for those who broke up, compared to those who remain together. We also hypothesized that those who reported infidelity would have higher alternative monitoring (H2a) and larger increases in alternative monitoring (H2b),

compared to those who did not report infidelity. We also investigate how other aspects of commitment (e.g., level of perceived constraint) may differentiate between trajectories of breaking up following infidelity versus remaining together following infidelity. We hypothesized that among those who reported infidelity, there would be differences in the level of perceived constraint (H3a) and differences in how perceived constraint changed over time (H3b) between those who broke up versus remained together.

Method

Participants

Participants were 779 individuals drawn from the Relationship Development Study (see Rhoades, Stanley, & Markman, 2010 for details). Participants in the longitudinal study were unmarried adults between the ages of 18 and 34 years old, who had been in an opposite-sex romantic relationship lasting at least two months at baseline. The current sample includes those who remained in their baseline relationship for at least three waves of data collection. The current sample included 507 (65%) women and 272 (35%) men. The mean age at baseline was 25.68 years ($SD = 4.76$). With regard to race, participants were 1% American Indian or Alaska Native, 4% Asian, 11% Black or African American, <1% Native Hawaiian or Other Pacific Islander, 78% White, and, and 3% multiracial. The sample was 8% Hispanic or Latino/a. The mean relationship length at baseline was 2.94 years ($SD = 2.71$).

Procedure

This project received approval from the university's Institutional Review Board. The sample for the larger study was recruited using targeted-listing sampling of households in the contiguous U.S. Those who agreed to participate were sent a paper

survey by U.S. mail. Of 2,213 individuals who were sent surveys, 1,447 individuals completed them, reflecting a 65% response rate. An additional 153 individuals provided responses indicating that they did not meet eligibility requirements (e.g., being younger than 18 or older than 34, not being in an opposite-sex romantic relationship lasting at least two months). The larger study had a sample size of 1,294 individuals. Participants completed paper surveys every four to six months, and returned the hard copies to the research team via U.S. mail. Participants were paid \$40 for each completed survey. The current analyses include data from the first eight waves of data collection, spanning up to approximately four years.

Analytic Sample

Because the current analyses focus on new instances of infidelity, individuals were not included in this sample if they reported at baseline that they had already engaged in infidelity within their current relationship. Individuals were also excluded from the current analyses if they left the infidelity item blank at baseline (6 individuals). Because these analyses focus on alternative monitoring within unmarried relationships, timepoints following marriage to the baseline partner were removed, but data from all timepoints prior to the marriage were retained. Analyses involving relationship characteristics reflect these relationship characteristics leading up to the first reported instance of the participant's infidelity within the relationship. For those who did not report infidelity, analyses involving relationship characteristics reflect those leading up to the break-up, if there was a break-up. For participants who did not report either of these relationship events, we removed data from the final two timepoints observed so that their trajectories could not be reflecting changes up to just before break up or infidelity that

was simply not observed. In other words, we only utilized data from participants who did not report infidelity or break-up for approximately one year following the final data point used in analyses. The final sample for the current analyses included 779 individuals.

Measures

Alternative monitoring. Two items from the Commitment Inventory (Stanley & Markman, 1992) measured alternative monitoring. The first item, “I think a lot about what it would be like to be married to (or dating) someone other than my partner,” indicated high alternative monitoring. The second item, “I am not seriously attracted to anyone other than my partner,” was reverse-scored. Each item was rated on a seven-point scale from “1” = “*Strongly disagree*” to “7” = “*Strongly agree*” and a mean score was computed for each participant. Participants completed these items at each timepoint. Reported scores ranged from 1 to 7, with a mean of 2.61 ($SD = 1.52$) at baseline and 2.58 ($SD = 1.49$) at the final timepoint. These two items were significantly correlated at baseline, $r = 0.42, p < .001$, and at the final timepoint, $r = 0.44, p < .001$.

Perceived constraint. Seventeen items from the Revised Commitment Inventory (Owen, Rhoades, Stanley, & Markman, 2011) measured constraint commitment. Perceived constraint included aspects of social pressure, financial alternatives, termination procedures, concern for partner’s welfare, availability of other partners, and structural investments. These items were rated on a seven-point scale from “1” = “*Strongly disagree*” to “7” = “*Strongly agree*” and a mean score was computed for each participant. Participants completed these items at each timepoint. This variable is used for analyses investigating whether individuals break up or remain together following infidelity. In the current sample, among those who reported infidelity, Chronbach’s alpha

for these items was .68 at baseline and .66 at the final timepoint. Among those reporting infidelity at some point during the study, mean scores were 3.51 ($SD = 0.75$) at baseline and 3.71 ($SD = 0.79$) at the final timepoint.

Break-up. In order to be eligible for the study, all participants reported being in an unmarried opposite-sex relationship at baseline. At each timepoint thereafter, participants were asked whether they were still together with the same partner. Participants who were still in the baseline relationship were asked additional questions about the relationship. Those who were no longer in the baseline relationship were asked some additional questions related to the baseline relationship (e.g., details about the break-up) and were also asked about their new relationship if they reported being in a new relationship. Data for the current study includes only information reported about baseline relationships (i.e., no data about subsequent relationships are examined in the current analyses). For clarity in the current paper, the term “organic break-up” refers to break-ups that occurred without any infidelity also being reported. Organic break-up was reported by 19% ($n = 148$) of participants in the sample.

Infidelity. At each timepoint, participants reported whether they had ever had sexual relations with someone else since they began seriously dating their current partner. Those who broke up with their baseline partner were asked whether they had sexual relations with anyone else prior to the break-up. Response options included “No,” “Yes, with one person,” and “Yes, with more than one person.” For the current analyses, we collapsed both affirmative responses in order to make a dichotomous variable, with 0 indicating no infidelity and 1 indicating any infidelity during the course of the study

while in the baseline relationship. Of the 779 total participants, 23% ($n = 179$) reported a new instance of infidelity during the study period.

Results

For the purpose of these analyses, participants were divided into one of three categories: those who remained together with their baseline partner and did not report infidelity, those who reported infidelity, and those who experienced an organic break-up (i.e., breaking up without also reporting infidelity). Among the final sample ($N = 779$), 58% ($n = 453$) did not report either type of relationship event throughout the study period. In other words, these participants reported no instances of infidelity and reported that they were still in a relationship with their baseline partner at each timepoint of the study. Of the 179 participants who reported at least one new instance of infidelity during the study period, 50% ($n = 89$) of these participants also broke up during the study period and 50% ($n = 89$) of these participants remained in the relationship for the duration of the study period. Table 1 presents mean levels of alternative monitoring for participants in each of these three categories at the first and final timepoints. The baseline means reflect baseline alternative monitoring scores for all participants included in this analytic sample. The second column in Table 1 labeled “Final Timepoint” reflects alternative monitoring reported at the final timepoint of data included in the current analyses (i.e., the timepoint prior to infidelity, prior to organic break-up, or at least 8-12 months before their participation in the study ended, for those who reported neither break-up nor infidelity).

Multilevel modeling was used to account for the interdependence of timepoints (Level 1) nested within individuals (Level 2). Analyses were conducted using HLM 7.03 software (Raudenbush, Bryk, Fai, Congdon, & du Toit, 2011). Time was coded such that

the final timepoint included in analyses was coded as 0 and was the intercept, and other timepoints were coded backward from this point. Therefore, the intercept reflects alternative monitoring reported at the final timepoint of data included in the current analyses. As noted just above regarding Table 1, the intercept for those who reported infidelity reflects alternative monitoring prior to infidelity, the intercept for those who broke up organically is the value of alternative monitoring at the timepoint prior to break-up, and the intercept for those who reported neither break-up nor infidelity in the observed study period reflects alternative monitoring at least 8-12 months before their participation in the study ended (see the Analytic Sample section above for details and rationale).

Alternative Monitoring Increases Ahead of Break-up and Infidelity

Hypotheses about intercept and slope differences in alternative monitoring were investigated using the following multilevel model:

Level-1:

$$\text{Alternative Monitoring}_{ti} = \pi_{0i} + \pi_{1i}(\text{Time})_{ti} + e_{ti}$$

Level-2:

$$\begin{aligned} \pi_{0i} &= \beta_{00} + \beta_{01}*(\text{Break-up without infidelity}) + \beta_{02}*(\text{Infidelity}) + r_{0i} \\ \pi_{1i} &= \beta_{10} + \beta_{11}*(\text{Break-up without infidelity}) + \beta_{12}*(\text{Infidelity}) + r_{1i}. \end{aligned}$$

Table 2 displays the coefficients for this model, which tests for intercept differences and slope differences, as described in each hypothesis below. The coefficients for the intercept, β_{00} , and slope, β_{10} , reflect the mean level of alternative monitoring at intercept and the slope of change in alternative monitoring, respectively, for the group not reporting infidelity or break-up. The other coefficients test the hypotheses about differences between the infidelity and break-up groups with the group not reporting either relationship event.

For those who did not report infidelity, we hypothesized that alternative monitoring would be higher for those who broke up, compared to those who remained together (H1a). This is tested by the coefficient, β_{01} . This hypothesis was supported, such that alternative monitoring was significantly higher on average for those who reported an organic break-up, compared to those who remained together without infidelity ($\beta_{01} = 0.30, p = .03$). We also hypothesized that alternative monitoring would increase leading up to break-up compared to the change in alternative monitoring over time for those who did not break up (H1b). This is tested by the coefficient, β_{11} . There was some support for this hypothesis, with a trend for alternative monitoring to increase more steeply for those who reported an organic break-up, compared to those who remained together without infidelity ($\beta_{11} = 0.08, p = .07$).

We hypothesized that alternative monitoring would be higher for those who reported infidelity, compared to those who remained together without infidelity (H2a). This is tested by the coefficient, β_{02} , which was significant. Specifically, alternative monitoring was higher for those who reported infidelity, compared to those who remained together without infidelity ($\beta_{02} = 0.96, p < .001$). We also hypothesized that alternative monitoring would increase leading up to infidelity, compared to the change in alternative monitoring over time for those who remained together and did not report infidelity (H2b). This was tested by the coefficient, β_{12} . This hypothesis was supported, with alternative monitoring increasing significantly more steeply for those who reported infidelity, compared to the change in alternative monitoring over time for those who remained together without infidelity ($\beta_{12} = 0.24, p < .001$). See Figure 1 for a visual depiction of these trajectories.

Constraint Predicts Stability Among Those Reporting Infidelity

We investigated hypotheses about intercept and slope differences in perceived constraint between those who broke up following infidelity compared to those who remained together following infidelity using the following multilevel model:

Level-1:

$$Constraint_{it} = \pi_{0i} + \pi_{1i}(\text{Time})_{it} + e_{it}$$

Level-2:

$$\pi_{0i} = \beta_{00} + \beta_{01}*(\text{Break Up Following Infidelity}) + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}*(\text{Break Up Following Infidelity}) + r_{1i}$$

Table 3 presents mean levels of constraint at the first and final timepoints for participants reporting infidelity, split into two groups based on whether they broke up afterward. Table 4 displays the coefficients for this model, which evaluates intercept differences and slope differences, as described in each hypothesis below. We hypothesized that among those who reported infidelity, constraint would be higher for those who remained together compared to those who broke up afterward. We predicted that constraint would be lower at the intercept for those who broke up following infidelity (H3a), and we predicted that increases in constraint leading up to infidelity would be steeper for those who remained together versus broke up following infidelity (H3b). These hypotheses were tested by coefficients for the intercept, β_{01} , and slope, β_{11} , respectively. Results from this set of models support both of these hypotheses regarding constraint. Perceived constraint was significantly lower for those who broke up following infidelity compared to those who remained together following infidelity ($\beta_{01} = -0.29, p = .01$). Perceived constraint generally increased over time, but increased significantly less steeply ahead of infidelity for those who broke up afterward than among those who

remained together ($\beta_{11} = -0.12, p = .02$). See Figure 2 for a visual depiction of these trajectories.

Discussion

Findings from the current study identified differences in alternative monitoring between those with different relationship outcomes, consistent with predictions. The study includes self-report measures administered every four to six months for approximately four years. Compared to those who remained together without infidelity, alternative monitoring was higher for those who reported organic break-up, and for those who reported infidelity. Importantly, increases in alternative monitoring preceded both organic break-up and infidelity, compared to trajectories of alternative monitoring for those who remained together and did not report infidelity. For relationships characterized by stability and fidelity, alternative monitoring declined slightly throughout the study period. As hypothesized, increases in alternative monitoring preceded organic break-up, and particularly sharp increases in alternative monitoring preceded infidelity. For those who reported infidelity, increases in perceived constraint were larger for those who remained together compared to those who broke up afterward. These findings contribute to the literature by showing that both levels and changes in levels of alternative monitoring and perceived constraint are associated with infidelity and break-up in theoretically coherent ways.

An important strength of this study is its ability to measure alternative monitoring longitudinally. For example, alternative monitoring has been shown to be associated with having engaged in infidelity in the past, but this finding was based on cross-sectional data, with infidelity reported retrospectively (Belu & O'Sullivan, 2019). The current

study is able to include overall mean differences, as well as differences in the slope of alternative monitoring over time within the same relationship. Further, in a prior study with some ability to look at longitudinal break-up outcomes (Quirk et al., 2016), alternative monitoring was only measured at a single timepoint, precluding analysis of how changes in alternative monitoring are associated with relationship outcomes. These limitations in prior studies may account for why there have not been consistent associations between alternative monitoring and break-up. Notably, the current study finds that not only mean differences in alternative monitoring and constraint matter, but that increases in alternative monitoring and constraint may be particularly important. Our findings also indicate that the steepest increases in alternative monitoring were followed by infidelity. These findings can inform future research, highlighting the importance of measuring these relationship characteristics over time, as measurement at one timepoint may not provide sufficient information.

Limitations

These findings should be considered within the context of methodological limitations. For example, the current study does not incorporate commitment uncertainty, which has been found to be an important variable in previous research (Owen et al., 2014; Quirk et al., 2016). Future studies could incorporate this construct, focusing on whether individuals have committed to a future with their current partner or whether they are still “searching.” It is also important to note that measurement of infidelity in the current study is an imperfect estimate. Specifically, the item used in analyses ask about “sexual relations” with another person while in the current relationship, which may not completely and accurately capture all relevant instances of infidelity for all participants.

Underestimates may occur related to behaviors that are not “sexual relations,” but that people consider to constitute infidelity. Overestimates may occur for those who do not have expectations of sexual monogamy in their current relationship. In later waves of data collection in this sample, we collected data about whether participants had the expectation of sexual monogamy in their relationships. Of 875 participants who completed the eleventh timepoint, only 16 participants (2%) indicated that they did not expect sexual monogamy. Although some participants may have changed relationships and/or had relationship expectations that shifted over time, this data point suggests that the vast majority of the sample was likely to have been in relationships with the expectation of sexual monogamy. In other words, for the vast majority of participants in this sample, sexual relations outside of their relationship represented infidelity.

Future Directions

Findings from this paper identify important future directions. For example, how does alternative monitoring change following an instance of infidelity? If the instance of infidelity served as evidence that high-quality alternatives are available and appealing, individuals may be more likely to engage in additional instances of infidelity. Depending on the level of perceived constraint, individuals may also be more likely to end the relationship. The current study examines changes in alternative monitoring leading up to infidelity. Future research is needed in order to track changes in alternative monitoring following infidelity.

Clinical Implications

Clinical implications extend to both prevention and intervention efforts for couples. Prevention efforts are broadly intended to support couples in maintaining

healthy relationships. Having a better understanding of the role of alternative monitoring in supporting or hindering relationship fidelity and stability allows prevention content to address these topics as part of the content with couples. For example, perhaps relationship education workshops would benefit from including information about effective strategies for managing the presence of, and potential attraction to, alternative partners (e.g., Markman, 2005).

Clinical implications also include therapy interventions for couples who present to treatment following infidelity. Decisions about whether to break up following infidelity are a common and difficult issue in clinical settings. For those who remain—or try to remain— together following infidelity, it is considered one of the most damaging problems within relationships and one of the most difficult issues to address within couple therapy (Gordon, Baucom, & Snyder, 2005). Data also show that even many couple therapists do not feel adequately prepared to treat couples presenting with infidelity (Whisman, Dixon, & Johnson, 1997). Having a better understanding of how alternative monitoring and perceived constraint are associated with infidelity and break-up may provide guidance for therapists helping couples who present to treatment with a history of infidelity. Of course, more research is needed in order to identify specific intervention techniques that would be clinically useful in such a setting.

There may also be clinical implications for those who present to couple therapy without having experienced infidelity. For example, if a relationship is characterized by low happiness and low commitment, the partners may be particularly prone to higher-than-usual levels of alternative monitoring. The level and trajectory of alternative monitoring over a particularly vulnerable period of time may have important implications

for whether the couple remains together. Relationships characterized by low happiness and high commitment uncertainty may be particularly at-risk for infidelity and/or break-up. Findings from Quirk et al. (2016) suggest that couples who enter treatment with commitment uncertainty may be even more likely to break up. Additionally, discrepancies in commitment between partners have been shown to be associated with negative relationship characteristics, including lower adjustment, more conflict, and more aggression (Stanley et al., 2017). Based on findings from this study, we would expect that increases in alternative monitoring over time would predict both break-up and infidelity. It has been proposed that interventions for couples at increased risk of infidelity may benefit from including information about how to mitigate risk related to alternative partners (Stanley, Lobitz, & Dickson, 1999). However, future research is needed to determine whether this pattern of results remains accurate in treatment-seeking samples as well.

Conclusions

In summary, the current study identifies increases in alternative monitoring preceding break-up and particularly large increases preceding infidelity, compared to those who remain together without infidelity. Findings also demonstrate that, among those who report infidelity, higher levels of perceived constraint are associated with remaining together versus breaking up. This study contributes methodological strengths to the existing literature in this area, including the measurement of alternative monitoring and perceived constraint longitudinally, allowing for tests of differences in both intercept and slope. These findings provide a better understanding of how changes in alternative monitoring and perceived constraint may impact relationship outcomes.

CHAPTER FOUR: GENERAL DISCUSSION

These two papers addressed different facets of monitoring romantic alternatives, with the first study investigating a potential mechanism and the second study focusing on behavioral outcomes. The studies focused on (a) perceptions of alternative partners as presented in an experimental paradigm and (b) links between alternative monitoring and relationship outcomes, measured longitudinally in survey research. Together, these studies investigated associations between alternative monitoring and behavioral and cognitive processes underlying romantic commitment.

Study 1 used an experimental paradigm (i.e., the Visual Matching Task) to replicate a test of perceptual downgrading. Results were not consistent with perceptual downgrading. This study also attempted to experimentally manipulate the degree to which an attractive target could threaten the participant's existing relationship, though there this adapted procedure may have failed to effectively conduct this manipulation. Study 1 also investigated links between scores on the Visual Matching Task and self-report measures, for those who were in a relationship. Specifically, I tested whether scores on the Visual Matching Task differed based on self-reported relationship happiness or relationship commitment. Results did not support the hypotheses that perceptual downgrading would be strongest for those in happier and more committed relationships. Despite the lack of moderation by these relationship characteristics, the self-report relationship measures demonstrated validity, showing correlations among measures of relationship happiness, alternative monitoring, and other measures of commitment, consistent with theory and previous empirical work (e.g., Stanley, Markman, & Whitton, 2002). Notably, there were no statistically or clinically significant correlations between scores on the Visual Matching Task and any of the relationship

measures. That is, there was no evidence of any differences in relationship happiness, alternative monitoring, or alternative availability corresponding to variability in scores on the perceptual task.

Study 2 focused on the importance of alternative monitoring within the relationship context. Specifically, I investigated differences in alternative monitoring between individuals with various relationship outcomes in a longitudinal study of unmarried opposite-sex relationships. Specifically, I hypothesized that alternative monitoring would be higher for those who broke up and for those who reported infidelity, compared to those who remained together and did not report infidelity throughout the study. Results supported these hypotheses, consistent with predictions stemming from well established theories of commitment. I also hypothesized that alternative monitoring would increase at a significantly higher rate preceding both break-up and infidelity, compared to the change in alternative monitoring over time for those who did not report either of these relationship events. Results also supported these hypotheses. Study 2 also found differences in perceived constraint between those who broke up following infidelity and those who remained together following infidelity. Constraint generally increases as a relationship develops and continues, but increases were less steep for those who broke up following infidelity.

Across the two studies, the self-reported measures of relationship characteristics demonstrated strong validity and reliability. This is important not only for measurement reasons, but because together the studies demonstrate that some aspect of alternative monitoring is relevant and predictive of real-life events that occur commonly in the general population. Although Study 1 did not replicate findings from the Visual Matching

Task demonstrating perceptual downgrading, those results may highlight a key issue when considering responses on implicit versus explicit tasks. The questionnaire items measuring alternative monitoring used here explicitly ask each participant to provide a report. Responding to these items, therefore, requires awareness, reflection, and self-evaluation. In contrast, the cognitive-perceptual task aims to evaluate implicit processes occurring in the absence of awareness, reflection, and self-evaluation. Although both of these studies investigate the same constructs—commitment and alternative monitoring—the two approaches may yield differing results because implicit and explicit processes in relationship maintenance may actually operate separately. At times, implicit and explicit processes may be aimed at similar outcomes, and at other times they may function in contrast to one another. For example, a person may not experience downgrading at the level of perception, but may exert a conscious cognitive or behavioral effort to avoid interactions with alternatives that pose a threat to the relationship. More research is needed in order to clarify how implicit and explicit processes such as these interact with one another within a broader framework of relationship development and maintenance.

Relationship processes underlying commitment, fidelity, and stability are undoubtedly multi-determined and complex. For example, many individual, dyadic, and contextual factors predict whether someone engages in infidelity (Allen & Adkins, 2012). As such, it is difficult to isolate only one mechanism and clarify its specific role in maintaining fidelity. In Study 1, I attempted to replicate findings suggesting that perceptual downgrading is one important mechanism that functions to preserve relationships over time. It may be that the complicated processes involved in maintaining

commitment are not reliably reducible to a single cognitive process, as Study 1 attempted to explore.

Study 2 demonstrates evidence for a finding that commitment theories have clearly predicted, but no studies have examined in this way, longitudinally. Specifically, alternative monitoring is associated with significant relationship events that impact individuals, families, and the population in meaningful ways. Study 1 investigated one possible mechanism of this association—namely, that perceptual downgrading may be one process through which individuals protect their existing relationships. Although the results of Study 1 did not find evidence of perceptual downgrading, there are many possible reasons. First, perceptual downgrading may not actually occur. Second, if perceptual downgrading does in fact occur, it may be that the level of target threat was not adequately manipulated in this study. This could be due to attention to the task, engagement in the task, salience of the target, and/or the extent to which the target was perceived as a threat to the existing relationship. Finally, it is possible that perceptual downgrading does occur, but it occurs alongside other—possibly far more powerful—cognitive and behavioral processes, some of which may operate in contradiction to one another. In other words, perceptual downgrading may be one process through which individuals protect their commitments, but other processes may simultaneously operate in the service of other goals. For example, other processes may increase the likelihood that individuals will undermine fidelity or stability within their existing relationships for the purpose of achieving other goals outside of the relationship or entering new relationships. These processes may include behavioral strategies (e.g., seeking out involvement with

alternative partners) and contextual factors (e.g., having increased exposure to attractive alternatives).

In conclusion, this dissertation explored alternative monitoring using two distinct types of methods, with complementary strengths and limitations. The first study used an experimental design to investigate perceptual processes in alternative monitoring. The second study used longitudinal survey data, with timepoints nested within individuals, to identify differences in trajectories of alternative monitoring over a four-year study period. Findings from the second study show how increases in alternative monitoring precede two key relationship outcomes. This dissertation identifies important future directions for research on alternative monitoring. These areas for future research range from laboratory-based experimental studies to applied clinical studies of alternative monitoring and commitment. The findings from this dissertation carry clinical implications for prevention and intervention work with couples around dimensions of trust, fidelity, and commitment. Further research is needed in order to investigate the likely bidirectional associations between alternative monitoring and relationship experiences (e.g., infidelity). The findings regarding alternative monitoring add to knowledge of how relationships are maintained versus undermined over time.

References for Chapter Two

- Cole, S., Trope, Y., & Balcetis, E. (2016). In the eye of the betrothed: Perceptual downgrading of attractive alternative romantic partners. *Personality and Social Psychology Bulletin, 42*(7), 879-892. doi: 10.1177/0146167216646546
- Dush, C. M. & Amato, P. R. (2005). Consequences of relationship status and quality for subjective well-being. *Journal of Social and Personal Relationships, 22*(5), 607–627. doi: 10.1177/0265407505056438
- Epley, N. & Whitchurch, E. (2008). Mirror, mirror on the wall: Enhancement in self-recognition. *Personality and Social Psychology Bulletin, 34*(9), 1159-1170. doi: 10.1177/0146167208318601
- Gonzaga, G. C., Keltner, D., Londahl, E. A., & Smith, M. D. (2001) Love and the commitment problem in romantic relations and friendship. *Journal of Personality and Social Psychology, 81*(2), 247-262. doi: 10.1037/0022-3514.81.2.247
- Hawkins, A. J., Amato, P. R., & Kinghorn, A. (2013). Are government-supported healthy marriage initiatives affecting family demographics? A state-level analysis. *Family Relations, 62*(3), 501-513. doi: 10.1111/fare.12009
- House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science, 241*(4865), 540-545. doi: 10.1126/science.3399889
- Impett, E. A., Beals, K. P., & Peplau, L. A. (2001). Testing the investment model of relationship commitment and stability in a longitudinal study of married couples. *Current Psychology, 20*(4), 312-326. doi: 10.1007/s12144-001-1014-3
- Johnson, D. J., & Rusbult, C. E. (1989). Resisting temptation: Devaluation of alternative partners as a means of maintaining commitment in close relationships. *Journal of*

Personality and Social Psychology, 57(6), 967-980. doi: 10.1037/0022-3514.57.6.967

Karremans, J. C., Dotsch, R., & Corneille, O. (2011). Romantic relationship status biases memory of faces of attractive opposite-sex others: Evidence from a reverse-correlation paradigm. *Cognition*, 121(3), 422-426. doi: 10.1016/j.cognition.2011.07.008

Le, B., Dove, N. L., Agnew, C. R., Korn, M. S., & Mutso, A. A. (2010). Predicting nonmarital romantic relationship dissolution: A meta-analytic synthesis. *Personal Relationships*, 17(3), 377-390. doi: 10.1111/j.1475-6811.2010.01285.x

Lydon, J. E., Fitzsimons, G. M., & Naidoo, L. (2003). Devaluation versus enhancement of attractive alternatives: A critical test using the calibration paradigm. *Personality and Social Psychology Bulletin*, 29(3), 349-359. doi: 10.1177/0146167202250202

Niehuis, S. (2005). Alternative monitoring predictors: When the grass looks greener on the other side. *North American Journal of Psychology*, 7(3), 419-429.

Maner, J. K., Rouby, D. A., & Gonzaga, G. (2008). Automatic inattention to attractive alternatives: The evolved psychology of relationship maintenance. *Evolution and Human Behavior*, 29(5), 343-349. doi: 10.1016/j.evolhumbehav.2008.04.003

Mangini, M. C. & Biederman, I. (2004). Making the ineffable explicit: Estimating the information employed for face classification. *Cognitive Science*, 28(2), 209-226. doi: 10.1207/s15516709cog2802_4

- Miller, R. S. (1997). Inattentive and contented: Relationship commitment and attention to alternatives. *Journal of Personality and Social Psychology*, 73(4), 758-766. doi: 10.1037/0022-3514.73.4.758
- Owen, J. J., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2011). The revised commitment inventory: Psychometrics and use with unmarried couples. *Journal of Family Issues*, 32(6), 820-841. doi: 0.1177/0192513X10385788
- Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2010) Should I stay or should I do? Predicting dating relationship stability from four aspects of commitment. *Journal of Family Psychology*, 24(5), 543-550. doi: 10.1037/a0021008
- Ritter, S. Karremans, J. C., & Van Schie, H. (2010). The role of self-regulation in derogating attractive alternatives. *Journal of Experimental Social Psychology*, 46(4), 631-637. doi: 10.1016/j.jesp.2010.02.010
- Rusbult, C. E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology*, 45(1), 101-117. doi: 10.1037/0022-3514.45.1.101
- Stanley, S. M. & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and the Family*, 54(3), 595-608. doi: 10.2307/353245
- Stanley, S.M., Markman, H.J., & Whitton, S. (2002). Communication, conflict, and commitment: Insights on the foundations of relationship success from a national survey. *Family Process*, 41(4), 659-675. doi: 10.1111/j.1545-5300.2002.00659.x

- Stanley, S. M., Rhoades, G. K., & Whitton, S. W. (2010). Commitment: Functions, formation, and the securing of romantic attachment. *Journal of Family Theory and Review*, 2(4), 243-257. doi: 10.1111/j.1756-2589.2010.00060.x
- Stanley, S. M., Rhoades, G. K., Scott, S. B., Kelmer, G., Markman, H. J., & Fincham, F. D. (2016). Asymmetrically committed relationships. *Journal of Social and Personal Relationships*, 34(8), 1241-1259. doi: 10.1177/0265407516672013
- Stanley S. M., Lobitz W. C., Dickson F. C. (1999) Using what we know. In: J. M. Adams & W. H. Jones (Eds.) *Handbook of interpersonal commitment and relationship stability: Perspectives on individual differences*. Springer, Boston, MA.
- Thibaut, J. W. & Kelley, H. H. (1959). *The social psychology of groups*. Wiley: New York, NY.

References for Chapter Three

- Allen, E. S. & Atkins, D. C. (2012). The association of divorce and extramarital sex in a representative U.S. sample. *Journal of Family Issues*, 33(11), 1477-1493. doi: 10.1177/0192513X12439692
- Belu, C. F. & O'Sullivan, L. F. (2019). Roving eyes: Predictors of crushes in ongoing romantic relationships and implications for relationship quality. *Journal of Relationships Research*, 10, 1–12. doi: 10.1017/jrr.2018.21
- Betzig, L., (1989). Causes of conjugal dissolution: A cross-cultural study. *Current Anthropology*, 30(5), 654-676. doi: 10.1086/203798
- Collins, T. J. & Gillath, O. (2012). Attachment, breakup strategies, and associated outcomes: The effects of security enhancement on the selection of breakup strategies. *Journal of Research in Personality*, 46(2), 210–222. doi: 10.1016/j.jrp.2012.01.008
- Gordon, K. C., Baucom, D. H., & Snyder, D. K. (2005). Treating couples recovering from infidelity: An integrative approach. *Journal of Clinical Psychology*, 61(11), 1393-1405. doi: 10.1002/jclp.20189
- Hall, J. H. & Fincham, F. D. (2009). Psychological distress: Precursor or consequence of dating infidelity? *Personality and Social Psychology Bulletin*, 35(2), 143-159. doi: 10.1177/0146167208327189
- Johnson, D. J., & Rusbult, C. E. (1989). Resisting temptation: Devaluation of alternative partners as a means of maintaining commitment in close relationships. *Journal of Personality and Social Psychology*, 57(6), 967-980. doi: 10.1037/0022-3514.57.6.967

- Knopp, K. C., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2015). Stuck on you: How dedication moderates the way constraints feel. *Journal of Social & Personal Relationships, 32*(1), 119-137. doi:10.1177/0265407514525885
- Knopp, K., Rhoades, G.K., Stanley, S.M., & Markman, H.J. (June, 2017). *Teens' decision-making about commitment in romantic relationships*. Poster presented at the International Conference on Couple and Family Psychology, Chicago, IL.
- Knopp, K., Rhoades, G.K., Stanley, S.M., & Markman, H.J. (November, 2015). *Defining the relationship: Intentional decision-making in romantic relationships*. Poster presented at the meeting of the Association for Behavioral and Cognitive Therapies, Chicago, IL.
- Markman, H. J. (2005). The prevention of extramarital involvement: Steps toward “affair proofing” marriage. *Clinical Psychology: Science and Practice, 12*(2), 134-138. doi: 10.1093/clipsy.bpi016
- McNulty, J. K., Meltzer, A. L., Makhanova, A., & Maner, J. K. (2018). Attentional and evaluative biases help people maintain relationships by avoiding infidelity. *Journal of Personality and Social Psychology, 115*(1), 76-95. doi: 10.1037/pspi0000127
- Owen, J. J., Rhoades, G. K., Stanley, S. M., & Fincham, F. D. (2010) “Hooking up” among college students: Demographic and psychosocial correlates. *Archives of Sexual Behavior, 39*(3), 653-663. doi: 10.1007/s10508-008-9414-1
- Owen, J. J., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2011). The revised commitment inventory: Psychometrics and use with unmarried couples. *Journal of Family Issues, 32*(6), 820-841. doi: 0.1177/0192513X10385788

- Owen, J., Rhoades, G., Shuck, B., Fincham, F. D., Stanley, S., Markman, H., & Knopp, K. (2014). Commitment uncertainty: A theoretical overview. *Couple and Family Psychology: Research and Practice*, 3(4), 207-219. doi: 10.1037/cfp0000028
- Quirk, K., Owen, J., Shuck, B., Fincham, F. D., Knopp, K. & Rhoades, G. K. (2016). Breaking bad: Commitment uncertainty, alternative monitoring, and relationship termination in young adults. *Journal of Couple and Relationship Therapy*, 15(1), 61-74. doi: 10.1080/15332691.2014.975306
- Raudenbush, S. W., Bryk, A. S., Cheong, A. S., Fai, Y. F., & Congdon, R. T. du Toit (2011). HLM 7: Hierarchical linear and nonlinear Modeling.
- Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2010) Should I stay or should I do? Predicting dating relationship stability from four aspects of commitment. *Journal of Family Psychology*, 24(5), 543-550. doi: 10.1037/a0021008
- Rusbult, C. E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology*, 45(1), 101-117. doi: 10.1037/0022-3514.45.1.101
- Scott, S. B., Rhoades, G. K., Stanley, S. M., Allen, E. S., & Markman, H. J. (2013). Reasons for divorce and recollections of premarital intervention: Implications for improving relationship education. *Couple and Family Psychology: Research and Practice*, 2(2), 131-145. doi: 10.1037/a0032025
- Simeon, J. R., & Miller, R. S. (2005). Relationship functioning, personalities, and attention to attractive alternatives over time. Presented at the Society for Personality and Social Psychology Annual Meeting, New Orleans, LA.

- Stanley S. M., Lobitz W. C., Dickson F. C. (1999) Using what we know. In: J. M. Adams & W. H. Jones (Eds.) *Handbook of interpersonal commitment and relationship stability: Perspectives on individual differences*. Springer, Boston, MA.
- Stanley, S. M. & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and the Family*, 54(3), 595-608. doi: 10.2307/353245
- Stanley, S. M., Rhoades, G. K., & Markman, H. J. (2006). Sliding versus deciding: Inertia and the premarital cohabitation effect. *Family Relations*, 55(4), 499-509. doi: 10.1111/j.1741-3729.2006.00418.x
- Stanley, S. M., Rhoades, G. K., Scott, S. B., Kelmer, G., Markman, H. J., & Fincham, F. D. (2017). Asymmetrically committed relationships. *Journal of Social and Personal Relationships*, 34(8), 1241–1259. doi: 10.1177/0265407516672013
- Tafoya, M. A., & Spitzberg, B. H. (2007). The dark side of infidelity: Its nature, prevalence, and communicative functions. In B. H. Spitzberg & W. R. Cupach (Eds.) *The dark side of interpersonal communication* (pp. 211-252). Routledge.
- Whisman, M. A., Dixon, A. E., & Johnson, B. (1997). Therapists' perspectives of couple problems and treatment issues in couple therapy. *Journal of Family Psychology*, 11(3), 361–366. doi: 10.1037/0893-3200.11.3.361
- Wilson, K., Mattingly, B. A., Clark, E. M., Weidler, D. J., & Bequette, A. W. (2011). The gray area: Exploring attitudes toward infidelity and the development of the Perceptions of Dating Infidelity Scale. *Journal of Social Psychology*, 151(1), 63-86. doi: 10.1080/00224540903366750

Vangelisti, A. L., & Gerstenberger, M. (2014). Communication and marital infidelity. In J. Duncombe, K. Harrison, G. Allan, & D. Marsden (Eds.) *The state of affairs: Explorations in infidelity and commitment* (pp. 59-78). Taylor and Francis. doi: 10.4324/9781410610652

Appendix A: Tables for Chapter Two

Table 1
Alternative Monitoring Items and Descriptive Statistics

Item	<i>M</i>	<i>SD</i>
I know people whom I desire more than [partner].	2.29	1.70
I am not seriously attracted to anyone other than [partner]. ^R	2.89	1.99
I would like to have a romantic/sexual relationship with someone other than [partner].	2.37	1.75
I do not often find myself thinking about what it would be like to be in a relationship with someone else. ^R	3.19	2.18
I think a lot about what it would be like to be married to (or dating) someone other than [partner].	2.44	1.73

^R= item is reverse-scored

Table 2
Alternative Availability Items and Descriptive Statistics

Item	<i>M</i>	<i>SD</i>
It would be very difficult to find a new partner. ^R	3.64	1.75
I would have trouble finding a suitable partner if this relationship ended. ^R	3.47	1.75
If for any reason my relationship ended, I could find another partner.	4.78	1.51
I believe there are many people who would be happy with me as their spouse or partner.	5.04	1.47
Though it might take awhile, I could find another desirable partner if I wanted to.	5.57	1.17
I am not very attractive to others. ^R	4.55	1.61

^R= item is reverse-scored

Table 3
Correlations Between Key Variables, Among Participants in a Relationship

Variable	1	2	3	4
1. Visual Matching Task				
2. Relationship happiness	.11			
3. Dedication	.05	.55***		
4. Alternative monitoring	.01	-.41***	-.54***	
5. Alternative availability	-.04	.11	-.04	.09

[†] $p = <.10$; * $p = <.05$; *** $p = <.01$

Table 4
Mean Perceived Attractiveness, by Target Photo and by Participant Relationship Status

Target Photo	Relationship Status	Mode	<i>M</i>	<i>SD</i>	<i>n</i>
Man A	Single	-7.00	7.00	14.00	14
	Relationship	.00	5.83	9.61	24
Man B	Single	7.00	6.00	4.83	7
	Relationship	.00	4.26	13.80	23
Man C	Single	-10.00	1.61	15.08	31
	Relationship	-10.00	0.00	12.25	17
Woman A	Single	.00	2.50	16.69	28
	Relationship	.00	-5.00	16.73	16
Woman B	Single	-14.00	-0.81	16.49	26
	Relationship	multiple	-4.31	17.51	13
Woman C	Single	.00	-4.16	18.47	32
	Relationship	14.00	9.55	19.11	11

Appendix B: Tables for Chapter Three

Table 1
Alternative Monitoring at the First and Last Timepoint, by Group

	<i>M (SD)</i>	
	Baseline Timepoint	Final Timepoint
Remained together without infidelity (<i>n</i> = 453)	2.46 (1.46)	2.28 (1.37)
Organic break-up (<i>n</i> = 148)	2.54 (1.51)	2.68 (1.46)
Infidelity (<i>n</i> = 178)	2.93 (1.48)	3.39 (1.66)

Table 2
Linear Trajectories of Alternative Monitoring Moderated by Break-up and Infidelity

	β	<i>SE</i> β	<i>t-ratio</i>	<i>df</i>	<i>p-value</i>
Intercept, π_0					
Intercept, β_{00}	2.34***	0.07	35.81	774	<0.001
Organic break-up, β_{01}	0.30*	0.13	2.21	774	0.03
Infidelity, β_{02}	0.96***	0.13	7.67	774	<0.001
Slope, π_1					
Intercept, β_{10}	-0.04*	0.02	-2.26	774	0.02
Organic break-up, β_{11}	0.08 ^T	0.04	1.85	774	0.07
Infidelity, β_{12}	0.24***	0.04	5.72	774	<0.001

^T $p = <.10$; * $p = <.05$; *** $p = <.01$

Table 3
Constraint for those who Broke up versus those who Remained Together, Among those Reporting Infidelity

	<i>M (SD)</i>	
	Baseline Timepoint	Final Timepoint
Broke up following infidelity (<i>n</i> = 88)	3.40 (0.77)	3.56 (0.80)
Remained together following infidelity (<i>n</i> = 88)	3.62 (0.72)	3.86 (0.76)

Table 4
Linear Trajectories of Constraint for those who Broke up versus those who Remained Together, Among those Reporting Infidelity

	β	$SE \beta$	t -ratio	df	p -value
Intercept, π_0					
Intercept, β_{00}	3.84***	0.08	46.84	180	<0.001
Broke Up Following Infidelity, β_{01}	-0.29*	0.12	-2.51	180	0.01
Slope, π_1					
Intercept, β_{10}	0.01	0.03	0.47	180	0.64
Broke Up Following Infidelity, β_{11}	-0.12*	0.05	-2.46	180	0.02

[†] $p = <.10$; * $p = <.05$; *** $p = <.01$

Appendix C: Figures for Chapter Three

Figure 1. Linear Trajectories of Alternative Monitoring Moderated by Break-up and Infidelity.

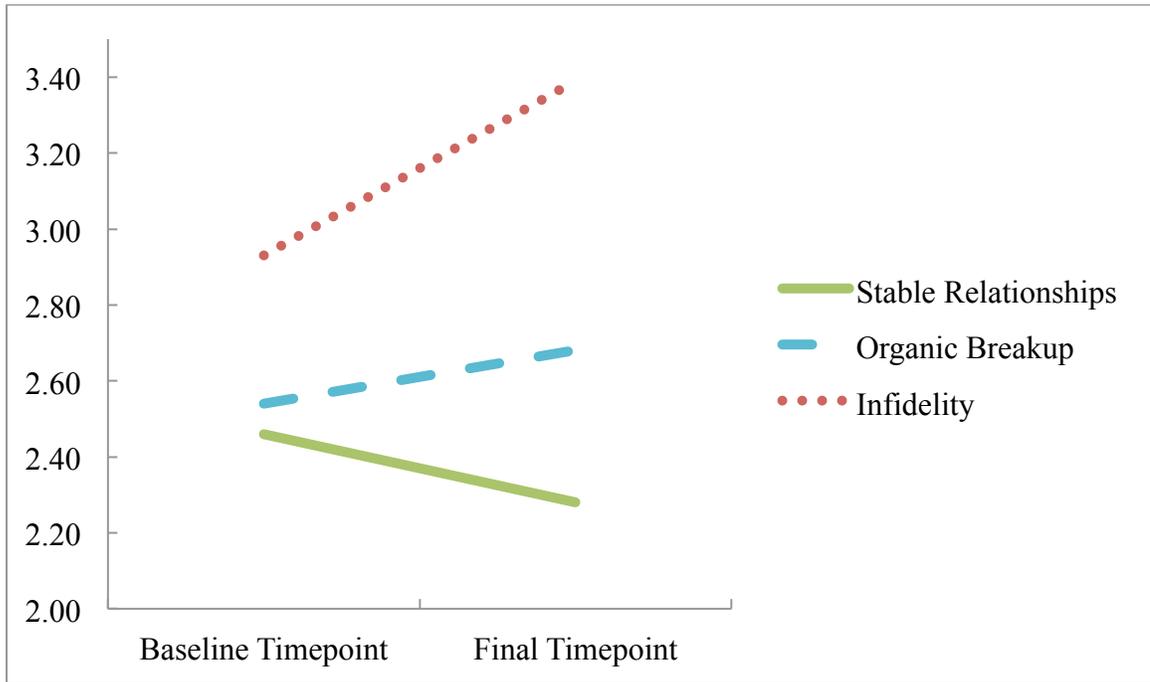


Figure 2. Among Those Reporting Infidelity, Linear Trajectories of Constraint for those who Broke up versus those who Remained Together.

