8-2016

Seeking certainty: Are people who are experiencing relational doubt more sensitive to relationship cues?

Christine Ann Daly
Purdue University

PURDUE UNIVERSITY
GRADUATE SCHOOL
Thesis/Dissertation Acceptance

This is to certify that the thesis/dissertation prepared

By Christine Ann Daly

Entitled

Seeking Certainty: Are People Who are Experiencing Relational Doubt More Sensitive to Relationship Cues?

For the degree of Master of Science

Is approved by the final examining committee:

Ximena B. Arriaga
Chair

James M. Tyler

William G. Graziano

To the best of my knowledge and as understood by the student in the Thesis/Dissertation
Agreement, Publication Delay, and Certification Disclaimer (Graduate School Form 32),
this thesis/dissertation adheres to the provisions of Purdue University's "Policy of
Integrity in Research" and the use of copyright material.

Approved by Major Professor(s): Ximena B. Arriaga

Approved by: Janice R. Kelly   7/11/2016

Head of the Departmental Graduate Program   Date

SEEKING CERTAINTY: ARE PEOPLE WHO ARE EXPERIENCING

RELATIONAL DOUBT MORE SENSITIVE TO RELATIONSHIP CUES?

A Thesis

Submitted to the Faculty

of

Purdue University

by

Christine Ann Daly

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Science

August 2016

Purdue University

West Lafayette, Indiana

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Daly, Christine Ann. M.S., Purdue University, August 2016. Seeking Certainty: Are People Who Are Experiencing Relational Doubt More Sensitive to Relationship Cues? Major Professor: Ximena Arriaga.

Experiencing uncertainty in one's relationship is likely an aversive experience and a motivating factor in restoring confidence about where things stand. Thus, uncertain partners may place more weight on positive and negative interactions with their partner as they seek greater confidence in their evaluation of their relationship. The present research examined how partners responded to two different types of relationship information: a past relationship experience (Study 1, $N = 154$) and false feedback about its quality (Study 2, $N = 154$). Results suggest that while partners appear to place significance on positive information, regardless of their uncertainty, whether or not uncertain partners place more significance on negative information than confident partners appears to depend on information type. In addition, no robust downstream effects of uncertainty on global relationship evaluations in response to positive and negative information were observed. Limitations and directions for future research are discussed.

INTRODUCTION

Throughout the past three or four decades, relationships researchers have been successful in identifying conditions that allow romantic relationships and the individual partners within them to thrive, versus conditions that predict relationship dissolution. Because not all romantic relationships exist in these extremes of enhancement versus dysfunction, it is important to understand the functioning of relationships that fall in between these two states. Dating relationships are particularly interesting because when they are not at an optimal level, there are fewer barriers to ending a relationship than there would be in marital or cohabitating relationships (Le, Dove, Agnew, Korn, & Musto, 2010). When dating relationships reside at a sub-optimal level, they are characterized by volatile relationship evaluations as indicated by relationship ratings that vacillate over time (Arriaga 2001; Arriaga, Reed, Goodfriend, & Agnew, 2006). What are the factors or conditions that contribute to such fluctuations in relationship evaluations? The present research addresses this question by examining relational uncertainty as one potential underlying factor that might cause greater scrutiny of relationship information and, ultimately, more malleable relationship evaluations.

Fluctuations in Relationship Evaluations

Although the majority of existing research on romantic relationships has taken a relatively static approach in predicting relationship functioning (Karney & Bradbury,

1995), typically by examining the relationship between a variable of interest and a certain relationship outcome at either one or two points in time, a few longitudinal studies have assessed changes in relationship evaluations over multiple time periods. In a series of two studies on partners in newly formed romantic relationships, Arriaga (2001) investigated fluctuations in partners' ratings of relationship satisfaction over 10 points in time. She found that those whose ratings of satisfaction fluctuated more reported lower levels of commitment to their relationship and were more likely to be in relationships that eventually ended, regardless of their overall level of satisfaction throughout the study. Fluctuations in partners' dedication to the relationship have also been linked to dissolution considerations (Knopp, Rhoades, Stanley, Owen, & Markman, 2014).

Arriaga and her colleagues (Arriaga et al., 2006) observed a similar pattern of results, but this time examining individual's perceptions of their partner's commitment to their relationship. They found that participants whose perceptions of their partner's level of commitment fluctuated over time were more likely to be in a relationship that ended, regardless of initial or mean levels of perceived partner commitment. Although there are not many studies that examine fluctuations in relationship evaluations, a relatively clear message has emerged: Individual partners vary in the volatility of their relationship evaluations, and such volatility in evaluations appears to have important implications for relationship outcomes over time independent of the overall level of the relationship evaluation itself (i.e., more positive vs. more negative). In addition to predicting relationship outcomes, evidence is emerging that fluctuations in relationship evaluations affect personal outcomes as well; greater fluctuations in relationship

quality over time have been found to predict increased psychological distress and decreased life satisfaction (Whitton, Rhoades, & Whisman, 2014) and even depressive symptoms (Whitton & Whisman, 2010).

Despite its downstream consequences for both inter- and intrapersonal outcomes, little research to date has directly attempted to identify the factors that contribute to such fluctuations in ratings over time. What might cause certain partners to repeatedly re-evaluate their relationship more than other partners? I propose relational uncertainty to be one such factor.

Relational Uncertainty

I define relational uncertainty as the state of lacking confidence in one's current romantic relationship, with individuals experiencing lower confidence in their relationship considered to have greater relational uncertainty (cf. Knobloch & Solomon, 1999). That is, relational uncertainty does not refer one's uncertainty in regard to the existence of the relationship, but rather one's level of confidence in the viability of it. It is also important to note that partners' confidence in their evaluation of their own relationship is theoretically distinct from the evaluation itself. For example, a partner who rates his or her relationship as very satisfying may base this on evaluations that are relatively fragile (i.e., low confidence), and a partner who rates his or her relationship as very unsatisfying could do so with extreme confidence. Uncertainty about one's own evaluation of their current relationship can arise from several different factors; some individuals may feel uncertain about their partner (Murray & Holmes, 1999), and others about their partner's evaluations of the relationship (Holmes & Rempel, 1989; Murray, Holmes, & Griffin, 2000). Some may even feel confident about

their own and their partner's evaluations but have doubts about the viability of the relationship (e.g., because of physical distance or differences in religious beliefs).

Regardless of the source of one's doubts, relational uncertainty is likely an aversive experience. Consistent with this idea, the study of attitudes has demonstrated that attitudinal ambivalence is often associated with feelings of discomfort (see van Harreveld, Van der Pligt, & de Liver, 2009 for a review), which may serve to motivate an individual to resolve the attitudinal conflict.

Indeed, the various literatures linking uncertainty and increased information processing provide evidence for a motivation to restore confidence in one's evaluations. For example, Weary and Jacobson (1997) found that individuals who feel chronically uncertain process information more systematically than individuals who feel chronically certain. Similarly, depressed individuals tend to display more careful and deliberate processing of available information because they lack confidence in their own judgments (Weary, Marsh, Gleicher, & Edwards, 1993). Researchers have also demonstrated a greater reliance on systematic (vs. heuristic) processing after evoking low confidence in evaluation of objects by creating uncertain emotions (Tiedens & Linden, 2001) and through manipulations of self-affirmation (Briñol, Petty, Gallardo, & DeMarree, 2007).

In a relationship context, this suggests that partners experiencing relational uncertainty will scrutinize cues signaling the status of their relationship to a greater extent than partners experiencing confidence. Doubt-ridden individuals may place more weight on positive and negative interactions with their partner as they seek to obtain greater confidence (cf. Campbell, Simpson, Boldry, & Kashy, 2005). As a

result, the relationship evaluations of uncertain partners are likely to be more vulnerable to change and updated much more often than the evaluations of certain partners, leading to a greater volatility in evaluations observed over time.

This idea is consistent with findings from a longitudinal analysis by Whitton and her colleagues (Whitton et al., 2014), where lack of confidence in one's relationship was found to mediate the link between fluctuations in relationship quality and individual well-being over time. Other research by Arriaga and her colleagues (Arriaga, Slaughterbeck, Capezza, & Hmurovic, 2007) compared relatively uncommitted individuals who may experience greater uncertainty to highly committed individuals; those who were less committed were affected by a partner feedback manipulation and became less satisfied when receiving negative (false) feedback about their partner's characteristics versus positive (false) feedback, relative to committed individuals who were unaffected by such feedback. Moreover, relational uncertainty mediated this effect. However, research did not include a control condition, which makes it difficult to determine whether negative or positive feedback was most strongly affecting uncertain individuals.

Are Relationship-Relevant Evaluations Reactive to Positive and Negative Cues?

Although there is initial evidence that uncertain individuals are more reactive to information about their partner, there are key issues to be addressed in understanding how uncertain individuals manage relationship-relevant information. One issue concerns the type of information. Previous research has relied on manipulating information about a partner's personality (Arriaga et al., 2007) or a partner's apparent concerns about a relationship (Murray, Holmes, MacDonald, & Ellsworth, 1998).

Therefore, instead of manipulating partner-relevant information, the current research focuses on doubts about a relationship and included two different types of manipulations of relationship information. One manipulation asked participants to re-evaluate past relationship information, whereas a second manipulation provided participants with ostensibly new information about their relationship.

Another issue is the need to differentiate how uncertain individuals respond to positive versus negative information. Previous research (Arriaga et al., 2007) has lacked the appropriate control condition to determine whether uncertain individuals change their evaluations more in response to processing positive relational information, or in instead in response to negative relational information. On the one hand, previous research has suggested that negative relationship information carries more weight than positive information. For example, couple conflict has been identified as a strong predictor of relationship outcomes (e.g., Surra & Longstreth, 1990). On the other hand, uncertainty could increase reactivity to any kind of information, negative or positive. That is, the state of uncertainty may reflect vulnerability to new events and information regardless of the valence of such events/information. Moreover, research has revealed that positive couple interactions, such as giving/receiving support and sharing positive news, can exert an equal or stronger effect than negative interactions (e.g., Pasch & Bradbury, 1998). Given that the current research primarily focuses on uncertainty, which would seem to operate for all kinds of information, it was expected that positive relationship information could cause as much reactivity to the information meaning as could negative relationship information.

Yet another issue concerns the types of evaluations that may be most malleable among uncertain individuals. It is unlikely that a single experimental manipulation would cause a drastic change in global evaluations tapping relationship quality, as such evaluations can be relatively stable (see Arriaga, 2001). Therefore, in addition to examining change in relation quality, the present research also examined participants' evaluation of the relationship information itself, or rather, the weight participants reporting placing on such information.

Thus, the aim of the present research was to examine the effect of relational uncertainty on individuals' reactivity to both negative and positive relationship information, both in terms of the weight they place upon the information itself as well as its potential downstream consequences on their global evaluations of their relationship. Two different relational information manipulations were examined, one focused on recalling a past event and another on receiving relationship feedback. It was predicted that individuals who feel relatively uncertain about their relationship would scrutinize information about their relationship to a greater extent than individuals who feel relatively confident about their relationship. Specifically, individuals' scrutiny of such information will be reflected in their evaluations of the information itself, as indicated by their judgments of whether the information has significance for themselves or their relationship. Based on existing research and the rationale provided above, the following hypotheses were advanced:

Hypothesis 1a: Greater uncertainty will be associated with placing greater significance on positive information about one's relationship

(i.e., an effect of uncertainty in a positive information condition, relative to a no information condition, as suggested by a condition x uncertainty interaction).

Hypothesis 1b: Greater uncertainty will be associated with placing greater significance on negative information about one's relationship (i.e., an effect of uncertainty in a negative information condition, relative to a no information condition, as suggested by a condition x uncertainty interaction).

It was further predicted that as uncertain individuals exhibit greater scrutiny of relationship information, they might reevaluate their relationship. Those who process positive information may ultimately adopt more positive relationship evaluations, and those who process negative information may ultimately adopt more negative evaluations. Therefore, uncertain individuals may exhibit similar effects on information significance regardless of information valence, but such scrutiny could translate into different effects on relationship evaluations depending on whether the information positive or negative (i.e., a greater increase vs. a greater decrease). The following hypotheses were advanced:

Hypothesis 2a: Greater uncertainty will be associated with a greater increase in relationship evaluations in response to positive information about one's relationship (i.e,. an effect of uncertainty in a positive information condition, relative to a no information condition, as suggested by a condition x. uncertainty interaction).

Hypothesis 2b: Greater uncertainty will be associated with a greater

decline in relationship evaluations in response to negative information

about one's relationship (i.e,. an effect of uncertainty in a negative

information condition, relative to a no information condition, as

suggested by a condition x. uncertainty interaction).

Given the relative stability of global evaluations of relationship quality (as

discussed above), any observed downstream effects of relationship information on the

relationship evaluations of uncertain participants were expected to be weaker than the

observed effects on perceived information significance.

Potential Moderators

A final issue is that relational uncertainty may not be the only interpersonal

factor that causes an individual to scrutinize his or her interactions with a romantic

partner. Therefore, the present research explored several potential variables

(moderators) that may either amplify or provide boundary conditions for the

hypothesized effect of relational uncertainty on information and relationship

evaluations. As such analyses were exploratory in nature, no specific hypotheses of

moderation were advanced.

Implicit Theories of Growth and Destiny

Individuals tend to hold different mental models of what makes a successful

relationship. Knee (1998) distinguishes between two independent, implicit beliefs that

individuals hold about relationships: growth beliefs and destiny beliefs. A belief in

growth maintains that relationships develop over time by overcoming obstacles, while

a belief in destiny maintains that romantic partners are either meant for each other or they are not. Recent research by Knee, Nanayakkara, Vietor, Neighbors, and Patrick (2001) observed that perceiving discrepancies between one's ideal partner and one's actual partner predicted lower relationship satisfaction, except among those with high growth and low destiny beliefs. This suggests that uncertain individuals holding high growth and low destiny beliefs may be buffered from their hypothesized amplified response to negative relationship information.

Attachment Orientation

There is some evidence to suggest that insecurely attached partners are more sensitive to positive and negative social conditions. MacDonald and Borsook (2010) found that individuals high on attachment avoidance reported feeling less of a social connection to a confederate after a mildly negative social interaction as well as a greater feeling of social connection to a confederate after a mildly positive social interaction than individuals low on attachment avoidance. On the other hand, Campbell, Simpson, Bouldry, and Kashy (2005) observed that more anxiously attached partners perceived more conflict in their relationship and were more reactive to daily experiences of conflict and support from their partner. In addition, having an anxious-ambivalent attachment style is also associated with greater fluctuations in relationship satisfaction over time (Arriaga 2001). Thus, the greater reactivity of uncertain individuals to relationship information may be amplified among those who are high in attachment-related anxiety or avoidance.

Self-Esteem

Marigold, Holmes, and Ross (2007) found that when asked to ascribe meaning and significance to a compliment recently received from one's partner, individuals with low self-esteem exhibited a greater increase in their felt relationship security relative to individuals with high self-esteem. Therefore, the fragile evaluations of uncertain partners may be even more fragile among those with low self-esteem than those with high self-esteem.

The Present Research

Two studies examined participants' reactivity to relationship information. In Study 1, participants were asked to recall a positive or negative past experience with their current partner. Their responses were compared to participants who recalled an event unrelated to their relationship. In Study 2, participants were given false feedback about the quality of their relationship; they were told they were underestimating, overestimating, or accurate in assessing the quality of their relationship. Their responses were compared with participants who received no feedback about the quality of their relationship. Both studies tested whether relatively more uncertain individuals would exhibit greater reactivity to the relationship-relevant information manipulation (recall, feedback), as indicated by their judgments of information as being meaningful and by being more susceptible to reevaluating their relationship based on the information.

STUDY 1

In Study 1, participants received a relationship information manipulation in which they were asked to write about an actual past event that occurred in their relationship. Participants' level of uncertainty and global relationship evaluations were assessed prior to the manipulation. It was predicted that individuals would perceive both a positive and a negative past event involving their partner as having more significance for their relationship than a neutral past event that did not involve their partner, and that such an effect would be greater among more uncertain individuals (hypotheses 1a & 1b). It was further predicted that individuals would display greater relationship evaluations after writing about a positive past event than a neutral past event, and that such an increase would be greater among more uncertain individuals (hypothesis 2a) Alternately, it was predicted that individuals would display lower relationship evaluations after writing about a negative past event than a neutral past event, and that such decline would be greater among more uncertain individuals (hypothesis 2b).

Method

Participants

One hundred and seventy-five individuals who were currently involved in a romantic relationship were recruited from either a large Midwestern university ($N = $

36) or Amazon's Mechanical Turk website ($N = 139$). In exchange for their participation, those recruited from the university received partial course credit, and those recruited from Mechanical Turk received $0.50. Of those initially sampled, 21 participants were dropped from analysis because they: (a) reported fabricating their responses ($n = 3$), (b) did not complete the event recall writing exercise ($n = 7$), and/or (c) failed an attention check placed in the survey or displayed evidence of click-through responding ($n = 17$), resulting in a final sample of $N = 154$ participants (59.1% female).

Participants ranged in age from 18 to 63 years old, with an average age of 31.25 years old ($SD = 11.67$). Approximately 6.5% of participants reported that they were African American, 6.5% were Asian or Asian American, 77.9% were Caucasian, 5.8% were Hispanic, and 3.3% indicated "other." In terms of relationship status, 20.8% of participants reported that they were married to their partner, 3.9% were engaged and living together with their partner, 4.6% were engaged and not living together with their partner, 15.6% were living together with their partner, 40.0% were dating only their partner, 9.1% were dating their partner more than they date others, 6.5% were dating others as much as they were dating their partner, and 0.7% chose not to disclose the status of their relationship. The average relationship duration was 4.64 years ($SD = 6.07$ years). Approximately 93.5% of participants were in heterosexual relationships.

Procedure

Data for Study 1 were collected in one of two ways. Participants who were recruited from the university completed Study 1 during a data collection session in a computer laboratory on campus. Approximately 10 participants took part in each

on-campus session. Participants who were recruited from Mechanical Turk completed Study 1 online from a remote location of their choosing. Despite this difference in location, all participants completed a nearly identical questionnaire hosted on www.qualtrics.com that contained all of the study materials.

Participants began by answering a series of questions about their current romantic relationship, including relationship status and length. Participants were then asked to provide a baseline evaluation of their relationship. Following their initial evaluation, they completed scales of relational uncertainty, self-esteem, attachment orientation, and implicit theories of relationships. After completing these scales, participants completed the event recall manipulation; they were randomly assigned to one of three conditions in which they wrote about a past event. Following the writing task, participants evaluated their relationship once again and answered several questions about the event they recalled and wrote about. Finally, participants completed demographic characteristics.

Event Recall Manipulation

In all conditions, participants were given a minimum of 2 minutes to think of and write about a specific past experience. Exact instructions for each condition can be found in Appendix A.

Positive event condition. Participants randomly assigned to the positive event condition were asked to write about a time when their partner did or said something that was a compliment to them. Instructions were adapted from Marigold et al.'s (2007) abstract reframing intervention, which was designed to help low self-esteem individuals feel more positively about their relationship.

Negative event condition. Participants randomly assigned to the negative event condition were asked to write about a time when their partner disappointed them.

Neutral event (control) condition. Participants randomly assigned to the control condition were asked to write about a non-relationship past event: a recent trip to the grocery store. Instructions were adapted using the control condition from Mikulincer and Shaver's (2001) attachment security primes.

Measures

The primary predictor variable was relational uncertainty, which was hypothesized to moderate the effect of the manipulation. The dependent variables were event evaluation and relationship evaluation (assessed pre- and post-manipulation by two different measures). Additional questions were included to explore possible moderating associations.

Relational uncertainty. Relational uncertainty was assessed using 9 items from Knobloch and Solomon's (1999) scale. Participants rated their relational uncertainty on a scale ranging from 1 (*completely or almost completely uncertain*) to 7 (*completely or almost completely certain*). Three items measured self-related uncertainty ("Your feelings for your partner," "How much you want this relationship right now," and "Where you want this relationship to go."); three items measured perceptions of partner-related uncertainty ("Your partner's view of this relationship," "Your partner's feelings for you," and "How much your partner wants this relationship right now); and three items measured relationship-related uncertainty ("Whether or not you and your partner are right for each other," "The future of the relationship," "Whether or not this relationship will end soon."). Participants were explicitly

instructed not to rate their level of involvement in their relationship, but rather how certain they are about their current level of involvement. All 9 items were reversed-scored and then averaged to create a composite uncertainty score, with higher scores indicating greater uncertainty ($\alpha = .90$).

Event evaluation. In order to gauge the weight participants placed on the events that they recalled, they responded to two items regarding the event's significance. One item gauged personal importance ("how meaningful was this event to you?"), while the other gauged how important participants believed the event was for their relationship ("how significant was this event to your relationship?"). Both items were measured on a 1 (*not at all)* to 7 (*extremely*) scale and were averaged to create a composite event evaluation score ($\alpha = .87$), with higher scores indicating greater perceived importance of the event recalled.

Relationship evaluations. There were two indicators of relationship evaluations measured both pre- and post-manipulation. One was an established scale measuring relationship quality. The second was the likelihood of breakup scale, which was completed only among Mechanical Turk participants ($n = 123$).

Relationship quality. Relationship quality was measured using eight items selected from the Perceived Relationships Quality Components Inventory (PRQC; Fletcher, Simpson, & Thomas, 2000). Participants rated several aspects of their relationship on a 7-point Likert scale, including satisfaction, commitment, investment, trust, passion, and love. All eight scale items appear in Appendix B and were averaged to create composite scores of pre-manipulation relationship quality ($\alpha = .92$) and post-manipulation relationship quality ($\alpha = .94$). In addition, each participant's change

(pre- to post-) in relationship quality was calculated for descriptive purposes and to check for outliers. While the scale items remained the same from pre- to post-manipulation, the instructions varied slightly, such that the post-manipulation instructions specifically emphasized that participants should respond based on how they felt about their relationship at that exact moment.

Likelihood of breakup. A modified version of Surra's (1985) Chance of Marriage estimate was used to provide a second indicator of relationship quality for MTurk participants. They were asked to estimate the probability that their current relationship will end in one year from 0-100%. In addition, each participant's change (pre- to post-) in likelihood of breakup was calculated for descriptive purposes and to check for outliers.

Manipulation checks. Two questions assessed whether participants believed that the event recall manipulation changed their evaluations of their relationship. Participants rated on a 7-point response scale (1 = *strongly disagree,* 7 = *strongly agree*) the extent to which the writing task they had just completed made them feel more positive and more negative about their relationship.

Auxiliary measures. Several additional measures were included to explore possible moderating associations.

Implicit theories of relationships. Knee, Patrick, and Lonsbary's (2003) 22-item scale was used to capture participants' implicit theories of relationships. Participants rated their level of agreement on a 7-point Likert scale with 11 statements related to growth beliefs (e.g., "The ideal relationship develops gradually over time," and "With enough effort, almost any relationship can work."; $\alpha = .81$) and 11

statements related to destiny beliefs (e.g., "Potential relationship partners are either destined to get along or they are not," and "Relationships that do not start off well inevitably fail,"; α = .90).

Attachment orientation. The ECR – S (Fraley, Heffernan, Vicary, & Brumbaugh, 2011) was used to assess attachment orientation. Participants rated their level of agreement with 9 items on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Three items measured attachment-related anxiety (e.g., "I often worry that romantic partners don't really care for me,"; α = .90) and 6 items measured attachment-related avoidance (e.g., "I don't feel comfortable opening up to romantic partners,"; α = .84).

Self-esteem. One item was used to measure self-esteem: "I have high self-esteem," rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. This single item has been validated against multi-item measures (Robins, Hendin., & Trzesniewski, 2001).

Results

Descriptive Information and Group Differences

Table 1 displays the sample means and simple correlations for all measures in Study 1, while Table 3 displays means within each event recall condition. Despite uncertainty composite scores ranging from 1 to 5.78, participants on average reported feeling relatively certain about their current relationship, with the mean falling below the 3.5 scale midpoint (*M* = 2.43, *SD* = 1.20). Uncertainty was highly correlated with pre-manipulation relationship quality $r(153) = -.70$, $p < .01$ and likelihood of breakup

$r(153) = .51, p < .01$, although there appears to be additional variation in uncertainty that is not accounted for by an individual's current evaluation of their relationship. Subsequent analyses therefore controlled for baseline measures to tap into this unique variation in uncertainty.

Importantly, participants did not vary across conditions in their pre-manipulation levels of uncertainty, or on any other covariates or potential moderators in the experimental design, except for relationship length, $F(2, 151) = 3.19, p = 04$, which therefore was also included as a covariate. At the time of the Study 1, participants in the positive event recall condition had been in their relationship for a shorter period of time on average than participants in the control condition. Tukey post-hoc comparisons did not reveal any other significant differences between conditions.

Manipulation Checks

To test whether the recall manipulation had the intended effect, a one-way ANOVA was run on both manipulation check items assessing the extent to which each event recall condition made them feel more positive or more negative about their relationship. Mean levels by condition on both of the manipulation check items are presented in Table 3.

There was a significant effect of condition on perceptions of how positive the writing task made participants feel about their relationship, $F(2, 149) = 25.99, p < .01$. Post-hoc Tukey comparisons revealed that participants who wrote about a positive event reported feeling more positive about their relationship than did participants who wrote about either a negative or neutral event, $p < .05$. There was also a significant

effect of condition on perceptions of how negative the writing task made participants feel about their relationship, $F(2, 149) = 29.84$, $p < .01$. Post-hoc Tukey comparisons revealed that participants who wrote about a negative event reported feeling more negative about their relationship than did participants who wrote about either a positive or a neutral event, $p < .05$.

In addition, a multiple regression analysis was run on both items to check whether uncertainty moderated the effect of event recall condition. For both perceptions of how positive and how negative recalling the event made participants feel about their relationship, uncertainty did not moderate the main effect of the contrast comparing the positive event vs. control conditions (positive perception: $\beta = .04$, $t[143] = 0.48$, $p = .63$; negative perception: $\beta = -.05$, $t[143] = -0.56$, $p = .58$) or the main effect of the contrast comparing the negative event vs. control conditions (positive perception: $\beta = -.03$, $t[143] = -0.37$, $p = .72$; negative perception: $\beta = .13$, $t[143] = 1.46$, $p = .15$).

Main Analyses

To test the hypothesis that the effect of the event recall manipulation on both event and relationship evaluations would be amplified among individuals experiencing greater uncertainty in their relationship, I ran hierarchical multiple regression analyses on event significance, relationship quality, and likelihood of breakup. A series of models were run predicting each one of the three dependent variables from pre-manipulation relationship quality (or likelihood of breakup, depending on the dependent variable), relationship length, and the centered main effect of uncertainty (entered in step 1), the main effects of event recall condition (dummy-coded contrasts

comparing the positive event vs. control conditions and the negative event vs. control conditions; entered in step 2), and the two-way interactions between uncertainty and each condition contrast (entered in step 3).

Prior to running the models, a change score was computed for the two relationship evaluation dependent variables (i.e., post-manipulation score – pre-manipulation score) to examine whether any participants had an extreme response to the manipulation. The sample means and standard deviations of the relationship quality and likelihood of breaking up change scores are presented in Table 1. Participants with a change score of greater than 3 standard deviations from the mean on a given relationship evaluation dependent variable were considered outliers and subsequently dropped from analysis pertaining to that variable.

Event evaluation. As seen in Table 5, there was a main effect of positive event vs. control condition, $\beta = .59$ $t(144) = 7.44$, $p < .01$, such that participants perceived the positive relationship event to be more significant for their relationship than the neutral event. Contrary to hypothesis 1a, however, the expected uncertainty X positive event vs. control condition interaction was not significant, $\beta = -.02$ $t(144) = -0.27$, $p = .79$.

There was also a significant main effect of negative event vs. control condition, $\beta = .39$, $t(144) = 4.87$, $p < .01$, and this main effect was qualified by the expected uncertainty X negative event vs. control condition interaction, $\beta = .27$, $t(144) = 2.97$, $p < .01$. The interaction was decomposed by examining the simple effect of uncertainty within the negative event condition versus within the control condition. Figure 1 exhibits the decomposed effects on event significance. In support of hypothesis 1b, uncertainty was associated with greater perceived importance of the event recalled

when recalling a negative event, $\beta = .31$, $t(144) = 3.09$, $p < .01$, but not when recalling

a neutral event, $\beta = -.15$, $t(144) = -1.15$, $p = .25$. The interaction was also decomposed

by examining the simple effect of the negative event recall condition (vs. control

condition) among partners with relatively lower relational uncertainty (- 1 SD) versus

high relational uncertainty (+ 1 SD). Simple effects analyses revealed that individuals

relatively high level of relational uncertainty perceived a negative past event to be

more significant than a neutral past event, $\beta = .63$, $t(144) = 5.33$, $p < .01$, while

individuals at a relatively low level of uncertainty did not, $\beta = .14$, $t(144) = 1.30$, $p =$

.19.

Relationship evaluations.

Relationship quality. Three participants had a relationship quality change score

that was more extreme than 3 standard deviations from the mean change score (i.e.,

greater decrease than 1.88) and were excluded from the analysis of relationship quality.

As can be seen in Table 5, neither the main effect for the contrast comparing the

positive event vs. control conditions, $\beta = .05$, $t(142) = 1.46$, $p = .15$, nor its expected

two-way interaction with uncertainty (hypothesis 2a) were significant, $\beta = -.03$, $t(142)$

$= 0.68$, $p = .50$. Similarly, there was no main effect for the contrast comparing the

negative event vs. control conditions, $\beta = -.05$, $t(142) = -1.40$, $p = .17$, and its expected

two-way interaction with uncertainty (hypothesis 2b) was not significant, $\beta = -0.05$,

$t(142) = -1.24$, $p = .22$.

Likelihood of breakup. Three participants (different from those in the previous

model) had a likelihood of breakup change score more extreme than 3 standard

deviations from the mean change score (i.e., greater decrease than 43.0%) and were excluded from the present model.

Contrary to hypothesis 2a, Table 5 reveals neither a main effect of positive event vs. control condition, $\beta = -.01$, $t(110) = -0.65$, $p = .52$, nor the expected the two-way uncertainty X positive event interaction, $\beta = .01$, $t(110) = 0.35$, $p = .73$.

There was also no main effect of negative event vs. control condition, $\beta = 0.01$, $t(110) = 0.65$, $p = .51$. However, the expected two-way uncertainty X negative event vs. control interaction was trending toward significance, $\beta = .03$, $t(110) = 1.80$, $p = .07$. The interaction was decomposed by examining the simple effect of the negative event recall condition (vs. control condition) among partners with relatively lower relational uncertainty (-1 *SD*) versus high relational uncertainty (+1 *SD*). Figure 2 exhibits the decomposed effects on post-manipulation likelihood of breakup. In partial support of hypothesis 2b, an increased likelihood of breakup in the negative recall condition (relative to the control condition) was more pronounced among uncertain individuals (marginal simple effect: $\beta = .04$, $t[110] = 1.83$, $p = .07$) than among less uncertain individuals $\beta = -.02$, $t(110) = -0.75$, $p = .46$.

Auxiliary Analyses

In an exploratory vein, five additional models were run on each dependent variable to examine whether any relationship-relevant variables moderated the hypothesized effects. Growth orientation, destiny orientation, attachment anxiety, attachment avoidance, and self-esteem were each individually added to the original regression models of event evaluation, post-manipulation relationship quality, and post-manipulation likelihood of breakup. That is, for each potential moderator, we

predicted participants' post-manipulation relationship evaluations from (1) the main effects of event recall condition (dummy coded as above), the main effect of uncertainty, and the main effect of the variable being examined as a potential moderator, (2) all possible two-way interactions, and (3) all possible three-way interactions. The models again controlled for relationship length and pre-manipulation relationship quality or likelihood of break-up.

Event evaluation. None of the potential moderating variables interacted with uncertainty and event recall condition in predicting the event evaluation.

Relationship evaluations.

Relationship quality. As seen in Table 6, there was a significant three-way growth orientation X uncertainty X condition interaction involving the comparison between the positive event and control conditions, $\beta = .09$, $t(136) = 2.44$, $p = .02$, but not involving the comparison between the negative event and control conditions, $\beta = -.02$, $t(136) = -0.51$, $p = .61$. I decomposed this interaction to reveal the simple two-way interaction between uncertainty and the contrast between the positive event and control conditions among high (+1 SD) and low (-1 SD) growth-oriented participants. The predicted uncertainty X positive event vs. control condition interaction (hypothesis 2a) was significant among those with high growth beliefs, $\beta = .26$, $t(136) = 2.32$, $p = .02$, but not for low growth beliefs, $\beta = -.12$, $t(136) = 1.20$, $p = .23$. The simple uncertainty X positive event interaction was in the hypothesized direction: high growth-oriented individuals reported greater relationship quality after writing about a positive event than a neutral event at a relatively high level of relational uncertainty

(+1 SD), $\beta = .46$, $t(136) = 2.77$, $p = .01$, but not at a relatively low level of relational uncertainty (-1 SD), $\beta = -.07$, $t(136) = -0.48$, $p = .63$.

Destiny orientation, attachment anxiety, attachment avoidance, and self-esteem did not interact with uncertainty and condition, neither for the comparison between the relationship boost and control conditions nor the comparison between the relationship threat and control conditions.

Likelihood of breakup. None of the potential moderating variables interacted with uncertainty and event recall condition in predicting likelihood of breakup.

Discussion

Study 1 examined how individuals experiencing varying degrees of relational uncertainty responded to information about their relationship by having them recall a past experience with their current partner. Results from study 1 provided partial support for the first set of hypotheses, as there was only an effect of uncertainty on event significance among individuals who recalled a negative past event. In line with hypothesis 1b, relatively uncertain individuals placed greater significance on a past negative event than relatively certain individuals, who did not place greater significance on the past negative event than on a past neutral event. In contrast to hypothesis 1a, however, relatively uncertain individuals did not place greater significance on a positive past event than relatively certain individuals; all individuals placed greater importance on a positive past event than a neutral past event, regardless of their level of uncertainty. Therefore, initial evidence suggests that while uncertain individuals may be sensitive to both positive and negative past relationship information, they may only place greater weight on negative past information than

relatively certain individuals, as relatively certain individuals may also be sensitive to positive relationship information about their relationship.

Alternately, the findings from the Study 1 largely failed to support the second set of hypotheses. In partial support of hypothesis 2b, relatively uncertain individuals reported a slightly increased probability that their relationship would end within one year after recalling a negative past event (relative to control). However, uncertain individuals did not display a greater decrease in relationship quality, nor did they display a greater increase in perceived relationship quality or a greater decrease in likelihood of breakup after recalling a positive past event (relative to control). Despite the lack of support for hypothesis 2a in the overall sample, uncertain individuals with relatively high growth orientations displayed an increase in relationship quality after the positive event recall task (relative to control). Such findings, which suggest that uncertain individuals may only be more inclined to adjust their relationship evaluations when they endorse growth beliefs, are theoretically consistent with the fact that growth orientation is characterized by the belief that relationships can overcome obstacles (Knee, 1998). On the whole, however, initial evidence does not appear to suggest that uncertain individuals are more likely to re-evaluate their relationship in response to past relationship information than certain individuals.

It is important to note, though, that the global relationship evaluations of participants as a whole did not appear to be affected by the event recall manipulation, as there was no main effect of event recall condition on relationship quality or likelihood of breakup, even before accounting for its interaction with relational uncertainty. Thus, it is possible that null findings were due to the fact that the event

recall manipulation simply was not strong enough to affect participants' global evaluations of their relationship, and not because the relationship evaluations of uncertain individuals are not more malleable than relatively confident individuals. Study 2 attempted to address this issue by utilizing a potentially stronger experimental manipulation of relationship information (i.e., false feedback).

In addition to concerns regarding the strength of the relationship information manipulation, Study 1 had a few other limitations that were addressed in Study 2. The main limitation of Study 1 is that its manipulation of relationship information relied on the recall of past events. It is possible that relatively uncertain partners vary systematically from relatively certain partners in their memory and experiences of past relationship events. Uncertain partners may have more negative relationship events and fewer positive relationship events to recall, or have experienced more significant relationship events (e.g., an act of infidelity), which may account for their lack of confidence in the relationship in the first place. Therefore, the observed effects may be due to the fact that relatively uncertain participants simply wrote about different relationship events than relatively certain participants. Study 2 directly addressed this issue by using an experimental manipulation that did not rely on previous relationship experiences and provided a uniform cue about one's relationship across all participants within each condition.

A second limitation relates to demand characteristics. Because the relationship evaluation measures (i.e., relationship quality and likelihood of breakup) appeared both before and after the event recall, it is possible that participants were aware that the event recall manipulation was meant to alter their relationship evaluations. Of

particular concern is the repeated measurement of the likelihood of breakup, as providing the percent probability of one's relationship ending is likely a salient task. To both reduce the chance of and screen for demand characteristics, Study 2 did not include a pre-manipulation measure of likelihood of breakup and utilized a funnel debriefing procedure, in which participants were asked to guess the experimenters' hypotheses.

STUDY 2

The aim of Study 2 was to replicate and extend the findings obtained in Study 1 using a different manipulation, which was designed to boost or threaten participants' evaluations as in Study 1. In Study 2, rather than recalling a past event, participants were given false feedback that their relationship was either better than (boost condition), worse than (threat condition), or no worse (neutral, exploratory condition) than most other relationships. A fourth condition did not provide participants with any feedback about their relationship to serve as a control.

As a conceptual replication, the hypothesis paralleled those of Study 1: It was predicted that individuals would perceive both positive and negative past event involving their partner as having more significance for their relationship than a control task that did not provide feedback, and that such an effect would be greater among more uncertain individuals (hypotheses 1a & 1b). It was further predicted that individuals would display greater relationship evaluations after writing receiving positive feedback than after receiving no feedback at all, and that such an increase would be greater among more uncertain individuals (hypothesis 2a) Alternately, it was predicted that individuals would display lower relationship evaluations after receiving negative feedback than after receiving no feedback at all, and that such decline would

be greater among more uncertain individuals (hypothesis 2b). No a priori hypotheses were advanced regarding the neutral feedback condition.

Method

Participants

Two-hundred and seventeen undergraduates who were currently involved in a romantic relationship were recruited from a large Midwestern university to complete Study 2 in exchange for partial course credit in either an introductory psychology or communication studies course. Of those initially sampled, 22 participants were dropped from analyses because they: (a) reported fabricating their responses ($n = 5$), (b) requested their data be discarded after being debriefed about the false feedback ($n = 6$), and/or (c) indicated suspicion that the feedback they received was fake ($n = 11$), resulting in a final sample of $N = 195$ participants (60.1% female).

Participants ranged in age from 18 to 44 years old, with an average age of 19.69 years old ($SD = 2.92$). Approximately 1.5% of participants reported that they were African American, 18.9% were Asian or Asian American, 68.4% were Caucasian, 3.1% were Hispanic, and 7.1% indicated "other." In terms of relationship status, 0.5% of participants reported that they were married to their partner, 2.0% were engaged, 5.6% were living together with their partner, 85.2% were dating only their partner, 4.1% were dating their partner more than they date others, 2% were dating others as much as they were dating their partner, and 0.5% chose not to disclose the status of their relationship. The average relationship duration was 19.16 months ($SD = 18.40$). Approximately 95.9% of participants were in heterosexual relationships.

Procedure

Data collection sessions took place in a computer laboratory with approximately 10 participants in each session. Participants in Study 2 completed a questionnaire hosted on www.qualtrics.com that contained all of the relevant study materials. At the beginning of the survey, participants read instructions in which it was suggested that a major aim of the study was to develop an assessment tool for romantic relationships, and as a result, they would be given feedback about the quality of their relationship based on their responses in the study questionnaire.

As in Study 1, participants first answered a series of questions about their current romantic relationship and completing several relationship-relevant scales. As in Study 1, participants then provided an initial (pre-manipulation) evaluation of their relationship quality. In contrast to Study 1, participants did not complete a measure of likelihood of break-up. Only one measure of relationship evaluations was included to reduce participant suspicions that these measures were central to the study aims.

After completing their initial evaluation, the questionnaire included material to bolster the cover story suggesting a focus on developing an assessment tool. Participants read a series of vignettes depicting conflicts in a fictional couples and were asked how they would respond if such an event were to occur in their relationship (from Cavallo, Fitzsimmons, & Holmes, 2009). Participants were told that, in addition to their responses on the previous scales, their ratings of the vignettes would be used in developing feedback. Thus, participants had several opportunities to report about their relationship, which presumably increased the believability of the cover story. In reality,

they were randomly assigned to one of four feedback conditions: no feedback (control), positive false feedback, neutral false feedback, or negative false feedback.

Following the feedback manipulation, participants re-evaluated their relationship and were asked to complete a series of questions about the feedback that they had just received, which they were told would help improve the quality of feedback given to future participants. Finally, participants provide demographic information and wrote about any suspicions they had related to study design. Upon completion of the online questionnaire, participants underwent thorough face-to-face debriefing by an experimenter, who explained how and why the feedback was false.

False Feedback Manipulation

The false feedback manipulation was adapted from Lamarche and Murray (2014). The three experimental feedback conditions (positive, neutral, or negative feedback) involved providing participants with feedback about the quality of their relationship, relative to other college couples. In these three conditions, participants were first directed to a page that informed them that their prior responses from the questionnaire were currently being analyzed. After 30 seconds, the page auto-advanced to the page containing feedback that participants were underestimating (positive feedback), overestimating (negative feedback), or had an accurate outlook (neutral feedback) of the quality of their current relationship. Participants spent a minimum of one minute on the feedback page before they were allowed to advance in the survey. Appendix B contains the specific feedback provided in each condition.

Participants who were randomly assigned to the control condition did not receive any feedback about the quality of their relationship. Instead, they completed a

filler task for the equivalent amount of time it took participants in the other conditions to read their feedback, in which they listed as many of the United States as they could.

Measures

Study 2 used the same measures of relational uncertainty ($\alpha = .85$), pre- and post-manipulation relationship quality ($\alpha_{pre} = .85$; $\alpha_{post} = .86$), likelihood of break-up, implicit theories of relationships ($\alpha_{destiny} = .79$; $\alpha_{growth} = .88$), attachment orientation ($\alpha_{anxiety} = .89$; $\alpha_{avoidance} = .82$), and self-esteem as Study 1.

Feedback evaluation. Similar to Study 1, in order to gauge how much importance participants placed on the feedback they received, two items assessed the extent to which they believed the feedback affected their immediate feelings about their relationship ("The feedback affected my immediate feelings about my relationship) and the extent to which they believed the feedback impacts the way they see their relationship ("The feedback impacted the way I see my relationship.") on a *1* (not at all) to *7 (extremely)* scale. The two items were averaged to create a composite feedback evaluation score ($\alpha = .90$), with higher feedback evaluation scores indicating greater perceived importance of the feedback received.

Manipulation checks. Two questions assessed the extent to which participants believed the feedback they had received (or the control task) to be both positive and negative on a *1 (not at all)* to *7 (extremely)* scale.

Auxiliary measures. In addition to including measures of the potential moderating variables (listed above), all participants – regardless of feedback condition – responded to the following exploratory item at the end of the study: "It is important

for me to receive diagnostic information about my relationship," measured on a 1 (*not at all*) to 7 (*extremely*) scale.

Results

Descriptive Information and Group Differences

Table 2 displays the sample means and simple correlations for all measures in Study 2, while Table 4 displays means within each false feedback condition. As in Study 1, participants on average reported feeling relatively certain about their current relationship, with the mean falling well below the 3.5 scale midpoint ($M = 2.33$, $SD = 0.92$; the mean was more than 1 SD below the midpoint). Uncertainty was highly correlated with pre-manipulation relationship quality, $r(194) = -.67$. Although participants were randomly assigned to false feedback condition, pre-manipulation uncertainty levels varied by condition, $F(3, 192) = 2.72$, $p = .05$; participants in the negative feedback condition were significantly more uncertain prior to the manipulation than participants in the neutral feedback condition, $p < .05$. Tukey post-hoc comparisons did not reveal any other significant differences between conditions. Further, none of the covariates or potential moderators varied by condition.

Manipulation Checks

To test whether the false feedback manipulation had the intended effect, a one-way ANOVA was run on both manipulation checks assessing the extent to which the feedback they received was positive or negative. Mean levels by condition on both of the manipulation check items are presented in Table 4.

There was a significant effect of condition on perceptions of how positive the feedback was, $F(3, 188) = 38.28$, $p < .001$. Post-hoc Tukey comparisons revealed that

participants in the positive feedback condition reported the feedback as being more positive than participants in the negative feedback, neutral feedback, and control conditions, $p < .05$. There was also a significant effect of condition on perceptions of how negative the writing task made participants feel about their relationship, $F(3, 188) = 42.23$, $p < .001$. Post-hoc Tukey comparisons revealed that participants in the negative feedback condition reported the feedback as being more negative than participants in the positive feedback, neutral feedback, and control conditions, $p < .05$. Interestingly, participants in the neutral condition reported the feedback as being more positive than participants in the negative feedback and control conditions, $p < .05$, although they did not report the feedback to be a positive as those in the positive feedback conditions. Therefore, the positive and negative feedback manipulations appear to be successful (relative to the control condition), although the relative positivity of the neutral feedback condition suggests that it may have had the potential to boost participants' perceptions of their relationship as well (but not to the same extent as the positive feedback condition).

In addition, a multiple regression analysis was also run on both manipulation check items to check whether uncertainty moderated the effect of feedback condition. For perceptions of how positive the feedback was, uncertainty did not moderate the main effect of the contrast comparing the negative feedback vs. control conditions, $\beta = -.05$, $t(182) = -0.53$, $p = .60$, or the main effect of the contrast comparing the neutral feedback vs. control conditions, $\beta = -.06$, $t(182) = -0.70$, $p = .48$. There was, however, a marginally significant interaction between uncertainty and the main effect of the contrast comparing the positive feedback vs. control conditions, $\beta = -.16$, $t(182) = 1.94$,

p = .053, such that the greater perceived positivity of the positive feedback condition (relative to the control condition) was more pronounced among certain individuals (-1 SD uncertainty: β = .56, *t*[182] = 5.07, *p* < .01) than among less uncertain individuals (+1 SD uncertainty: β = .24, *t*[182] = 2.22, *p* = .03). For perceptions of how negative the feedback was, uncertainty did not moderate the main effect of any of the contrasts comparing the feedback conditions to the control conditions (positive feedback vs. control: β = .09, *t*[182] = 1.08, *p* = .28; negative feedback vs. control: β = .01, *t*[182] = 0.14, *p* = .89; neutral feedback vs. control: β = .07, *t*[182] = 0.77, *p* = .44).

Main Analyses

To test the hypothesis that the effect of positive or negative feedback on a partners' evaluations of their relationship would be amplified among individuals experiencing greater uncertainty in their relationship, three-step hierarchical multiple regression analyses were run on three dependent variables: feedback evaluation, relationship quality, and likelihood of breakup. A series of models were run predicting each one of the three dependent variables from pre-manipulation relationship quality, relationship length, and the centered main effect of uncertainty (entered in step 1), the main effects of feedback condition (three dummy-coded contrasts comparing the neutral feedback versus control conditions, the positive feedback versus control conditions, and the negative feedback versus control conditions; entered in step 2) and the two-way interactions between uncertainty and each contrast (entered in step 3).

Feedback evaluation. As can be seen in Table 7, there were significant main effects for all three contrasts corresponding to each feedback conditions versus the control condition (neutral feedback vs. control: β = .27, *t*(185) = 3.36, *p* < .01; positive

feedback vs. control: $\beta = .53$, $t(185) = 6.77$, $p < .01$; negative feedback vs. control: $\beta =$ .35, $t(185) = 4.43$, $p < .01$). Not surprisingly, participants who received feedback about the quality of their relationship perceived the feedback to be of greater importance than participants in the control condition. None of the predicted two-way interactions with uncertainty were significant (neutral feedback vs. control: $\beta = -.04$, $t(185) = -0.36$, $p =$ .72; positive feedback vs. control: $\beta = -.01$, $t(185) = -0.09$, $p = .93$; negative feedback vs. control: $\beta = .12$, $t(185) = 1.19$, $p = .23$). Figure 3 displays the predicted feedback evaluation scores, which lack full support for hypotheses 1a and 1b.

Of note, however, uncertainty was positively correlated with feedback evaluation (see Table 2), even after controlling for pre-manipulation relationship quality and relationship length (see Table 7, Step 1). This association seems to have occurred even in the control condition, as revealed in Step 2 of the hierarchical regression model (see Table 7). Thus, regardless of condition, individuals who were experiencing greater uncertainty were more likely to perceive the manipulation to be of greater importance to their relationship.

Relationship evaluations.

Relationship quality. Two participants had a relationship quality change score more extreme than 3 standard deviations below the mean and were excluded from the present model.

As can be seen in Table 7, neither the main effect for the contrast comparing the positive feedback vs. control conditions, $\beta = .05$, $t(183) = 1.42$, $p = .16$, nor its expected two-way interaction with uncertainty (hypothesis 2a) were significant, $\beta = -.04$, $t(183) = -1.07$, $p = .29$.

Similarly, there was no main effect for the contrast comparing the negative feedback vs. control conditions, β = -.02, $t(183)$ = -0.54, p = .59, and the expected two-way interaction with uncertainty (hypothesis 2b) was not significant, β = -0.05, $t(183)$ = -1.03, p = .30.

Finally, the main effect for the contrast comparing the neutral feedback vs. control conditions, β = .04, $t(183)$ = 1.10, p = .27, and its two-way interaction with uncertainty were not significant, β = -.03, $t(183)$ = -0.68, p = .50.

Likelihood of breakup. Table 7 reveals that there was not a significant main effect for the contrast comparing the positive feedback vs. control conditions, β = .03, $t(183)$ = 0.47, p = .64, or the contrast comparing negative feedback vs. control conditions, β = -.02, $t(183)$ = -0.34, p = .74. Again in contrast to both hypotheses 2a and 2b, neither comparison yielded the expected two-way interaction with uncertainty (positive feedback vs. control: β = .11, $t(183)$ = 1.59, p = .11; negative feedback vs. control: β = .12, $t(183)$ = 1.42, p = .16).

There was, however, a marginally significant two-way interaction between the contrast comparing the neutral feedback vs. control conditions, β = .15, $t(183)$ = 1.93, p = .06. The interaction was decomposed by examining the simple effect of neutral feedback (vs. control) among partners with relatively lower relational uncertainty (- 1 SD) versus high relational uncertainty (+ 1 SD). Figure 4 exhibits the decomposed effects on post-manipulation likelihood of breakup. Simple effects reveal that an increased likelihood of breakup in the neutral feedback condition (relative to the control condition) was more pronounced among uncertain individuals (marginal simple

effect: $\beta = .17$, $t[183] = 1.82$, $p = .07$) than among less uncertain individuals $\beta = -.08$, $t(183) = -0.91$, $p = .37$.

Auxiliary Analyses

As was conducted in Study 1, five additional models were run on each dependent variable to explore whether any relationship-relevant variables moderate the hypothesized effects. Growth orientation, destiny orientation, attachment anxiety, attachment avoidance, and self-esteem were each individually added to the original regression models of feedback evaluation, post-manipulation relationship quality, and likelihood of breakup. That is, for each potential moderator, we predicted participants' post-manipulation relationship evaluations from (1) the main effects of feedback condition (dummy coded as above), the main effect of uncertainty, and the main effect of the variable being examined as a potential moderator, (2) all possible two-way interactions, and (3) all possible three-way interactions. The models again controlled for relationship length and pre-manipulation relationship quality.

Feedback evaluation. None of the potential moderating variables significantly interacted with uncertainty and feedback condition in predicting feedback evaluation.

Relationship evaluations.

Relationship quality. Table 8 reveals a significant three-way attachment avoidance X uncertainty X condition interaction involving the comparison between the positive feedback and control conditions, $\beta = .09$, $t(175) = 2.13$, $p = .04$, but not involving the comparison between the negative feedback and control conditions, $\beta = .05$, $t(175) = 0.84$, $p = .40$, or the comparison between the neutral feedback and control conditions, $\beta = -.01$, $t(175) = -0.26$, $p = .80$. We decomposed this interaction to reveal

the simple two-way interaction between uncertainty and the contrast between the positive feedback and control conditions among high (+1 SD) and low (-1 SD) levels of attachment avoidance. The uncertainty X positive feedback vs. control condition interaction was significant among those low in avoidance, $\beta = -.25$, $t(175) = 2.32$, $p = .02$, but not among those high in avoidance, $\beta = .16$, $t(175) = 1.03$, $p = .30$. The simple uncertainty X positive feedback interaction, however, was not in the hypothesized direction: individuals relatively low in attachment avoidance reported greater relationship quality after receiving positive feedback than receiving no feedback at all at a relatively low level of relational uncertainty (+1 SD), $\beta = .39$, $t(175) = 2.64$, $p < .01$, but not at a relatively high level of relational uncertainty (-1 SD), $\beta = -.12$, $t(175) = -0.70$, $p = .49$.

There was also a significant three-way destiny orientation X uncertainty X condition interaction involving the comparison between the neutral feedback and control conditions, $\beta = -.12$, $t(175) = -2.55$, $p = .01$, but not involving the comparison between the positive feedback and control conditions, $\beta = -.02$, $t(175) = -0.52$, $p = .61$, or the comparison between the negative feedback and control conditions, $\beta = -.04$, $t(175) = -0.98$, $p = .33$. We decomposed this interaction to reveal the simple two-way interaction between uncertainty and the contrast between the neutral feedback and control conditions among high (+1 SD) and low (-1 SD) levels of destiny orientation. The uncertainty X neutral feedback vs. control condition interaction was significant at high levels of destiny orientation, $\beta = -.24$, $t(175) = 2.06$, $p = .04$, but not at low levels, $\beta = .21$, $t(175) = 1.66$, $p = .10$. The significant simple uncertainty X neutral feedback interaction was further decomposed: individuals relatively high in destiny orientation

reported lower relationship quality after receiving neutral feedback than receiving no feedback at all at a relatively high level of relational uncertainty (+1 SD), $\beta = -.36$, $t(175) = -2.03$, $p = .04$, but not at a relatively high level of relational uncertainty (-1 SD), $\beta = .11$, $t(175) = 0.76$, $p = .45$.

Growth orientation, attachment anxiety, and self-esteem did not interact with uncertainty and condition for any of the contrasts between the false feedback and control conditions.

Likelihood of breakup. None of the potential moderating variables interacted with uncertainty and condition in predicting likelihood of breakup.

Importance of diagnostic relationship information. The association between uncertainty and the importance of receiving diagnostic information about one's relationship among participants across all conditions was also explored. A simple correlation between uncertainty and importance of diagnostic information revealed that uncertain individuals placed greater importance on receiving diagnostic information about their relationship $r(195) = .16$, $p < .05$.

Discussion

Study 2 served as a theoretical replication of Study 1, examining how uncertain individuals respond to a different type of information about their relationship: (false) feedback regarding its quality. However, in contrast to Study 1, the results from Study 2 do not necessarily support the postulation that uncertain individuals place greater weight on relationship information; while on average, all participants who received feedback about their quality of their relationship (positive, negative, or neutral) reported that the experimental manipulation impacted their immediate feelings and

affected the way they see their relationship more than participants who completed the states-listing control task, relatively uncertain individuals did not place greater significance on the manipulation than relatively certain individuals in any of the feedback conditions (as compared to the control condition). Therefore, Study 2 findings did not directly support hypothesis 1a or 1b.

Interestingly, though, the simple correlation between uncertainty and feedback evaluation was significant across all conditions (and remained significant after controlling for relationship length and pre-manipulation quality), such that more uncertain individuals reported that the experimental manipulation affected their immediate feelings and the way they see their relationship to a greater extent. This presents the possibility that more uncertain individuals did indeed place more weight on the feedback that they received than relatively certain individuals, but that the effect was masked by the same pattern occurring among participants in the control condition. In the funnel debriefing for Study 2, participants expressed suspicion about the states-listing control task, with some believing it was supposed to affect their feelings about their relationship in some way. For example, when asked to guess the purpose of the study, one participant in the control condition wrote, "Seeing whether after [the states listing task] the response to relationship questions would be different." If participants believed the states task was important to their evaluations of their relationship in some way, it is possible that uncertain individuals may have reacted to it more strongly. Such a possibility should only be considered lightly, however, as the simple effect of uncertainty in the control condition loses significance when included in a model with

all hypothesized main effects and interactions. Thus, one potential for future research is to investigate whether such effects replicate when a more subtle control task is used.

Similar to Study 1, Study 2 also failed to yield support for hypotheses 2a and 2b. Uncertain individuals did not display a greater increase in perceived relationship quality or a greater decrease in the perceived likelihood that their relationship would end within one year (relative to control) than relatively certain individuals after receiving positive feedback about the quality of their relationship, nor did they display a greater decrease in perceived relationship or increase in the perceived likelihood that their relationship would end within one year (relative to control) than relatively certain individuals after receiving negative feedback about the quality of their relationship. Uncertain individuals did display an increase on likelihood of breakup (relative to control) after receiving neutral feedback, although this effect was marginal. Further, uncertain individuals reported lower relationship quality (relative to control) after receiving neutral feedback, but only if they were high in destiny orientation. Although the boundary condition on the effect on relationship quality is theoretical consistent, as a relatively high destiny orientation is characterized by tendency to diagnose the quality of one's' relationship (Knee, 2001), both of the effects on relationship evaluations were in the neutral feedback condition, in which no a priori hypotheses were advanced. Thus, results from Study 2 largely do not suggest that uncertain individuals are more likely to re-evaluate their overall relationship than relatively confident individuals. Though it is important to note that, as in Study 1, the global relationship evaluations of participants as a whole did not appear to be affected by the false feedback manipulation, as there was no main effect of feedback condition on

relationship quality or likelihood of breakup, even before accounting for its interaction with relational uncertainty, calling into question the strength of the false feedback manipulation to produce such downstream consequences.

GENERAL DISCUSSION

Unlike they are often presented in the current literature on romantic relationship, people's evaluations about their romantic relationships are not static. Feelings of satisfaction and commitment fluctuate over time, and such fluctuations have important ramifications for the well-being of both the relationship and the individual partners within it, predicting important outcomes such as relationship dissolution (Arriaga, 2001; Arriaga et al., 2006; Knopp et al., 2014) and psychological distress and life satisfaction (Whitton et al., 2014). While there is some evidence to suggest that relational uncertainty is one factor contributing to the volatility of one's relationship evaluations over time (Arriaga et al. 2007, Whitton et al., 2014), the present research provides the first experimental test of the psychological mechanisms underlying this effect. Given the well-established link between uncertainty and increased information in the attitudinal literature (e.g., Tiedens & Linden, 2001), I have proposed that individuals who feel uncertain about their relationship are more sensitive to cues signaling the status of their relationship, motivated by a desire to gain more confidence about where things stand. Specifically, we suggested that uncertain individuals are more likely to scrutinize – and thus place greater weight on – information about their relationship, which in turn may lead to more frequent re-evaluations of their relationship.

Study 2 provided initial evidence for a motivation amongst uncertain

individuals to seek information in order to gain confidence, as relational uncertainty

was associated with a greater importance of receiving diagnostic information about

one's relationship. Furthermore, Studies 1 and 2 revealed that uncertain individuals are

likely sensitive to both positive and negative information about their current

relationship. Individuals experiencing a high level of uncertainty reported placing

greater significance on positive and negative past events in their relationship than a

neutral event, as well as on positive and negative feedback about their relationship than

a control task. However, only partial support was provided for the hypothesis that

uncertain individuals place *more* weight on relationship cues than confident

individuals, as relatively uncertain individuals only placed significance upon

information to a greater extent than relatively certain individuals after recalling a

negative past event; while there was a simple association between uncertainty and

significance in Study 2, further research is needed to clarify this effect, as previously

discussed. Regardless, Studies 1 and 2 also revealed that confident individuals are

likely sensitive to relationship information as well, since they placed greater

significance on all of the experimental tasks than the control tasks, except for the

negative past event. Such findings suggest the alternate possibility that perhaps all

individuals scrutinize relationship cues to a similar extent. This idea is also consistent

with the attitudinal literature, as studies on attitudinal change demonstrate that

individuals typically use systematic (versus heuristic) information processing when the

information is of high importance or personally relevant (e.g., Chaiken, 1980), and

there are likely few things more personally relevant than one's own romantic relationship.

However, the alternate possibility that all individuals are sensitive to relationship information does not explain inconsistency between Study 1 and Study 2, in which relatively certain individuals placed significance on negative feedback (vs. control), but on a negative past event (vs. control). I suggest this difference is likely due to the difference in the type of relationship information that participants received (i.e., past information vs. new information). The finding from Study 1 that relatively confident individuals did not place greater significance on a negative past event in their relationship than on a neutral past event falls in line with research on relationship commitment. Highly committed individuals have been shown be more likely to forgive relationship transgressions by one's partner (Finkel, Rusbult, Kumashiro, & Hannon, 2002) and to re-interpret negative past events and even harmful acts committed by one's partner in a more positive manner (e.g., Murray & Holmes, 1994; Arriaga, 2002) to promote the persistence of the relationship. Given that relational uncertainty was highly correlated with relationship quality (of which commitment was a component), it is possible that relatively confident individuals in Study 1 did not react to the negative information, as they had already re-appraised the past event to be insignificant to their relationship. Alternately, relatively confident individuals in Study 2 may have reacted to the negative feedback, as it was new information, and they had not yet had the time to re-interpret it. Thus, it appears that the event of uncertainty on reactivity to relationship information may depend on whether the information being evaluated is new or not.

Despite the partial evidence for reactivity to the relationship information manipulations, Studies 1 and 2 failed to find any robust downstream effects of uncertainty on global relationship evaluations. Although relatively uncertain individuals re-evaluated the likelihood that their relationship was to end in response to a past negative event, as well as re-evaluated their relationship quality in response to a positive past event if they had a high growth orientation, and in response to neutral feedback if they had a high destiny orientation, the overall effect on likelihood of break up was only marginally significant, and neither of the moderations effects replicated in the other study. While the results from Studies 1 and 2 suggest that the relationship evaluations of uncertain individuals are not more subject to change in response to relationship information than confident individuals, there was not an overall effect of either of the relationship information manipulations on relationship evaluations, calling into effect the strength of the experimental manipulations. On one hand, a major strength of the present research is that it is the first experimental investigation on the effect of uncertainty on individuals' responses to relationship information, allowing for experimental control over the information participants received about their relationship. On the other hand, however, it is unlikely that one experimental manipulation in the laboratory will have a detectable effect on an individual's global evaluation of his or her relationship, which on the whole tend to be relatively stable (Arriaga, 2001) and are likely based upon numerous bits of information compounded over time. Therefore, future research should focus on longitudinal, in-vivo designs (such as daily diary or experience sampling) to clarify uncertainty's role in the volatility of relationship evaluations.

Another limitation of the present research is its sample size. Although post-hoc analyses revealed that Study 1 was adequately powered to detect the effect of uncertainty on event significance (.80 at $\alpha = .05$), and the sample size for Study 2 was based off of this effect size from Study 1, Study 2 was underpowered in its analysis of the effect of uncertainty on feedback significance (.19 at $\alpha = .05$). Further, both Studies 1 and 2 were severely underpowered in their analyses on the downstream effect of uncertainty on relationship quality (Study 1: .23 at $\alpha = .05$; Study 2: .06 at $\alpha = .05$). Therefore, even if there is a relatively small effect of uncertainty on relationship evaluations in response to the relationship information manipulation, the sample sizes from Studies 1 and 2 were likely too small to detect it.

A final limitation of the present research is the possibility of demand characteristics. Despite removing likelihood of breakup as a pre-manipulation measure in Study 2, 39 of the 195 participants in Study 2 reported suspicion that experimenters were interested in examining how the feedback they received affects their perceptions of their relationship (funnel debriefing was not done in Study 1). While excluding those participants from analysis does not change the pattern of results, demand characteristics remain a possible explanation for the null findings, as participants from Study 1 and other participants from Study 2 may have figured out that the Studies were examining change in their relationship evaluations without reporting it. Thus, future research may wish to use more distractor measures or provide a more elaborate cover story.

Limitations aside, the present research advances theory on relational uncertainty. While the present research does not provide clear-cut evidence as to

whether uncertain individuals place greater weight on relationship information than relatively confident individuals, it does provide some initial evidence that relatively uncertain individuals do indeed respond to both positive and negative information about their relationship – a question left unanswered in previous research on relational uncertainty. Such findings have broader implications for the trajectory of the relationships; if uncertain individuals are not selectively sensitive to negative relationship information, this suggests that seeking greater confidence in one's evaluations does not necessarily have to lead to decreases in relationship quality over time or relationship dissolution, as is often the case in relationships characterized by high volatility. That is, relational uncertainty may also lead to more stable or perhaps even increases in relationship satisfaction if the uncertain individual is alerted to the positive aspects of his or her relationship over time.

LIST OF REFERENCES

LIST OF REFERENCES

Arriaga, X. B. (2001). The ups and downs of dating: Fluctuations in satisfaction in
newly formed romantic relationships. *Journal of Personality and Social
Psychology*, *80*, 754-765.

Arriaga, X. B. (2002). Joking violence among highly committed individuals. *Journal of
Interpersonal Violence, 17,* 591-610.

Arriaga, X. B., Reed, J. T., Goodfriend, W., & Agnew, C. R. (2006). Relationship
perceptions and persistence: Do fluctuations in perceived partner commitment
undermine dating relationships? *Journal of Personality and Social Psychology*,
91, 1045-1065.

Arriaga, X. B., Slaughterbeck, E. S., Capezza, N. M., & Hmurovic, J. L. (2007). From
bad to worse: Relationship commitment and vulnerability to partner
imperfections. *Personal Relationships*, *14*, 389-409.

Briñol, P., Petty, R. E., Gallardo, I., & DeMarree, K. G. (2007). The effect of self-
affirmation in nonthreatening persuasion domains: Timing affects the process.
Personality and Social Psychology Bulletin, 33(11), 1533-1546.

Campbell, L., Simpson, J. A., Boldry, J., & Kashy, D. A. (2005). Perceptions of
conflict and support in romantic relationships: The role of attachment anxiety.
Journal of Personality and Social Psychology, *88*, 510-531.

Cavallo, J. V., Fitzsimons, G. M., & Holmes, J. G. (2009). Taking chances in the face of threat: Romantic risk regulation and approach motivation. *Personality and Social Psychology Bulletin*, *36*, 737-751.

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, *39,* 752-766.

Fletcher, G. J., Simpson, J. A., & Thomas, G. (2000). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality and Social Psychology Bulletin*, *26*, 340-354.

Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The experiences in close relationships—Relationship Structures Questionnaire: A method for assessing attachment orientations across relationships. *Psychological Assessment*, *23*, 615-630.

Holmes, J. G., & Rempel, J. K. (1989). Trust in close relationships. In C. Hendrick (Ed.), *Close relationships: Review of personality and social psychology* (Vol. 10, pp. 187-220). Newbury Park, CA: Sage.

Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological Bulletin*, *118*, 3-34.

Knee, C. R. (1998). Implicit theories of relationships: Assessment and prediction of romantic relationship initiation, coping, and longevity. *Journal of Personality and Social Psychology*, *74*, 360-370.

Knee, C. R., Nanayakkara, A., Vietor, N. A., Neighbors, C., & Patrick, H. (2001).

    Implicit theories of relationships: Who cares if romantic partners are less than

    ideal?. *Personality and Social Psychology Bulletin*, *27*, 808-819.

Knee, C. R., Patrick, H., & Lonsbary, C. (2003). Implicit theories of relationships:

    Orientations toward evaluation and cultivation. *Personality and Social*

    Psychology Review, *7*, 41-55.

Knobloch, L. K., & Solomon, D. H. (1999). Measuring the sources and content of

    relational uncertainty. *Communication Studies*, *50*, 261-278.

Knopp, K., Rhoades, G. K., Stanley, S., Owen, J., & Markman, H. (2014). Fluctuations

    in commitment over time and relationship outcomes. *Couple and Family*

    Psychology: Research and Practice, *3*, 220-231.

Lamarche, V. M., & Murray, S. L. (2014). Selectively myopic? Self-esteem and

    attention bias in response to potential relationship threats. *Social Psychological*

    and Personality Science, *5*, 786-795.

Le, B., Dove, N. L., Agnew, C. R., Korn, M. S., & Mutso, A. A. (2010). Predicting

    non-marital romantic relationship dissolution: A meta-analytic synthesis.

    Personal Relationships, 17, 377-390.

MacDonald, G., & Borsook, T. K. (2010). Attachment avoidance and feelings of

    connection in social interaction. *Journal of Experimental Social Psychology*,

    46, 1122-1125.

Marigold, D. C., Holmes, J. G., & Ross, M. (2007). More than words: Reframing

    compliments from romantic partners fosters security in low self-esteem

    individuals. *Journal of Personality and Social Psychology*, *92*, 232-248.

Mikulincer, M., & Shaver, P. R. (2001). Attachment theory and intergroup bias: Evidence that priming the secure base schema attenuates negative reactions to out-groups. *Journal of Personality and Social Psychology*, *81*(1), 97-115.

Murray, S. L., & Holmes, J. G. (1994). Storytelling in close relationships: The construction of confidence. *Personality and Social Psychology Bulletin, 20,* 650-663.

Murray, S. L., & Holmes, J. G. (1999). The (mental) ties that bind: Cognitive structures that predict relationship resilience. *Journal of Personality and Social Psychology*, *77*(6), 1228-1244.

Murray, S. L., Holmes, J. G., & Griffin, D. W. (2000). Self-esteem and the quest for felt security: How perceived regard regulates attachment processes. *Journal of Personality and SocialPsychology*, *78*, 478-498.

Murray, S. L., Holmes, J. G., MacDonald, G., & Ellsworth, P. C. (1998). Through the looking glass darkly? When self-doubts turn into relationship insecurities. *Journal of Personality and Social Psychology*, *75*, 1459-1480.

Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology*, *66*, 219-230.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, *27*, 151-161.

Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, *5*, 357-387.

Surra, C. A. (1985). Courtship types: Variations in interdependence between partners and social networks. *Journal of Personality and Social Psychology*, *49*, 357-375.

Surra, C. A., & Longstreth, M. (1990). Similarity of outcomes, interdependence, and conflict in dating relationships. *Journal of Personality and Social Psychology, 59*, 501-516.

Tiedens, L. Z., & Linton, S. (2001). Judgment under emotional certainty and uncertainty: The effects of specific emotions on information processing. *Journal of Personality and Social Psychology*, *81*, 973-988.

Van Harreveld, F., Van der Pligt, J., & Yael, N. (2009). The agony of ambivalence and ways to resolve it: Introducing the MAID model. *Personality and Social Psychology Review*, *13*, 45-61.

Weary, G., & Jacobson, J. A. (1997). Causal uncertainty beliefs and diagnostic information seeking. *Journal of Personality and Social Psychology*, *73*, 839-848.

Weary, G., Marsh, K. L., Gleicher, F., & Edwards, J. A. (1993). Depression, control motivation, and the processing of information about others. *Control Motivation and Social Cognition,* 255-287.

Whitton, S. W., Rhoades, G. K., & Whisman, M. A. (2014). Fluctuation in relationship

quality over time and individual well-being main, mediated, and moderated

effects. *Personality and Social Psychology Bulletin*, *40*, 858-871.

Whitton, S. W., & Whisman, M. A. (2010). Relationship satisfaction instability and

depression. *Journal of Family Psychology*, *24*, 791-794.

APPENDICES

Appendix A

MANIPULATIONS

STUDY 1 – EVENT RECALL

Positive Relationship Event:

Think of a time when your partner said or did something that was a compliment to you – for example, when she/he expressed that you have a personal quality or ability that he/she thinks very highly of, or that something you did really impressed him/her.

In the box below, explain **why** your partner admired you. Describe **what it meant to you** and its **significance** for your relationship.

You will have at least two minutes to think and write about your experience (i.e., before the button below allows you to advance), so please feel free to take your time.

Negative Relationship Event:

Think of a time when your partner said or did something that was disappointing to you, no matter how small – for example, a time your partner did not follow through on something he/she said that he/she would do, or when he/she acted in a way that was not good for you (with or without realizing it).

In the box below, describe exactly **what** your partner did or said to you. Include any details you can recall about where you two were at the time, what you were doing, what you were both wearing, etc.

You will have at least two minutes to think and write about your experience (i.e., before the button below allows you to advance), so please feel free to take your time.

Neutral Event (Control):

Imagine yourself going to a grocery store, walking up and down the aisles while looking for products to buy.

Please write about an experience you have had that is similar to the one described in the scenario. Choose an experience that lasted at least 15 minutes and try to be **as detailed as possible** – describe where you were, what you bought or forgot to buy, what you were wearing, etc.)

You will have at least two minutes to think and write about your experience (i.e., before the button below allows you to advance), so please feel free to take your time.

STUDY 2 – FALSE FEEDBACK

Neutral Feedback:

Results: Accurate Outlook

Social psychologists at Purdue and elsewhere have been studying romantic relationships for many years.

This research reveals that many people *overestimate* the quality of their relationships; *people think things are better than they actually are*. This happens because people can be too willing to make excuses for their partner and problems in their relationship. For example, research has demonstrated that people often are too likely to forgive and make compromises in their relationships. Sometimes a partner's inconsiderate and selfish behavior is a sign that they might not be as caring or committed as they could be. Relationships can get into trouble when people are too forgiving.

Unfortunately, the tendency to think things are better than they are can result in being taken for granted. People repeatedly forgive and accommodate, and in the long run, partners can take advantage. They become less responsive, offer fewer apologies, and are less willing to compromise. Many relationships eventually end because of this.

In your relationship, this may or may not be the case. You and your partner may not be equally forgiving, but overall your relationship doesn't seem to have more issues than most.

Moving forward, in all relationships partners need to be responsive to each other's needs. They shouldn't take each other for granted. Relationships need to be a two-way street.

Positive Feedback:

Results: Underestimation

Social psychologists at Purdue and elsewhere have been studying romantic relationships for many years.

This research reveals that many people *overestimate* the quality of their relationships; *people think things are better than they actually are*. This happens because people can be too willing to make excuses for their partner and problems in their relationship. For example, research has demonstrated that people often are too likely to forgive and make compromises in their relationships. Sometimes a partner's inconsiderate and selfish behavior is a sign that they might not be as caring or committed as they could be. Relationships can get into trouble when people are too forgiving.

Unfortunately, the tendency to think things are better than they are can result in being taken for granted. People repeatedly forgive and accommodate, and in the long run, partners can take advantage. They become less responsive, offer fewer apologies, and are less willing to compromise. Many relationships eventually end because of this.

In your relationship, however, it seems like this is not the case. You and your partner may not be equally forgiving, but overall your relationship is much stronger than most.

Moving forward, keep up your efforts to be responsive to each others' needs. Recognize that you don't have as many issues with taking each other for granted. Relationships need to be a two-way street, and yours is a good example.

Negative Feedback:

Results: Overestimation

Social psychologists at Purdue and elsewhere have been studying romantic relationships for many years.

This research reveals that many people *overestimate* the quality of their relationships; *people think things are better than they actually are*. This happens because people can be too willing to make excuses for their partner and problems in their relationship. For example, research has demonstrated that people often are too likely to forgive and make compromises in their relationships. Sometimes a partner's inconsiderate and selfish behavior is a sign that they might not be as caring or committed as they could be. Relationships can get into trouble when people are too forgiving.

Unfortunately, the tendency to think things are better than they are can result in being taken for granted. People repeatedly forgive and accommodate, and in the long run, partners can take advantage. They become less responsive, offer fewer apologies, and are less willing to compromise. Many relationships eventually end because of this.

In your relationship, it seems like this is particularly the case. You are your partner do not seem to be equally forgiving, and your relationship may run into more problems than most.

Moving forward, recognize that you both need to be responsive to each other's needs. Don't take each other for granted. Relationships need to be a two-way street.

No Feedback (Control):

Please list as many of the United States as you can. The page will auto-advance in one minute.

Appendix B

<u>RELATIONSHIP QUALITY MEASURE</u>

For each question, please select the answer that most closely matches how you feel about your current romantic partner and relationship (*Note: pre-manipulation instructions end here*) **<u>at this moment</u>** (*Note: post-manipulation instructions end here).*

1	2	3	4	5	6	7

Not At All   Somewhat   Extremely

1.   How satisfied are you with your relationship?

2.*   Are your alternatives attractive to you (dating another, spending time with friends or on your own, etc.)?

3.*   Have you put a great deal into your relationship that you would lose if the relationship were to end?

4.   How committed are you to your relationship?

5.   How intimate is your relationship?

6.   How much do you trust your partner?

7.   How much can you count on your partner?

8.   How dependable is your partner?

9.   How passionate is your relationship?

10.   How much do you love your partner?

Note. *Items not included in Fletcher et al.'s (2000) Perceived Relationship Quality Components Scale and thus excluded from the relationship quality composite score in analyses. Embedded from Rusbult et al.'s (1998) Investment Model Scale.

Appendix C

Table 1

Study 1 Descriptive Statistics and Simple Correlations (N = 154 for Variables 1-4, 8-14; N = 121 for Variables 5-7)

Variable	1	2	3	4	5	6	7
1. Uncertainty	—						
2. Relationship Quality (Pre)	-0.70*	—					
3. Relationship Quality (Post)	-0.69*	0.90*	—				
4. Relationship Quality (Difference)	-0.11	-0.01	0.43*	—			
5. Likelihood of Breakup (Pre)	0.51*	-0.56*	-0.54*	-0.10	—		
6. Likelihood of Breakup (Post)	0.52*	-0.59*	-0.58*	-0.13	0.92*	—	
7. Likelihood of Breakup (Difference)	-0.03	-0.02	-0.04	-0.05	-0.28*	0.12	—
8. Event Significance	-0.10	0.11	0.14	0.07	-0.10	-0.12	-0.05
9. Self-Esteem	-0.26*	0.23*	0.18*	-0.08	-0.21*	-0.11	0.27*
10. Attachment Anxiety	0.35*	-0.33*	-0.23*	0.18*	0.15	0.13	-0.06
11. Attachment Avoidance	0.44*	-0.46*	-0.43*	-0.03	0.17	0.19*	0.03
12. Growth Orientation	-0.28*	0.21*	0.28*	0.17*	-0.16	-0.14	0.06
13. Destiny Orientation	-0.09	-0.03	-0.02	-0.01	-0.13	-0.05	0.21*
M	2.43	5.50	5.49	-0.02	30.86	29.38	-1.41
SD	1.20	1.29	1.43	0.62	34.88	33.97	13.85

(*table continues*)

Variable		8	9	10	11	12	13
1. Uncertainty							
2. Relationship Quality (Pre)							
3. Relationship Quality (Post)							
4. Relationship Quality (Difference)							
5. Likelihood of Breakup (Pre)							
6. Likelihood of Breakup (Post)							
7. Likelihood of Breakup (Difference)							
8. Event Significance		—					
9. Self-Esteem		-0.05	—				
10. Attachment Anxiety		0.04	-0.37*	—			
11. Attachment Avoidance		-0.01	-0.27*	0.47*	—		
12. Growth Orientation		0.13	-0.04	0.01	-0.21*	—	
13. Destiny Orientation		0.09	0.25*	0.06	0.13	0.01	—
	M	4.56	5.16	3.93	2.59	5.38	4.42
	SD	1.80	1.64	2.01	1.18	0.81	1.25

Note. *p < .05.

Table 2

Study 2 Descriptive Statistics and Simple Correlations (N = 195)

Variable	1	2	3	4	5	6	7
1. Uncertainty	—						
2. Relationship Quality (Pre)	-0.67*	—					
3. Relationship Quality (Post)	-0.69*	0.90*	—				
4. Relationship Quality (Difference)	-0.14*	-0.08	0.36*	—			
5. Likelihood of Breakup (Post)	0.69*	-0.59*	-0.59*	-0.08	—		
6. Feedback Significance	0.27*	-0.21*	-0.21*	-0.03	0.27*	—	
7. Importance of Receiving Diagnostic Info	0.16*	-0.10	-0.14	-0.10	0.12	0.47*	—
8. Self-Esteem	-0.01	-0.01	0.00	0.01	0.11	-0.06	-0.15*
9. Attachment Anxiety	0.17*	-0.16*	-0.13	0.06	0.12	0.13	0.11
10. Attachment Avoidance	0.39*	-0.52*	-0.51*	-0.05	0.30*	0.12	0.00
11. Growth Orientation	-0.10	0.13	0.17*	0.11	0.00	0.14	0.23*
12. Destiny Orientation	0.03	-0.06	-0.01	0.11	0.06	0.10	0.04
M	2.33	6.08	6.06	-0.02	24.86	3.12	4.52
SD	0.92	0.75	0.80	0.35	26.49	1.77	1.66

(*table continues*)

Variable		8	9	10	11	12
1. Uncertainty						
2. Relationship Quality (Pre)						
3. Relationship Quality (Post)						
4. Relationship Quality (Difference)						
5. Likelihood of Breakup (Post)						
6. Feedback Significance						
7. Importance of Receiving Diagnostic Info						
8. Self-Esteem		—				
9. Attachment Anxiety		-0.26*	—			
10. Attachment Avoidance		0.01	0.23*	—		
11. Growth Orientation		0.06	0.17*	-0.24*	—	
12. Destiny Orientation		0.09	0.20*	0.11	0.05	—
	M	5.22	3.49	2.30	5.24	3.66
	SD	1.28	1.77	1.00	0.77	1.01

Note. *p* < .05.

Table 3

Study 1 Means and Standard Deviations by Condition

Variable (By Type in Design)	Condition					
	Control (*n* = 56)		Positive Event (*n* = 47)		Negative Event (*n* = 51)	
	M	*(SD)*	*M*	*(SD)*	*M*	*(SD)*
Independent Variable						
Uncertainty	2.56	(1.25)	2.51	(1.28)	2.20	(1.07)
Covariates						
Relationship Length	73.21[a]	(98.21)	37.48[b]	(44.92)	54.03[a]	(55.50)
Relationship Quality (Pre)	5.35	(1.44)	5.62	(1.17)	5.54	(1.22)
Likelihood of Breakup (Pre)	36.77	(36.62)	25.71	(34.33)	29.25	(33.33)
Dependent Variables						
Relationship Quality (Post)	5.02	(2.02)	5.49	(1.54)	5.02	(1.73)
Likelihood of Breakup (Post)	34.52	(34.41)	22.89	(32.43)	29.74	(34.72)
Event Significance	3.46[c]	(1.78)	5.64[a]	(1.24)	4.75[b]	(1.61)
Difference Scores						
Relationship Quality (*N* = 151)[1]	-0.04	(0.46)	0.15	(0.53)	-0.09	(0.59)
Likelihood of Breakup (*N* = 118)[1]	-0.02	(7.48)	0.31	(1.17)	-1.03	(4.61)

(*table continues*)

Variable (By Type in Design)	Condition					
	Control (n = 56)		Positive Event (n = 47)		Negative Event (n = 51)	
	M	*(SD)*	*M*	*(SD)*	*M*	*(SD)*
Manipulation Checks						
Writing about this event made me feel....						
...more positive about my relationship	3.22[b]	*2.09*	5.52[a]	*1.53*	2.98[b]	*2.00*
...more negative about my relationship	2.38[b]	*1.82*	1.91[b]	*1.66*	4.55[a]	*1.95*

Note. Within rows, mean values with different superscripts are significantly different ($p < .05$), as indicated by results of Tukey multiple-range tests. For difference scores, * denotes a significant change ($p < .05$) from pre to post-manipulation measurement within condition, as indicated by a repeated measures ANOVA. [1]Values for variable exclude outliers.

Table 4

Study 2 Means and Standard Deviations by Condition

	Condition							
	Control (n = 48)		Neutral Feedback (n = 49)		Positive Feedback (n = 50)		Negative Feedback (n = 49)	
Variable (By Type in Design)	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Independent Variable								
Uncertainty	2.37[ab]	(0.84)	2.07[b]	(0.93)	2.29[ab]	(0.79)	2.59[a]	(1.05)
Covariates								
Relationship Length	17.27	(13.78)	22.91	(26.14)	18.94	(14.56)	17.47	(16.42)
Relationship Quality (Pre)	6.06	(0.78)	6.24	(0.68)	6.13	(0.70)	5.91	(0.80)
Dependent Variables								
Relationship Quality (Post)	6.03[ab]	(0.77)	6.25[a]	(0.71)	6.18[ab]	(0.71)	5.78[b]	(0.92)
Likelihood of Breakup (Post)	25.26	(24.34)	20.35	(25.21)	24.82	(25.12)	29.01	(30.92)
Feedback Significance	1.91[c]	(1.32)	2.93[b]	(1.74)	4.02[a]	(1.58)	3.55[ab]	(1.71)
Difference Score								
Relationship Quality (N = 193)[1]	-0.06	0.28	0.01	0.30	0.02	0.28	-0.11*	0.33

(*table continues*)

	Condition							
	Control (n = 48)		Neutral Feedback (n = 49)		Positive Feedback (n = 50)		Negative Feedback (n = 49)	
Variable (By Type in Design)	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Manipulation Checks								
How ____ was the feedback you received?								
Positive	4.36[d]	1.67	5.14[b]	1.38	6.00[a]	1.05	3.06[c]	1.52
Negative	3.32[b]	1.74	2.76[b]	1.53	2.00[c]	1.07	5.10[a]	1.33

Note. Within rows, mean values with different superscripts are significantly different ($p < .05$), as indicated by results of Tukey multiple-range tests. For difference scores, * denotes a significant change ($p < .05$) from pre to post-manipulation measurement within condition, as indicated by a repeated measures ANOVA. [1]Values for variable exclude outliers

Table 5

Study 1 Main Analyses: Model Coefficients for Multiple Regressions Predicting Post-Manipulation Relationship Quality (RQ), Likelihood of Breakup (Breakup), and Event Significance (Event Sig)

		Dependent Variable		
		RQ ($N = 150$)	Breakup ($N = 118$)	Event Sig ($N = 154$)
Predictor		β	β	β
Step 1				
Relationship Length		-.09**	-.01	-.04
Relationship Quality/Likelihood of Breakup (Pre)		.83**	.98**	.05
Uncertainty		-.12*	.02	-.07
	R^2	.87**	.98**	.01
Step 2				
Relationship Length		-.08*	-.01	.07
Relationship Quality/Likelihood of Breakup (Pre)		.82**	.98**	.05
Uncertainty		-.13**	.02	-.04
Positive Event vs. Control		.05	-.01	.59**
Negative Event vs. Control		-.04	.01	.36**
	ΔR^2	.01*	.00	.26**
Step 3				
Relationship Length		-.08*	-.01	.09
Relationship Quality/Likelihood of Breakup (Pre)		.82**	.97**	.05
Uncertainty		-.13*	.00	-.15
Positive Event vs. Control		.05	-.01	.59**
Negative Event vs. Control		-.05	.01	.39**
Uncertainty X Positive Event vs. Control		.03	.01	-.03
Uncertainty X Negative Event vs. Control		-.05	.03[†]	.27**
	ΔR^2	.00	.00	.06**

Note. [†]$p < .10$. *$p < .05$. **$p < .01$. Model coefficients are standardized.

Table 6

Study 1 Auxiliary Analyses: Model Coefficients for Three-Way Interactions Between Potential Moderators, Uncertainty, and Event Recall Condition

	Dependent Variable		
	RQ	Breakup	Event Sig
	(*N* = 150)	(*N* = 118)	(*N* = 154)
Moderator	β	β	β
Self-Esteem			
Uncertainty X Positive Event vs. Control	-.02	.00	-.04
Uncertainty X Negative Event vs. Control	.02	.00	-.04
Attachment Anxiety			
Uncertainty X Positive Event vs. Control	-.03	.01	.07
Uncertainty X Negative Event vs. Control	-.04	.00	-.03
Attachment Avoidance			
Uncertainty X Positive Event vs. Control	.01	.01	.00
Uncertainty X Negative Event vs. Control	-.06	-.01	-.06
Destiny Orientation			
Uncertainty X Positive Event vs. Control	.01	-.01	-.02
Uncertainty X Negative Event vs. Control	-.04	.01	-.05
Growth Orientation			
Uncertainty X Positive Event vs. Control	.09*	-.01	.04
Uncertainty X Negative Event vs. Control	-.02	-.02	.05

Note. *p < .05. Model coefficients are standardized.

Table 7

Study 2 Main Analyses: Model Coefficients for Multiple Regressions Predicting Post-Manipulation Relationship Quality (RQ), Likelihood of Break-up (Breakup), and Feedback Significance (Feedback Significance)

Predictor		Dependent Variable		
		RQ $(N = 193)$ β	Breakup $(N = 195)$ β	Feedback Sig $(N = 195)$ β
Step 1				
Relationship Length		-.03	-.07	.03
Relationship Quality (Pre)		.83**	-.23**	-.07
Uncertainty		-.14**	.52**	.23*
	R^2	.86**	.51**	.07**
Step 2				
Relationship Length		-.03	-.07	.02
Relationship Quality (Pre)		.83**	-.24**	-.06
Uncertainty		-.13**	.53**	.22*
Neutral Feedback vs. Control		.04	.04	.28**
Positive Feedback vs. Control		.05	.03	.53**
Negative Feedback vs. Control		-.02	-.02	.37**
	ΔR^2	.00	.00	.19**
Step 3				
Relationship Length		-.03	-.07	.02
Relationship Quality (Pre)		.83**	-.24**	-.07
Uncertainty		-.07	.33**	.16
Neutral Feedback vs. Control		.04	.05	.27**
Positive Feedback vs. Control		.05	.03	.53**
Negative Feedback vs. Control		-.02	-.02	.35**
Uncertainty X Neutral Feedback vs. Control		-.03	.15[†]	-.04
Uncertainty X Positive Feedback vs. Control		-.04	.11	-.01
Uncertainty X Negative Feedback vs. Control		-.05	.12	.12
	ΔR^2	.00	0.01	0.01

Note. *$p < .05$. **$p < .01$. Model coefficients are standardized.

Table 8

Study 2 Auxiliary Analyses: Model Coefficients for Three-Way Interactions Between Potential Moderators, Uncertainty, and False Feedback Condition

	Dependent Variable		
	RQ ($N = 193$) β	Break-up ($N = 195$) β	Feedback Sig ($N = 195$) β
Moderator			
Self-Esteem			
Uncertainty X Neutral Feedback vs. Control	.05	.05	-.05
Uncertainty X Positive Feedback vs. Control	.06	.00	-.07
Uncertainty X Negative Feedback vs. Control	.01	.06	-.02
Attachment Anxiety			
Uncertainty X Neutral Feedback vs. Control	-.10	-.13	-.01
Uncertainty X Positive Feedback vs. Control	-.06	.03	.05
Uncertainty X Negative Feedback vs. Control	.00	-.07	.02
Attachment Avoidance			
Uncertainty X Neutral Feedback vs. Control	-.01	-.04	.02
Uncertainty X Positive Feedback vs. Control	.09*	.03	.01
Uncertainty X Negative Feedback vs. Control	.05	.06	.05
Destiny Orientation			
Uncertainty X Neutral Feedback vs. Control	-.12*	-.09	.09
Uncertainty X Positive Feedback vs. Control	-.02	-.07	.04
Uncertainty X Negative Feedback vs. Control	-.04	.09	.19†
Growth Orientation			
Uncertainty X Neutral Feedback vs. Control	.04	.05	-.01
Uncertainty X Positive Feedback vs. Control	-.03	.11	.09
Uncertainty X Negative Feedback vs. Control	.07	.09	.06

Note. †$p < .10$. *$p < .05$. Model coefficients are standardized.

Appendix D
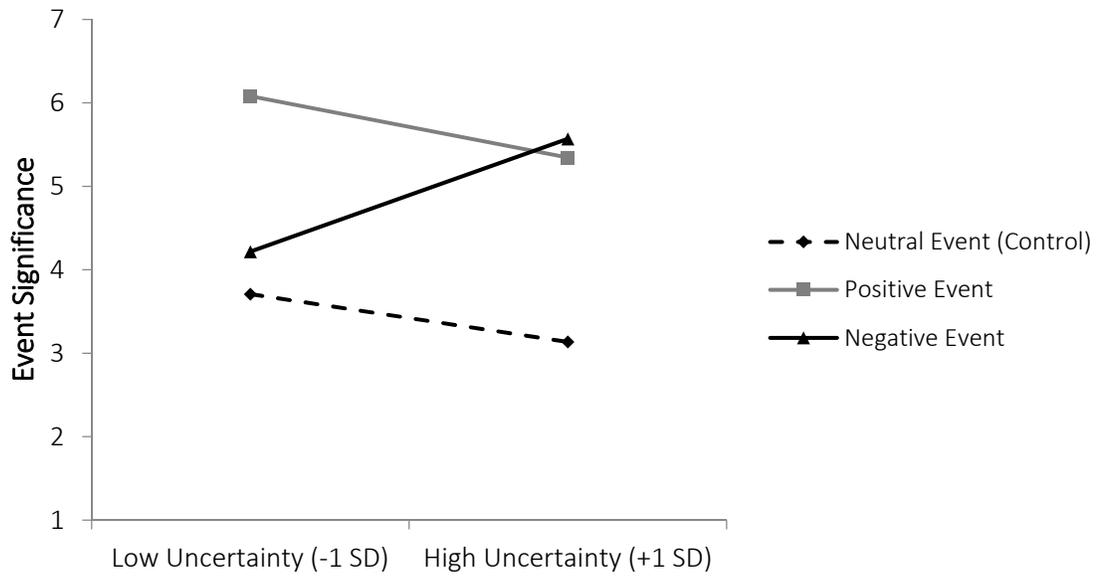
Figure 1. Study 1 uncertainty and event recall condition predicting event significance controlling for pre-manipulation relationship quality and relationship length. Two dummy-coded contrasts compared the positive event vs. control conditions and the negative event vs. control conditions.
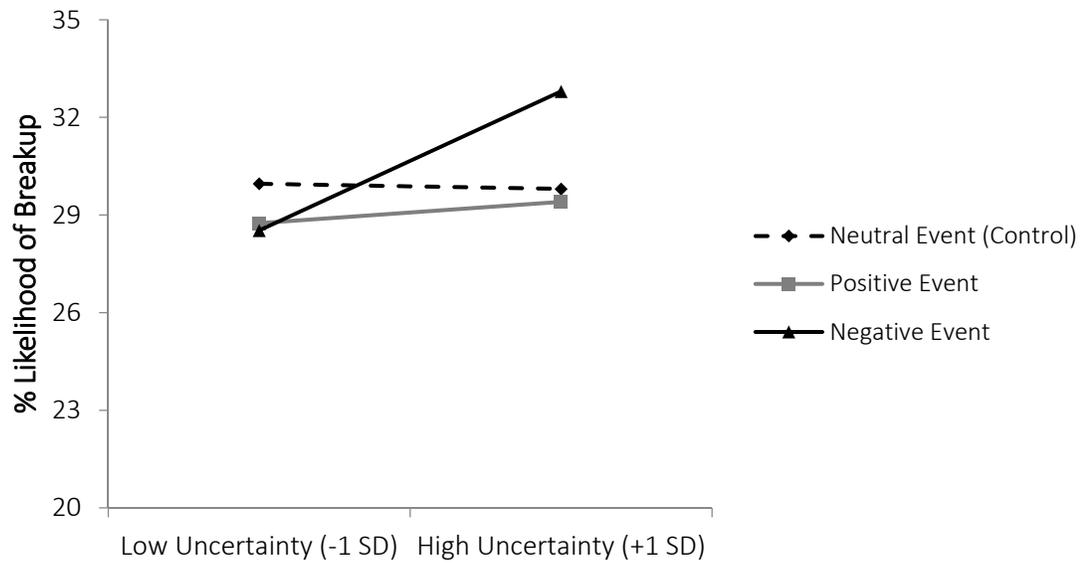
Figure 2. Study 1 uncertainty and event recall condition predicting post-manipulation

likelihood of breakup, controlling for pre-manipulation likelihood of breakup and

relationship length. Two dummy-coded contrasts compared the positive event vs.

control conditions and the negative event vs. control conditions.
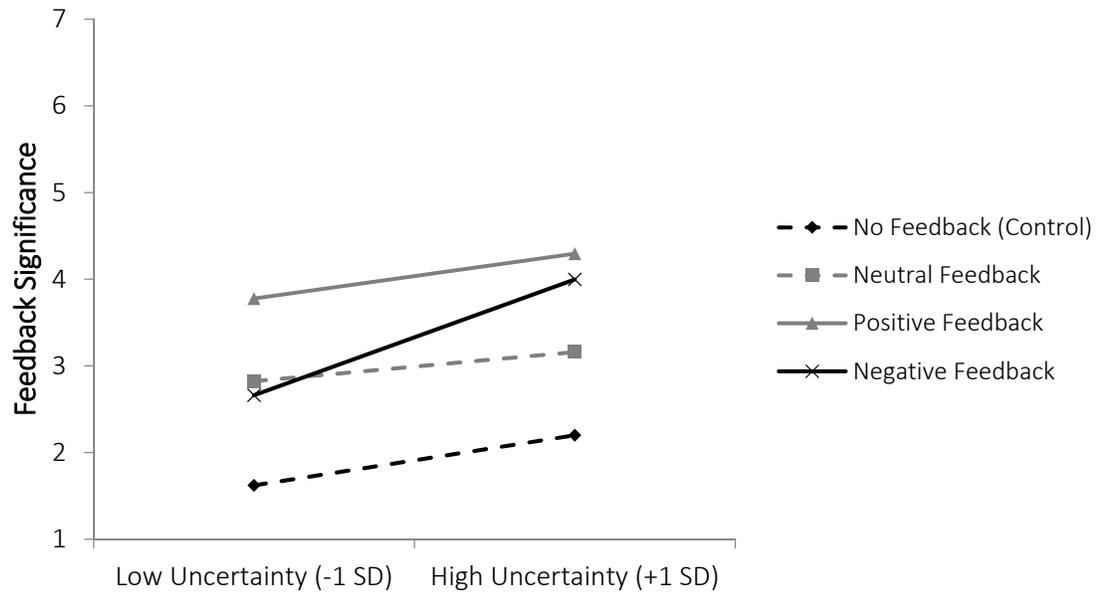
Figure 3. Study 2 uncertainty and false feedback condition predicting feedback

significance, controlling for pre-manipulation relationship quality and relationship

length. Three dummy-coded contrasts compared the neutral feedback vs. control

conditions, the positive feedback vs. control conditions and the negative feedback vs.

control conditions.
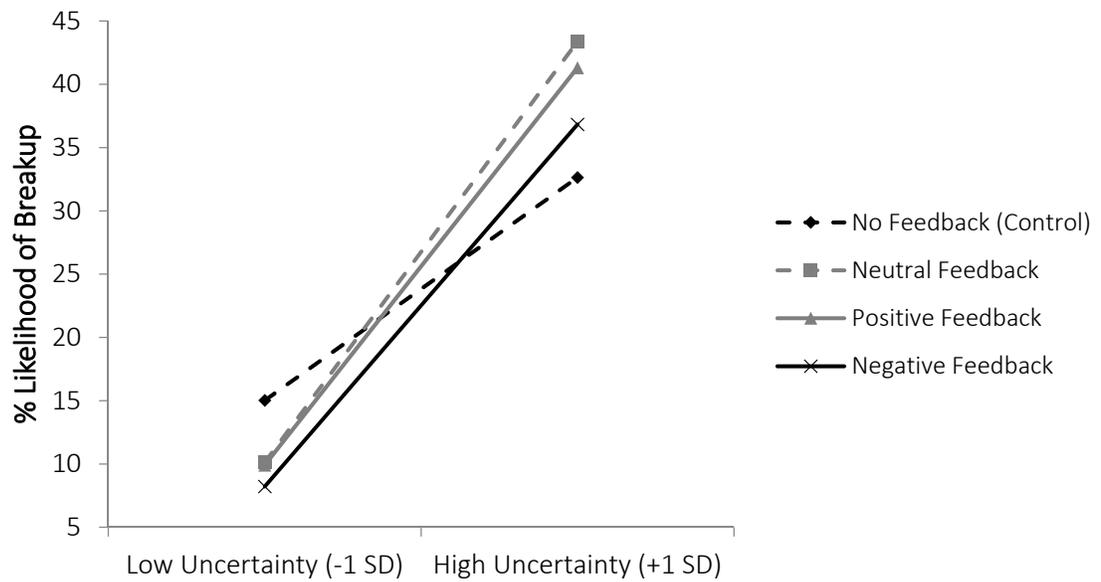
Figure 4. Study 2 uncertainty and false feedback condition predicting likelihood of

breakup, controlling for pre-manipulation relationship quality and relationship length.

Three dummy-coded contrasts compared the neutral feedback vs. control conditions,

the positive feedback vs. control conditions and the negative feedback vs. control

conditions.