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**Entangling the Self with the Relationship: Relationship-Contingent Self-Esteem, Mate
Retention, and Reactions to Threat**

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Abstract

Relationship-contingent self-esteem (RCSE) refers to when feelings of self-worth are derived from romantic relationships. RCSE influences views of the self and the functioning of romantic relationships. We examined the relationship between RCSE and mate retention behaviors across three studies. Study 1 examined whether self-esteem level and RCSE predicted mate retention behaviors. Studies 2 and 3 examined whether self-esteem level and RCSE predicted mate retention behaviors following manipulations of threat to the relationship. Individuals with high RCSE were more likely to engage in benefit-provisioning mate retention behaviors, particularly following certain threats. RCSE was also associated with cost-inflicting mate retention behaviors, but these associations were inconsistent.

Keywords: Self-esteem, relationship maintenance, relationship-contingent self-esteem, mate retention

The Impact of Relationship-Contingent Self-Esteem on Mate Retention and Reactions to Threat

Self-esteem has been linked with interpersonal functioning since the earliest work on the nature of the self (e.g., Cooley, 1902; James, 1890; Mead, 1936; Sullivan, 1953). In the intervening years, self-esteem has been found to be associated with many interpersonal outcomes, including those concerning romantic relationship functioning (see Zeigler-Hill, 2013, for a review). For example, individuals with low self-esteem report negative evaluations of their romantic partners and their relationships (Murray, Holmes, Griffin, Bellavia, & Rose, 2001). Low self-esteem individuals react to threats to their romantic relationship in a manner that may contribute to its dissolution (e.g., derogation of one's partner, assuming the affection of one's partner is waning; Murray, Rose, Bellavia, Holmes, & Kusche, 2002). Additionally, individuals with low self-esteem often distance themselves from their partner and develop distorted views of the relationship (e.g., they perceive the relationship to be more flawed than it actually is; Murray, Holmes, MacDonald, & Ellsworth, 1998). Thus, relationship processes may be different for individuals with low self-esteem compared to those with high self-esteem (e.g., Murray, Gomillion, Holmes, & Harris, 2015). However, there is more to self-esteem than whether it is high or low (e.g., Greenier, Kernis, & Waschull, 1995; Kernis, 2003), so it may be helpful to adopt a broader perspective when considering its associations with romantic relationship processes.

Self-Esteem in the Context of Romantic Relationships

Self-esteem appears to play a role in the nature and success of romantic relationships. When faced with a conflict within a relationship, individuals with high self-esteem tend to act in

ways that function to promote and sustain the relationship. For example, they may reaffirm themselves and their partner, accept their partner, and focus on finding new valuable traits in their partner (Murray et al., 2002). On the other hand, individuals with low self-esteem interpret conflict as a sign that their partner's affection is waning, may see the problem as larger than it is, derogate their partner, and reduce their closeness to their partner (Murray et al., 1998, 2002). Thus, individuals with high self-esteem often take actions intended to build the relationship, whereas individuals with low self-esteem act in ways that reduce their vulnerability (e.g., distancing themselves from their partner, derogating their partner). Additionally, individuals with low self-esteem avoid directly addressing the nature of the conflict, and attempt to rectify the situation by engaging in behaviors that foster dependence for their partner (e.g., helping with household chores, helping their partner manage their work; Murray, Holmes, Aloni, Pinkus, Derrick, & Leder, 2009). Ultimately, these behaviors would not be as beneficial to the relationship as the behaviors an individual with high self-esteem might engage in and, in turn, may lead to different trajectories and assessments of their relationships.

Contingent Self-Esteem

An important aspect of self-esteem is the extent to which feelings of self-worth are *contingent* (Crocker & Wolfe, 2001; Deci & Ryan, 1995). Contingent self-esteem develops when an individual derives feelings of self-worth from successes or failures in a particular life domain. Contingent self-esteem refers to an individual believing that there are goals or standards that they must meet to have value and worth as a person. For example, a student may base her self-worth on her academic performance. If this student develops academic-based contingent self-esteem, then she may feel good about herself when she performs well in her classes, but she may feel

poorly about herself when she receives a low grade (Crocker, Karpinski, Quinn, & Chase, 2003). Thus, individuals with contingent self-esteem may only feel good about themselves when they meet the standards they have set for themselves. Contingent self-esteem has been found to be associated with outcomes in a broad array of areas, including heightened reactivity to interpersonal events (e.g., social rejection; Zeigler-Hill, Besser, & King, 2011).

Relationship-Contingent Self-Esteem

Views of the self sometimes become intertwined with views of the relationship, particularly for individuals with low self-esteem. Specifically, individuals with low self-esteem typically report more negative evaluations of their partner, while ignoring the high levels of regard their partners may hold for them (Murray et al., 1998, 2001). Individuals with low self-esteem view their relationships through the lens of their own self-evaluations. Researchers have built on this idea, and have argued that individuals may also derive their feelings of self-worth from their relationships. That is, they may have *relationship-contingent* self-esteem (RCSE). Like other forms of contingent self-esteem, RCSE occurs when an individual stakes their self-worth on whether they are partnered, and the nature of their relationship with their partner (Knee, Canevello, Bush, & Cook, 2008). Like those with low self-esteem, individuals with RCSE have different appraisals of their relationships than their non-contingent counterparts. For example, individuals with high levels of RCSE who are not partnered report greater urgency in finding a romantic partner (Sanchez, Good, Kwan, & Saltzman, 2008). When they are in a relationship, individuals with high RCSE report paradoxical assessments of their relationships, such that they report being very close to their partner, but that they are also dissatisfied with the relationship (Knee et al., 2008). When their relationships fail, individuals with high RCSE report being more

distraught, and are more likely to engage in obsessive pursuit (i.e., stalking) of their former partners (Park, Sanchez, & Brynildsen, 2011). Thus, individuals with high RCSE have different assessments of their relationships, but how might these assessments affect behavior?

Specifically, do individuals with high RCSE engage in behaviors to maintain their relationships that are different from how their non-contingent counterparts behave?

Individuals with high RCSE may be particularly motivated to maintain their relationships, as their feelings of self-worth are intertwined with what happens in the relationship. However, as noted above, individuals with low and high self-esteem engage in different behaviors and have different responses to conflict in the relationship. Thus, it is important to consider how self-esteem level and RCSE may interact to produce unique behaviors in the relationship. Although there are a number of events that may occur in a relationship, individuals with high levels of RCSE may be particularly attuned to relationship conflict, as it could signal the end of the relationship and a threat to their feelings of self-worth. In turn, individuals with high levels of RCSE may be focused on preventing the defection of their partner, or what has been referred to as mate retention.

Mate Retention

Mate retention is a form of relationship maintenance that has received considerable empirical attention (see Sela, 2016, for a review). Mate retention behaviors refer to the tactics that individuals use to maintain their relationships by reducing the probability of defection or infidelity by their romantic partner (Buss, 1988; Buss & Shackelford, 1997). Buss (1988) describes mate retention behaviors using a taxonomy that ranges “from vigilance to violence” (p. 291) and are classified as *benefit-provisioning behaviors* or *cost-inflicting behaviors*

(Shackelford, Goetz, & Buss, 2005). Benefit-provisioning behaviors incentivize continued investment in the relationship by highlighting the positive aspects of the relationship for the partner, and include acts such as displaying love and affection toward the partner, enhancing one's appearance, and bestowing gifts on the partner. In contrast, cost-inflicting behaviors impose costs on the partner if he or she should decide to leave the relationship or behave unfaithfully. Cost-inflicting behaviors increase the probability that partners will continue investing in the relationship by making their defection appear to be a risky strategy. For example, cost-inflicting behaviors may involve deception, manipulation, threats of violence, or actual violence. Both benefit-provisioning and cost-inflicting behaviors may escalate in their intensity as individuals become increasingly concerned about the possibility of their partner defecting from the relationship or being unfaithful (e.g., Buss, 1988). Mate retention behaviors have important connections with various aspects of romantic relationships, including marital outcomes (Kaighobadi, Shackelford, & Buss, 2010; Shackelford et al., 2005), partner-directed violence (Kaighobadi, Shackelford, & Goetz, 2009), and sexual behavior in the relationship (e.g., Pham & Shackelford, 2013; Pham et al., 2015; Sela, Shackelford, Pham, & Euler, 2015).

Researchers have begun to consider the roles that individual differences may play in the use of mate retention behaviors. For example, personality traits such as agreeableness and honesty-humility have been found to be negatively associated with the use of cost-inflicting mate retention behaviors, whereas pathological forms of personality (e.g., detachment, antagonism) are positively associated with cost-inflicting mate retention behaviors (de Miguel & Buss, 2011; Holden, Roof, McCabe, & Zeigler-Hill, 2015; Holden, Zeigler-Hill, Pham, & Shackelford, 2014; Pham et al., 2017). Discrepancies in mate value between romantic partners (i.e., when one

partner is of comparably higher quality than the other) also predicts mate retention behaviors such that individuals who feel as though they have lower mate value than their partners report engaging in more mate retention behaviors (Sela, Mogilski, Shackelford, Zeigler-Hill, & Fink, 2017). Furthermore, attachment styles have been found to be associated with mate retention behavior such that individuals with avoidant attachment styles tend to perform fewer mate retention behaviors than other individuals (Barbaro, Pham, Shackelford, & Zeigler-Hill, 2016). Finally, self-esteem level has also been found to be associated with mate retention behaviors. Specifically, individuals with high levels of self-esteem report engaging in more benefit-provisioning behaviors, while avoiding cost-inflicting behaviors (Holden et al., 2014). This suggests that individuals who have relatively positive views of themselves may be more likely to focus the attention of their partners on the benefits that can be derived from the relationship, whereas individuals who have relatively negative evaluations (i.e., low self-esteem) – or are uncertain about how they see themselves – may be more likely to resort to the imposition of costs to keep their partners investing in the relationship.

Overview and Predictions

In the present studies, we examined the associations that self-esteem level and RCSE had with mate retention behaviors. We hypothesized that we would replicate the results of previous studies by finding that self-esteem level would be positively associated with benefit-provisioning behaviors and negatively associated with cost-inflicting behaviors. We also hypothesized that RCSE would be positively associated with both benefit-provisioning behaviors and cost-inflicting behaviors. The rationale for our hypotheses concerning RCSE was that individuals who derive their self-worth from their romantic relationships would be so focused on maintaining

their relationships that they would be willing to employ a range of strategies to keep their partners invested. That is, benefit-provisioning and cost-inflicting behaviors represent two different strategies for achieving the same goal of preventing defection from a romantic relationship, so we believed that individuals who derived their feelings of self-worth from the relationship would be willing to use both forms of mate retention behavior to maintain their relationships.

Further, we hypothesized that RCSE would moderate the association that self-esteem level had with mate retention behaviors. The rationale for this hypothesis was that contingent self-esteem has been found to moderate the associations that self-esteem level has with a variety of other outcomes, including conformity (Enjaian, Zeigler-Hill, & Vonk, 2017), anticipated reactions to rejection and failure (Zeigler-Hill et al., 2011), and body image disturbances (Zeigler-Hill & Noser, 2015). The pattern that has emerged from these studies is that contingent self-esteem is an indicator of vulnerability for individuals with high levels of self-esteem, such that they behave in ways that are similar to individuals with relatively low levels of self-esteem. This pattern is consistent with the view that contingent self-esteem is an indicator of self-esteem fragility (e.g., Zeigler-Hill, Dahlen, & Madson, 2017). Additionally, contingent self-esteem often drives self-esteem level in that successes and failures in the domain of contingency (e.g., relationships) lead to fluctuations in self-esteem level (Crocker & Wolfe, 2001). Thus, RCSE may moderate the association between self-esteem level and mate retention behavior that has been observed in previous work (e.g., Holden et al., 2014).

Although we were uncertain about the precise degree of the interaction between self-esteem level and RCSE in the present studies, we thought that RCSE might amplify the positive

association that self-esteem level has with benefit-provisioning behaviors as well as the negative association that self-esteem level has with cost-inflicting behaviors. That is, individuals with high levels of self-esteem and high levels of RCSE would, we hypothesized, be especially likely to engage in benefit-provisioning behaviors, whereas individuals with low self-esteem and high levels of RCSE would be especially likely to engage in cost-inflicting behaviors. Thus, we believed that the unique combinations of self-esteem level and RCSE would be associated with different relationship outcomes.

In addition to the predicted interaction, a number of main effects were also predicted. Specifically, it was predicted that self-esteem level would be positively associated with benefit-provisioning behavior, but negatively associated with cost-inflicting behavior. Additionally, it was predicted that RCSE would be positively associated with both benefit-provisioning and cost-inflicting behaviors, as individuals with high RCSE may be particularly attuned to the successes and failures within their relationships. In other words, they may be enacting a strategy that involves the use of a wider range of mate retention behaviors to prevent dissolution of the relationship.

Building on the idea that individuals with RCSE may be particularly attuned to the events in their relationship, we also sought to explore the impact that relationship threat had on the connections between self-esteem, RCSE, and mate retention. Specifically, we were interested in determining whether individuals with high RCSE respond to threats to their relationship in a way that is more pronounced than their low RCSE counterparts. Although we expected that all participants would respond to the relationship threat in some way (albeit different across individuals; Murray et al., 2002), this threat may be larger to individuals who derive their

feelings of self-worth from their romantic relationships. Thus, we expected that, following threat, individuals with high RCSE would report a desire to engage in benefit-provisioning and cost-inflicting behaviors at a level higher than their low RCSE counterparts.

STUDY 1: GENERAL MATE RETENTION BEHAVIORS

The purpose of Study 1 was to examine the associations that self-esteem level and RCSE have with mate retention behaviors. We expected to replicate the associations between self-esteem level and mate retention behaviors observed in previous studies. That is, we expected self-esteem level to be positively associated with benefit-provisioning behaviors and negatively associated with cost-inflicting behaviors. Our novel prediction for this study is that RCSE would be positively associated with both benefit-provisioning behaviors and cost-inflicting behaviors. Furthermore, we expected RCSE to moderate the association that self-esteem level has with mate retention behaviors.

Method

Participants and Procedure

Participants were 829 undergraduate students (687 women, 142 men) in the Midwestern United States enrolled in psychology courses. Participants were required to be at least 18 years old and currently in a romantic relationship of at least six months. Participants completed measures of self-esteem level, RCSE, and mate retention – along with other instruments not relevant to the present study (e.g., pathological personality traits) – via a secure website in exchange for course credit. These data were collected as part of a larger project that acted as a screener for participation in other non-related studies conducted at the same university. The mean age of participants was 20.64 years ($SD = 4.28$) and the racial/ethnic composition of the

sample was mostly Caucasian (82%; 6% Black, 4% Hispanic, 3% Asian, and 5% “other”). The average relationship length was 31 months ($SD = 30.98$), with 84% of participants reporting that they were seriously dating, 7% cohabitating, 3% engaged, and 6% married. An *a priori* power analysis was conducted in G*Power (Faul, Erdfelder, Lang, & Buchner, 2007). Using an effect size of $f^2 = .15$, which is the default setting for a regression model in G*Power, and assuming three predictors (i.e., self-esteem level, RCSE, and their interaction), this analysis suggested a sample size of 75 would produce power at the .95 level.

Measures

Self-esteem level.

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is a 10-item measure of global self-esteem (e.g., “On the whole, I am satisfied with myself” [$\alpha = .90$]). Participants completed the instrument according to how they generally feel about themselves. Responses were recorded on scales that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

Relationship-contingent self-esteem.

RCSE was measured using the Relationship-Contingent Self-Esteem Scale (RCSES; Knee et al., 2008). The RCSES measures relationship contingency using 11 items (e.g., “When my relationship is going well, I feel better about myself overall” [$\alpha = .88$]). Responses were recorded on scales that ranged from 1 (*not at all like me*) to 5 (*very much like me*).

Mate retention behaviors.

Mate retention behavior was assessed using the Mate Retention Inventory – Short Form (MRI-SF; Buss, Shackelford, & McKibbin, 2008). This 38-item instrument assesses two mate retention dimensions: benefit-provisioning behaviors (16 items; e.g., “Complimented my partner

on her appearance" [$\alpha = .77$]) and cost-inflicting behaviors (22 items; e.g., "Talked to another woman at a party to make my partner jealous" [$\alpha = .86$]). Participants are asked to report the frequency of their use of these behaviors over the past year using a scale that ranged from 0 (*never performed this act*) to 3 (*often performed this act*).

Results

Means, standard deviations, and intercorrelations are presented in Table 1. Investigation of the correlation matrix revealed that self-esteem level was negatively associated with RCSE ($r = -.15, p < .001$) and cost-inflicting behaviors ($r = -.14, p < .001$). RCSE was positively associated with both benefit-provisioning ($r = .40, p < .001$) and cost-inflicting behaviors ($r = .13, p < .001$). Benefit-provisioning and cost-inflicting behaviors were positively correlated ($r = .29, p < .001$).

Two hierarchical moderated multiple regression analyses were conducted to determine whether RCSE moderated the associations that self-esteem level had with benefit-provisioning and cost-inflicting behavior. For both of the analyses, the main effects of self-esteem level and RCSE were entered on Step 1, with the interaction of self-esteem level \times RCSE entered on Step 2. Self-esteem level and RCSE were centered to test their interaction.¹ These analyses were followed by the simple slopes procedure suggested by Aiken and West (1991) to further examine the interaction of self-esteem level and RCSE. Simple slopes tests were conducted using values one standard deviation above and below their respective means (e.g., a high level of self-esteem was represented by a value that was one standard deviation above its mean, whereas a low level of self-esteem was represented by a value that was one standard deviation below its mean).

Benefit-Provisioning Behaviors

In the analysis concerning benefit-provisioning behaviors, positive main effects emerged for self-esteem level ($\beta = .12, t = 3.76, p < .001$) and RCSE ($\beta = .41, t = 12.90, p = .001$). However, these main effects were qualified by their two-way interaction ($\beta = -.09, t = -2.88, p = .004$). The predicted values for this interaction are presented in Figure 1. Simple slopes tests revealed that the association between RCSE and benefit-provisioning was significant for those with high self-esteem ($\beta = .33, t = 7.74, p < .001$) as well as for those with low self-esteem ($\beta = .51, t = 11.00, p < .001$). Additional simple slopes tests revealed that the association between self-esteem level and benefit-provisioning was significant for those with low RCSE ($\beta = .22, t = 4.68, p < .001$), but not for those with high RCSE ($\beta = .04, t = 0.91, p = .37$). Taken together, these findings suggest that the most frequent benefit-provisioning behaviors were reported by individuals with high levels of RCSE regardless of whether their self-esteem level was low or high. In contrast, individuals with a combination of low self-esteem and low RCSE reported relatively low levels of benefit-provisioning behaviors.

Cost-Inflicting Behaviors

The analysis for cost-inflicting behaviors revealed a negative association for self-esteem level ($\beta = -.13, t = -3.62, p < .001$) and a positive association for RCSE ($\beta = .11, t = 3.15, p = .002$) such that more frequent cost-inflicting behaviors were reported by those with low levels of self-esteem and high levels of RCSE. The two-way interaction of self-esteem level \times RCSE was only marginally significant ($\beta = .07, t = 1.89, p = .06$)².

Discussion

The results of Study 1 showed that self-esteem level was positively associated with benefit-provisioning behaviors and negatively associated with cost-inflicting behaviors (see also

Holden et al., 2014). Consistent with our hypotheses, RCSE was positively associated with both benefit-provisioning and cost-inflicting behaviors. In addition to these main effects, the interaction of self-esteem level \times RCSE emerged for benefit-provisioning behaviors such that there was a positive association between RCSE and benefit-provisioning mate retention behaviors for those with high self-esteem, but this association was especially strong for those with low self-esteem. Taken together, these results show that the lowest levels of benefit-provisioning mate retention behaviors were reported by individuals with low self-esteem who also had low levels of RCSE. It should be noted that Study 1 had a large number of participants, which contributed to the relatively small effects that emerged meeting the threshold for statistical significance.

STUDY 2: INVOKING A THREAT TO THE RELATIONSHIP WITH POTENTIAL HIDDEN SELVES

Study 2 provided an extension of Study 1 by experimentally manipulating relationship threat. This was done to better understand the connections between self-esteem, RCSE, and mate retention. Certainly, individuals who derive their feelings of self-worth from their romantic relationships may be particularly attuned to relationship processes and, in turn, may increase their mate retention behaviors in efforts to counter a relationship threat. Although it was expected that there would be a simple effect for relationship threat (i.e., all individuals will increase mate retention behavior following threat), we expected that individuals with RCSE would have a more pronounced response to such a threat.

Participants in this study were led to believe that aspects of themselves that they keep hidden from their partners may lead to the dissolution of their romantic relationships if their

partners found out about these hidden aspects. This design was chosen because it provides a moderate threat to these relationships. Furthermore, this design allowed us to test the hypothesis that threat would clarify the relationship that self-esteem level and RCSE had with both forms of mate retention.

Method

Participants

Participants were 97 community members (44 women, 53 men) recruited via Amazon's Mechanical Turk (MTurk) who reported being in a committed relationship for at least six months. MTurk has become a widely-used platform for data collection in the social sciences and despite its growth, it appears to continue to be a suitable platform for data collection (Buhrmester, Talaifar, & Gosling, 2018). The average age of the participants was 33.10 years ($SD = 9.37$) and the racial/ethnic background of the sample was 82% White, 6% Black, 4% Hispanic, 7% Asian, and 1% other. The average relationship length was 94.00 months ($SD = 103.11$). An *a priori* power analysis was conducted in G*Power. An effect size of $f^2 = .15$ was again used, and 13 predictors were entered into the model (i.e., self-esteem, RCSE, past mate retention behavior, sex, the two effects-coded condition variables, and all two-way and three-way interactions; see Table 4 for the full model). This analysis suggested a sample size of 189 would produce power at the level of .95. Unfortunately, data collection had to be stopped prior to obtaining the necessary sample size due to budgetary and time constraints, as this study was part of the first author's dissertation. Therefore, the analyses for Study 2 are underpowered, and should be interpreted with caution.

Procedure

The procedure for Study 2 was modeled after a procedure developed by Murray et al. (2002). First, participants completed demographic questions and measures concerning self-esteem level, RCSE, and mate retention behavior. Next, participants were presented with a series of five prompts designed to cause them to reflect on things they may keep hidden from their partner (e.g., “In terms of my personality characteristics, I try to keep my partner from seeing...”). Participants were asked to respond to three of the five prompts and to spend at least five minutes on each response. Afterwards, participants were given one of two forms of feedback. They were either told that their partner may discover these hidden aspects and that conflict could arise (negative feedback), or that they have been open with their partner and no conflict should arise (positive feedback), and this feedback ostensibly came from the responses provided in the open-ended questions. Next, participants were asked to complete a measure about their intended future mate retention behavior. Participants in the control condition did not receive feedback prior to being asked about their intended future mate retention behaviors (i.e., they moved on to the next task after completing their responses to the prompts).

Measures

Self-esteem level was assessed using the RSES as in Study 1 ($\alpha = .93$). RCSE was assessed using the RCSES as in Study 1 ($\alpha = .91$). Benefit-provisioning behaviors ($\alpha = .83$) and cost-inflicting behaviors ($\alpha = .95$) were assessed using the MRI-SF that asked about mate retention behavior during the past year. Intended benefit-provisioning behaviors ($\alpha = .88$) and intended cost-inflicting behaviors ($\alpha = .96$) were assessed using a modified version of the MRI-SF that asked about the intention to engage in mate retention behaviors in the future. To do this, the prompt at the beginning of the scale was changed from “...indicate how frequently you performed the act

within the past ONE year” to “...indicate how frequently you plan on performing the act over the next ONE year.”

Data Analytic Strategy

Hierarchical moderated multiple regression analyses were conducted to determine whether RCSE qualified the associations that self-esteem level and experimental condition had with intended future mate retention behaviors. Mate retention behaviors performed during the past year were included as control variables. Effect coding was used to denote the control condition (0,1), the positive feedback condition (1,0), and the negative feedback condition (-1,-1), with the negative feedback condition serving as the comparison condition in these analyses.

Results

Means, standard deviations, and intercorrelations for Study 2 are presented in Table 2. An investigation of the correlation matrix revealed that self-esteem level was negatively associated with RCSE ($r = -.24, p = .02$), past cost-inflicting behaviors ($r = -.44, p < .001$), and intended future cost-inflicting behaviors ($r = -.22, p = .03$). In contrast, RCSE was positively associated with past benefit-provisioning behaviors ($r = .23, p = .02$), but not with past cost-inflicting behaviors ($r = .02, p = .88$) or either form of intended future mate retention ($r = .12, p = .27; r = .12, p = .25$).

Future Benefit-Provisioning Behaviors

In the analysis concerning intended future benefit-provisioning behaviors, a main effect emerged for past benefit-provisioning behavior ($\beta = .36, t = 3.71, p < .001$) such that individuals who reported more frequent benefit-provisioning in the past intended to engage in higher levels of benefit-provisioning in the future. Additionally, a main effect emerged for sex ($\beta = -.40, t = -$

4.20, $p < .001$) such that men reported greater intention to engage in benefit-provisioning behaviors in the future. Unlike Study 1, the interaction between self-esteem level and RCSE was not significant ($\beta = -.05$, $t = -0.42$, $p = .66$). No other main effects or interactions emerged from this analysis.

Future Cost-Inflicting Behaviors

In the analysis concerning future cost-inflicting behaviors, a main effect emerged for past cost-inflicting behavior ($\beta = .25$, $t = 2.80$, $p = .006$), such that individuals who reported engaging in higher levels of cost-inflicting in the past intended to engage in higher levels of cost-inflicting in the future. Additionally, a main effect for sex emerged ($\beta = .56$, $t = 6.98$, $p < .001$), such that men anticipated engaging in more cost-inflicting behaviors in the future than did women. No other significant main effects or interactions emerged from this analysis.

Discussion

Study 2 extended the previous study by using a procedure designed to invoke a threat to the relationship. Participants were led to believe that some part of themselves that they attempt to keep hidden from their partner would emerge and potentially cause the dissolution of their relationship. However, the hypothesis that individuals with high levels of RCSE would be highly responsive to this evoked threat was not supported. It is possible that this threat was not particularly salient for participants because the conditions did not differ in terms of their intended future mate retention behaviors. Additionally, these results may be due to the fact that Study 2 was underpowered. Thus, the results of this study should be interpreted cautiously and should not be taken as evidence that the previous effects reported in Study 1 were spurious. Finally, mate retention behavior is typically measured over the past year, as opposed to forecasting over the

upcoming year. This task may have been difficult for participants, as they do not know the events that will unfold over the next year and so may have struggled to adequately imagine future hypothetical behaviors.

STUDY 3: INVOKING A THREAT TO THE RELATIONSHIP WITH AN UNSPOKEN COMPLAINT

Study 3 extended the previous studies by providing another experimental manipulation of relationship threat. Participants in this study were led to believe that their current partners were likely to have some unspoken complaints that could lead to the dissolution of the relationship. Unlike the manipulation in Study 2, the threat in Study 3 took the form of something unknown and uncontrollable to the participant.

Method

Participants

Participants were 123 community members (54 women, 69 men) recruited via MTurk who reported being in committed relationships for at least six months. The average age of the participants was 32.54 years ($SD = 8.51$) and the racial/ethnic background of the sample was mostly Caucasian (80%; 3% Black, 7% Hispanic, 9% Asian, and 1% “other”). The average relationship length was 77.00 months ($SD = 78.07$). A power analysis including 13 predictors and a sample size of $f^2 = .15$ (i.e., identical to the power analysis in Study 2) suggested a sample size of 189 would produce adequate power for this study. Thus, with a sample of 123, Study 3 is underpowered. Again, as in Study 2, recruitment was stopped due to budgetary and time constraints.

Procedure

As in Study 2, the procedure for Study 3 was modeled after a procedure developed by Murray et al. (2002). First, participants provided demographic information and completed measures of self-esteem level, RCSE, and past mate retention behavior. Next, participants completed the Interpersonal Behaviors Inventory (IBI; Murray et al., 2002), which is a bogus measure that ostensibly identifies hidden complaints that their partners may have about their relationships (e.g., “How often does your partner seem to want to do something different than you want to do?”). Responses were recorded on scales that ranged from 1 (*never*) to 7 (*a few times a month*). Thereafter, the IBI was ostensibly scored and the results were provided to the participant. Participants in the negative feedback condition were told that they had received a score of 75, which was well above the mean for the IBI and indicated that their partner had a number of unspoken complaints about the relationship. Participants in the positive feedback condition were told that they had received a score of 35 on the IBI, which was well below the mean and indicated that their partner had relatively few unspoken complaints about their relationship. Participants in the control condition were not provided any feedback regarding the IBI and were simply told that the IBI was part of a new measure that was being developed. Participants completed a measure of intended future mate retention behaviors after being exposed to the material for their assigned condition.

Measures

Self-esteem level was assessed using the RSES as in the previous studies ($\alpha = .94$). RCSE was assessed using the RCSES as in the previous studies ($\alpha = .87$). Benefit-provisioning behaviors ($\alpha = .85$) and cost-inflicting behaviors ($\alpha = .95$) were assessed using the MRI-SF as in the previous studies. Intended future benefit-provisioning behaviors ($\alpha = .83$) and cost-inflicting

behaviors ($\alpha = .92$) were assessed using the modified version of the MRI-SF from the previous studies.

Data Analytic Strategy

The analyses for Study 3 were similar to those employed in Study 2, including the use of effect coding to denote the three conditions: the control condition (0,1), the positive feedback condition (1,0), and the negative feedback condition (-1,-1), with the negative feedback condition serving as the comparison condition in these analyses.

Results

Means, standard deviations, and intercorrelations are presented in Table 3. Investigation of the correlation matrix revealed that self-esteem level was negatively associated with past cost-inflicting behaviors ($r = -.27, p = .002$) and intended future cost-inflicting behaviors ($r = -.32, p < .001$), whereas RCSE was positively associated with past benefit-provisioning behaviors ($r = .21, p = .02$) and intended future benefit-provisioning behaviors ($r = .26, p = .004$).

Future Benefit-Provisioning Behaviors

In the analysis concerning intended future benefit-provisioning behaviors, a main effect emerged for past benefit-provisioning behavior ($\beta = .84, t = 17.35, p < .001$). No other main effects emerged. However, a three-way interaction emerged for self-esteem level \times RCSE \times condition ($\beta = -.13, t = -2.39, p = .02$). The predicted values for this interaction are presented in Figure 2. We began probing this three-way interaction by examining the constituent two-way interactions of self-esteem level \times RCSE for participants in the positive feedback condition ($\beta = -.12, t = -1.66, p = .09$) and the negative feedback condition ($\beta = .17, t = 1.86, p = .07$). We conducted simple slopes analyses for both of these marginally significant two-way interactions.

For the positive feedback condition, the association between RCSE and intended future benefit-provisioning behaviors was not significant for individuals with high self-esteem ($\beta = -.04, t = -0.36, p = .72$), but was marginally significant for individuals with low self-esteem ($\beta = .22, t = 1.90, p = .06$). However, for the negative feedback condition, the association between RCSE and future intended benefit-provisioning behaviors was marginally significant for individuals with high self-esteem ($\beta = .19, t = 1.74, p = .09$), but not for individuals with low self-esteem ($\beta = -.18, t = -1.20, p = .23$). Taken together, these findings suggest that RCSE was associated with intended future benefit-provisioning behaviors for those with low self-esteem in the positive feedback condition, but was the opposite occurred in the negative feedback condition, such that RCSE was associated with intended future benefit-provisioning behaviors for those with high self-esteem.

Future Cost-Inflicting Behaviors

In the analysis concerning intended future cost-inflicting behaviors, main effects emerged for self-esteem level ($\beta = -.07, t = -2.17, p < .001$), past cost-inflicting behavior ($\beta = .90, t = 27.25, p < .001$), and sex ($\beta = .08, t = 2.40, p = .02$). No other main effects or interactions emerged from this analysis.

Discussion

Study 3 investigated the effect that a threat to the relationship had on intended future mate retention behaviors. Individuals with high self-esteem but low RCSE reported a relatively low likelihood of engaging in benefit-provisioning behaviors following positive feedback about their relationship. This suggests that individuals with high levels of self-esteem who do not base their feelings of self-worth on their romantic relationships may have felt especially secure when

told that their partners did not have very many unspoken complaints, so they were not motivated to engage in mate retention behaviors. In contrast, individuals with a combination of high self-esteem and high RCSE reported a greater likelihood of engaging in benefit-provisioning behaviors in the future after they were told that their romantic partners likely had a large number of unspoken complaints. This suggests that these individuals may be attempting to counter the threat to their relationship and remedy the complaints held by their partners by incentivizing their partners to stay in the relationship. Moreover, it was found that individuals with high self-esteem and high RCSE in the positive feedback condition reported a greater likelihood of engaging in benefit-provisioning behaviors in the future. Thus, somewhat paradoxically, individuals with high RCSE may also interpret this feedback as a sign to increase mate retention behaviors, albeit of a different type.

GENERAL DISCUSSION

The purpose of the present studies was to examine the associations of self-esteem level and RCSE with mate retention behaviors. Although the results of these studies were somewhat inconsistent, self-esteem level and RCSE do appear to play some role in the mate retention behaviors that individuals choose to employ. Across the studies, self-esteem level sometimes had a positive relationship with benefit-provisioning behaviors, but a negative relationship with cost-inflicting behaviors. Considering that self-esteem can be described as a gauge by which to assess interpersonal value (i.e., sociometer theory; Leary & Baumeister, 2000), this provides insight into relationship functioning. More specifically, these individuals may feel that their partners value them and, in turn, may engage in behaviors that incentivize and build their relationships, while avoiding behaviors that impose costs on their partners. Alternatively, individuals with low

self-esteem may not consider themselves to have the same likelihood of success using positive incentives, so they may resort to cost-inflicting mate retention behaviors.

RCSE was found to have somewhat inconsistent associations with mate retention behaviors across the studies. Despite the inconsistent results, it appears that individuals with high levels of RCSE are motivated to protect their relationships – and, by extension, their tenuous feelings of self-worth – by engaging in both benefit-provisioning and cost-inflicting mate retention behaviors. Although benefit-provisioning behaviors include behaviors such as displaying love and affection toward the partner, some of the cost-inflicting behaviors involve high-risk strategies such as derogating the partner or threatening the partner with physical violence. These cost-inflicting behaviors are likely to be deleterious to the relationship and may increase the likelihood of relationship dissolution in the future. This pattern suggests that individuals with high levels of RCSE may be so desperate to maintain their relationships that they are willing to incur the risks that accompany the use of cost-inflicting mate retention behaviors.

The self-esteem level \times RCSE interaction for mate retention behaviors suggests a more nuanced understanding of the connections between self-esteem and relationship processes. The most consistent pattern that emerged was that individuals with high levels of self-esteem were especially likely to use benefit-provisioning mate retention behaviors if their feelings of self-worth were contingent on their romantic relationships. This pattern suggests that individuals with high self-esteem may work especially hard to provide positive incentives for their partners when they stake their own feelings of self-worth on having a satisfying relationship with their partners. In contrast, individuals with high self-esteem who did not base their feelings of self-worth on

their romantic relationships were less likely to engage in benefit-provisioning behaviors. Finally, it appears that threats to the relationship may have some impact on the mate retention behaviors used by individuals, particularly for benefit-provisioning behaviors. However, the impact of threat was most clearly observed for individuals with high self-esteem and high levels of RCSE in Study 3.

In some respects, the present findings seem to contrast with recent findings regarding RCSE and other relationship outcomes. Namely, RCSE was found to play a role in problematic drinking behaviors beyond the influence of relationship satisfaction (Rodriguez, Knee, & Neighbors, 2013); and when paired with jealousy, RCSE may be uniquely predictive of problematic drinking (DiBello, Rodriguez, Hadden, & Neighbors, 2015). These findings suggest that those with high RCSE may be more likely to develop problematic drinking behaviors and, in turn, may experience problems within their relationship. In a similar vein, it has been found that for those with high RCSE, but not for those with low RCSE, communication with former partners can diminish satisfaction with the current relationship while bolstering satisfaction with the previous relationship (Rodriguez, Overup, & Amspoker, 2016). By extension, this could lead to relationship dissolution.

Although benefit-provisioning behaviors are intended to incentivize the continued investment in the relationship (e.g., displaying affection or support for the partner), the current findings suggest that not all individuals engage in these behaviors equally. As noted above, individuals with higher self-esteem and higher RCSE seem particularly prone to engaging in these behaviors, and although these behaviors alone might positively impact the relationship, it appears that these individuals also engage in potentially harmful behaviors simultaneously (e.g.,

drinking to cope, communicating with previous partners; DiBello et al., 2015; Rodriguez et al., 2016). The present studies also provide evidence for this simultaneous behavior, as individuals with high RCSE were found to be more likely to engage in cost-inflicting behaviors. It therefore appears that individuals with high RCSE may not be as selective in the behaviors that they engage in within the relationship, which may lead to more troubled relationships.

Limitations

There are a number of limitations that should be acknowledged regarding these studies. First, Study 1 was correlational in nature, and therefore strong statements of causality cannot be made. Also, due to the self-report nature of the study, social desirability and other forms of bias should be considered. For example, it is possible that some individuals may have been reluctant to acknowledge that their feelings of self-worth are contingent on their romantic relationships or they may have had limited insight into the mate retention behaviors that they employ. Future research would benefit from utilizing strategies that are designed to capture self-esteem level, RCSE, and mate retention behaviors in ways that are not completely reliant on self-report (e.g., ratings from one's romantic partner). In a similar vein, individuals with high self-esteem are more likely to respond in socially desirable ways and also portray their close relationships in a more positive light (Baumeister, Campbell, Krueger, & Vohs, 2003). Thus, the positive relationship between self-esteem level and benefit-provisioning behaviors could be due to these tendencies, as could the negative relationship between self-esteem level and cost-inflicting behaviors. Finally, Study 1 had a large number of participants ($n = 829$) and, therefore, the results of this study may be due to Type 1 error.

Studies 2 and 3 afforded an experimental manipulation of relationship threat, but both studies were conducted online, which does not offer the same level of control as laboratory experiments. Nevertheless, previous research suggests that this difference in control may not be an important concern for studies conducted via MTurk, because such data have been found to be as reliable and valid as data collected in laboratory settings (e.g., Horton, Rand, & Zeckhauser, 2011; Rand, 2012). These studies were also under-powered and should thus be interpreted with due caution. Despite these limitations, these studies extend what is known about the connection between aspects of self-esteem and mate retention behaviors.

Future Directions

Future studies could expand this research in a number of ways. First, it would be worthwhile to investigate the influence that manipulations of jealousy might have on the connections between self-esteem and mate retention behavior. Jealousy may be a particularly salient relationship threat for participants. Moreover, such manipulations would more directly target mate retention behaviors, which are intended to prevent defection from the relationship. For example, a participant could be told that another person has been flirting with their partner. It would also be worthwhile to conduct a longitudinal assessment of mate retention behavior. Previous studies suggest that mate retention behaviors decline in the years following marriage (Kaighobadi et al., 2010); however, it is important to understand how these mate retention behaviors fluctuate over longer periods of time, and across different types or stages of relationships. It may also be worthwhile to explore the attributions that participants make about threats such as the ones used in these studies, as this may affect their response to the threat. Finally, it would be worthwhile to administer the Implicit Theories of Relationships measure

(Knee, 1998; Knee, Patrick, Vietor, & Neighbors, 2004), as differences in mindset may play a role in the responses individuals have to a threat to the relationship. Indeed, individuals with a growth mindset may see the threats posed in this study as an opportunity to further develop the relationship as opposed to a signal that the relationship may be fading.

Conclusion

The present studies examined the associations of self-esteem level and RCSE with mate retention behaviors. Across three studies, it was sometimes found that high levels of self-esteem and RCSE were associated with greater use of benefit-provisioning mate retention behaviors. There was also inconsistent evidence that the association between RCSE and benefit-provisioning behaviors was especially strong for individuals with high levels of self-esteem. Finally, it appears that threats to the relationship influence whether individuals use – or at least intend to use – benefit-provisioning behaviors. Taken together, these results suggest that self-esteem level, along with RCSE, may have unique impacts on relationship processes, at least regarding mate retention behaviors, and may lead certain individuals to engage in a wider array of mate retention behaviors.

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Footnotes

¹ We also conducted alternative analyses in which self-esteem level was entered on the first step of the model, RCSE was entered on the second step, and their interaction was entered on the third step. This was done to see whether self-esteem level controlled for RCSE. In the model concerning benefit-provisioning behaviors, self-esteem level was not significant when entered on its own ($\beta = .06, t = 1.67, p = .10$). The second and third steps of this model were identical to the model presented in the main text. In the model concerning cost-inflicting behaviors, self-esteem level was a significant predictor when entered on its own ($\beta = -.14, t = -4.12, p < .001$). Again, the second and third steps of this model were identical to the model presented in the main text. Taken together, these findings add credence to the hypothesis that RCSE moderates the relationship between self-esteem level and mate retention behaviors.

² After observing the marginally significant interaction for cost-inflicting behaviors in Study 1, we ran the corresponding simple slopes analyses. These simple slopes analyses suggested that the association between RCSE and cost-inflicting was significant for those with high self-esteem ($\beta = .17, t = 3.62, p < .001$), but not for those with low self-esteem, ($\beta = .04, t = .79, p = .43$). Analysis of the hidden slopes suggested that the association between self-esteem level and cost-inflicting behaviors was not significant for those with high RCSE ($\beta = -.07, t = -1.44, p = .15$). However, for individuals with low RCSE, the association between self-esteem level and cost-inflicting behaviors was significant ($\beta = -.20, t = -3.87, p < .001$).

Table 1
Study 1: Intercorrelations and Descriptive Statistics for Self-Esteem Level, RCSE, and Mate Retention

	1	2	3	4
1. Self-Esteem Level	—			
2. RCSE	-.15***	—		
3. Benefit-Provisioning	.06	.40***	—	
4. Cost-Inflicting	-.14***	.13***	.29***	—
<i>M</i>	3.97	3.76	2.78	1.71
<i>SD</i>	0.71	0.70	0.40	0.43

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2

Study 1: Regressions of Mate Retention Behaviors on Self-Esteem Level, Contingent Self-Esteem, and their interaction

	Benefit-Provisioning				Cost-Inflicting			
	R^2	ΔR^2	F^2	β	R^2	ΔR^2	F^2	β
<i>Step 1</i>	.17***	.17***	.21		.03***	.03***	.04	
Self-Esteem Level (SE)				.12***				-.13***
Relationship-Contingent Self-Esteem (RCSE)				.42***				.10**
<i>Step 2</i>	.18**	.01**			.04 ⁺	.01 ⁺		
SE x RCSE				-.09**				.07 ⁺

⁺ $p = .06$, * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3

Study 2: Intercorrelations and Descriptive Statistics for Self-Esteem Level, RCSE, Past Mate Retention, and Intended Future Mate Retention

	1	2	3	4	5	6
1. Self-Esteem Level	—					
2. RCSE	-.24*	—				
3. Past Benefit-Provisioning	-.05	.23*	—			
4. Past Cost-Inflicting	-.44***	.02	.33**	—		
5. Future Benefit-Provisioning	-.14	.12	.29**	-.03	—	
6. Future Cost-Inflicting	-.22*	.12	.13	.46***	.21*	—
<i>M</i>	4.01	3.45	1.48	0.49	1.24	0.67
<i>SD</i>	0.80	0.86	0.53	0.53	0.54	0.59

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4

Study 2: Regressions of Mate Retention Behaviors on Self-Esteem Level, Contingent Self-Esteem, Sex, Condition, and their interactions

	Benefit-Provisioning				Cost-Inflicting			
	R^2	ΔR^2	F^2	β	R^2	ΔR^2	F^2	β
Step 1	.26***	.26***	.38		.52***	.52***	1.11	
Self-Esteem Level (SE)				-.14				-.08
Relationship-Contingent Self-Esteem (RCSE)				-.04				.08
Past Mate Retention Behavior				.36***				.25**
Sex				-.40***				.56***
Condition Variable 1 (Con 1)				-.17				-.01
Condition Variable 2 (Con 2)				.13				.10
Step 2	.28	.02			.52	.00		
SE x RCSE				-.05				-.03
SE x Con 1				.02				.04
SE x Con 2				.04				.02
RCSE x Con 1				-.03				-.01
RCSE x Con 2				-.08				.00
Step 3	.28	.00			.53	.01		
SE x RCSE x Con 1				-.03				.03
SE x RCSE x Con 2				-.01				-.09

⁺ $p = .06$, * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5

Study 3: Intercorrelations and Descriptive Statistics for Self-Esteem Level, RCSE, Past Mate Retention, and Intended Future Mate Retention

	1	2	3	4	5	6
1. Self-Esteem Level	—					
2. RCSE	-.01	—				
3. Past Benefit-Provisioning	.15	.21*	—			
4. Past Cost-Inflicting	-.27**	-.17	.36***	—		
5. Future Benefit-Provisioning	.14	.26**	.86***	.25**	—	
6. Future Cost-Inflicting	-.32***	-.14	.35***	.94***	.32***	—
<i>M</i>	3.97	3.74	1.58	0.50	1.68	0.45
<i>SD</i>	0.85	0.62	0.49	0.55	0.57	0.55

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 6

Study 3: Regressions of Mate Retention Behaviors on Self-Esteem Level, Contingent Self-Esteem, Sex, Condition, and their interactions

<i>Model</i>	Benefit-Provisioning				Cost-Inflicting			
	R^2	ΔR^2	F^2	β	R^2	ΔR^2	F^2	β
<i>Model</i>	.76***	.76***	3.48		.89***	.89***	8.80	
Step 1								
Self-Esteem Level (SE)				.01				-.07*
Relationship-Contingent Self-Esteem (RCSE)				.08				.00
Past Mate Retention Behavior				.84***				.90**
Sex				.04				.08*
Condition Variable 1 (Con 1)				.04				-.02
Condition Variable 2 (Con 2)				.03				.03
Step 2	.77	.01			.90	.01		
SE x RCSE				.01				.06
SE x Con 1				-.09				-.03
SE x Con 2				.04				.02
RCSE x Con 1				.01				-.00
RCSE x Con 2				.00				.03
Step 3	.78***	.01***			.90	.00		
SE x RCSE x Con 1				-.13*				.05
SE x RCSE x Con 2				.05				.03

⁺ $p = .05$; * $p < .05$; ** $p < .01$; *** $p < .001$.

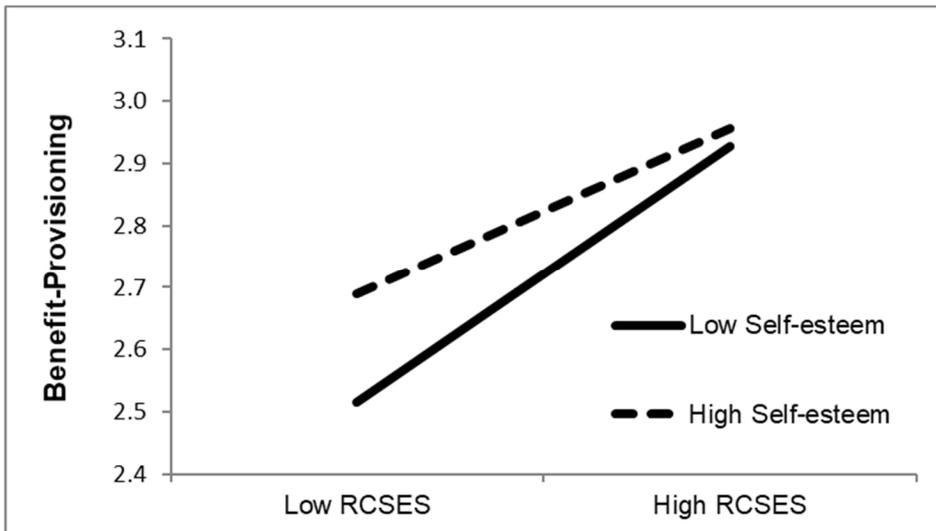


Figure 1. Study 1: Predicted values for benefit-provisioning illustrating the interaction of self-esteem level and RCSE at values that are one standard deviation above and below their respective means.

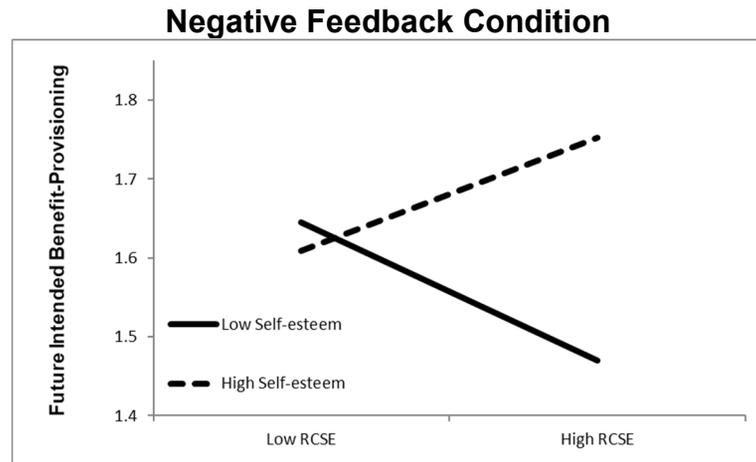
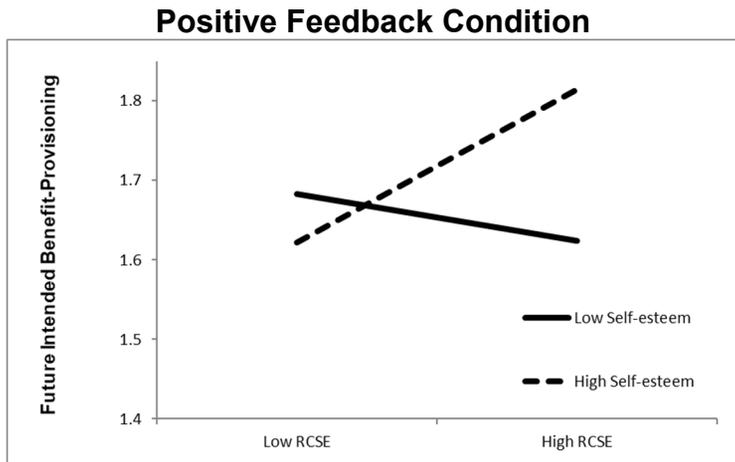


Figure 2. Study 3: Predicted values for future intended benefit-provisioning illustrating the interaction of self-esteem level and RCSE in the positive feedback condition and the negative feedback condition at values that are one standard deviation above and below their respective means.