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Perceived Partner Commitment and Implicit Self-Esteem Predicts Connectedness Accessibility in Response to Relationship Threat

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LOYOLA UNIVERSITY CHICAGO

PERCEIVED PARTNER COMMITMENT AND IMPLICIT SELF-ESTEEM
PREDICTS CONNECTEDNESS ACCESSIBILITY IN RESPONSE TO
RELATIONSHIP THREAT

A THESIS SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
MASTER OF ARTS

PROGRAM IN APPLIED SOCIAL PSYCHOLOGY

BY NORMA REYES

CHICAGO, ILLINOIS

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ABSTRACT

The current research examined the impact of perceived partner commitment, implicit self-esteem, and relationship threat on connectedness. The present study predicted that individuals with high (versus low) implicit self-esteem are more likely to access connectedness goals (on an unconscious level) after experiencing a relationship threat, when they perceive their significant others are highly committed to the relationship. This relation between implicit self-esteem and connectedness goal accessibility will not be evident in the control condition. The findings reveal perceived partner commitment moderated the relation between implicit self-esteem and relationship threat on accessing connectedness goals. However, people with high implicit self-esteem were more likely to access connectedness goals after experiencing a relationship threat, when partner commitment was low, not high. A discussion of why the results are opposite to the predictions is presented.

Because the need to belong and feel loved and accepted is a fundamental human motivation (Baumeister & Leary, 1995) psychologists have been examining the multiple psychological mechanisms that influence an individual's day to day interactions with their romantic relationship partners. There has been an abundance of research focusing on explicit (i.e., conscious, controlled) self-esteem on significant other relationships (i.e., family, romantic, friendship). The present study is interested in expanding the views of self-esteem on significant other relationships by investigating implicit (i.e., unconscious, automatic) self-esteem on romantic relationships. More specifically, the present study is interested in how an individual's implicit self-esteem relates to the activation of connectedness goals (i.e. seeking closeness) after experiencing a belongingness threat (i.e., feelings of rejection) induced by their romantic partner. Furthermore, the present study investigates how an individual's perception of their romantic partner's commitment to their relationship moderates the relation between implicit self-esteem and the activation of connectedness goal seeking after experiencing a belongingness threat.

Belongingness

Baumeister and Leary (1995) propose that the need to belong should motivate individuals toward goal-directed behavior intended to fulfill the need, and that goal-directed behavior is seeking connectedness. Moreover, the need to belonging theory takes into account that individuals are motivated to connect with one another, but that

individuals are also unwilling to break those connections. Evidence supports the tendency for individuals to react with emotional distress and anxiety when a relationship ends, is nearly universal among all human beings of all walks of life and of all ages (Hazan & Shaver, 1994). The need to belong is apparent in all cultures and it has been argued that it was evolutionary selected for both survival and reproductive benefits (Baumeister & Leary, 1995). For instance, for survival, children who have a strong belongingness towards their parents are more likely to stay close to their parents, therefore increasing their chances of survival through care, food, and protection (Leary & Buttermore, 2003).

In addition, literature suggests that lack of belongingness can lead to an increase in goal-directed activity aimed at forming relationships (Baumeister & Leary, 1995; Pickett, Gardner, Knowles, 2004). Researchers observed that people need frequent interactions with others, and people are motivated to perceive an interpersonal relationship that is stable, reliable, and will continue into the foreseeable future (Baumeister & Leary, 1995). Thus, people have this desire to strive for social contact and try to pursue that contact by seeking connectedness and closeness with others. Leary and Buttermore's (2003) analysis of self-awareness and interpersonal relationships suggests that individuals connect on an implicit level. According to their perspective, interpersonal information involves an "unreflective" cognitive processing on the social interactions engaged with other individuals. In other words, to meet the important goal of belonging, individuals may implicitly coordinate his/her actions with others.

In addition to the several evolutionary theories suggesting people have a need to belong; literature on attachment theory proposes that infants engage in *attachment*

behaviors when experiencing some kind of threat, fear, and/or anxiety. Evidence from research on attachment theory proposes that humans are born pre-wired to maintain a feeling of security with significant others (Bowlby, 1977). Moreover, an infant's unconscious working model of self develops at the same time the infant is engaging in *attachment behaviors*. Bowlby argues that a child's confidence in his attachment figure is greatly determined by the attachment figure's sensitivity to their child's needs. If an infant is not obtaining a sense of felt security from his/her caregiver, then this will greatly impact the development of the infant's conscious and unconscious working models (Ainsworth, Blehar, Waters, & Wall, 1978). Moreover, Bowlby reasons that these early experiences and attachment relationships provide a working model of how to behave in social situations and maintain a self-image (Bowlby, 1977).

Not only is belongingness (motivation) a natural predisposition of human beings, but the need to connect (behavior) may be acting on an automatic, unconscious level. For instance, Chartrand and Bargh's (1999) research on the chameleon effect observed participants engaging in nonconscious mimicry of nonverbal cues and facial expressions with other "participants" (confederates) at significantly greater than chance levels. Their research also suggests that participants' mimicry of confederates were done without having any intentional goals. Furthermore, Chartrand and Bargh's (1999) research has shown that nonconscious mimicry between participants and confederates leads to smooth social interactions and interpersonal bonding. In sum, these theories and previous research suggest that individuals engage in connectedness with others, and that this goal may be met unconsciously.

Risk Regulation and Connectedness

The risk regulation model suggests that interpersonal risk activates two competing goals: the goal of seeking closeness with others (e.g., romantic partners) who are likely to meet needs for connectedness, and the goal of protecting the self from further rejection and pain (Murray, Derrick, Leder, & Holmes, 2008; Murray, Holmes, & Collins, 2006).

Previous research demonstrates that although perceived risk automatically activates connectedness goals in everyone, some people also activate an executive control system that inhibits connectedness goals and prioritizes self-protection (Murray et al., 2008). More specifically, individuals with low explicit self-esteem prioritize self-protection and individuals with high explicit self-esteem prioritize connectedness goals in response to relationship threats (Murray et al., 2008). Consequently, when individuals were in the belongingness threat condition (asked to describe a time when a significant other hurt or disappointed them), the desire to connect with their significant other was heightened for individuals with low and with high explicit self-esteem. However, when intention to behave (i.e., in a manner that would accomplish connectedness goals) was measured, it was observed that only high explicit self-esteem individuals acted on connectedness goals (Murray et al., 2008). These findings suggest that although the goal to connect with rejecting relationships partners is activated in everyone, only those with high explicit self-esteem seek out connectedness with their partners. People with low explicit self-esteem prioritize protecting the self instead of connecting with their partners.

Murray and Holmes (2009) also proposed the existence of a “smart” relationship unconscious that organizes and manages mutually responsive interaction patterns. This “smart” relationship unconscious automatically analyzes and prioritizes corresponding goals (i.e., connectedness versus self-protection) to a specific situation and these goals automatically activate goal congruent behavior (Murray & Holmes, 2009; Bargh & Morsella, 2008). For instance, Murray, Holmes, & Pinkus (2010) observed married couples’ daily interactions with each other and measured couples’ unconscious attitudes to connect or to self-protect in each interaction. Results indicated that people who initially experienced more versus fewer high-risk conflict-of-interest situations (feeling rejected) later evidenced less positive implicit attitudes toward their partner. In addition, they did not observe this pattern of results on people’s explicit attitudes toward their partner. These results suggest that the unconscious is picking up on relationship cues and realities that the conscious mind does not (or will not) see.

Other research has demonstrated how connectedness promoting goals lead to nonverbal approach behaviors, such as expressing affection or empathy in the face of relationship conflict (Gottman, Coan, Carrere, & Swanson, 1998; Gottman & Driver, 2005). For instance, Gottman & Driver observed married couples conflict interactions and results suggests that nonverbal behavior cues, such as turning away from romantic partner, elicit avoidance (or nonconnectedness). However, they suggest that if these married couples could alter their nonverbal behavior cues of turning away into behavioral cues that promote connectedness, then this could change the way in which their romantic partner responds to them in the face of relationship conflict. Furthermore, Gottman

(1998) found that couples most destined for relationship loss seem to be those who, during conflict, criticize and express contempt for each other, respond defensively, and withdraw from one another. Taken together, these studies suggest that there is evidence that people's unconscious plays an important role in relationship functioning (Murray et al., 2010; Gottman & Driver, 2005).

Implicit Self-Esteem

The sociometer theory proposes that self-esteem is an indicator of the degree to which an individual feels accepted versus rejected by other people (Leary, Terdal, Tambor, & Downs, 1995). These authors provide empirical evidence that explicit self-esteem motivates people to maintain interpersonal relationships. Most recently, Leary (2005) suggests that an individual's self-esteem is an indicator of their relational value to other people. Furthermore, determining the relational value is often detected on an automatic, nonconscious level that prompts both negative affect and then conscious consideration of the situation (Leary, 2005). Sociometer theory suggests that individuals will behave in such a manner as to maintain his/her relational value in the eyes of other people. In other words, people are motivated to seek acceptance if they feel that their relational value is being threatened. According to this perspective, both explicit and implicit self-esteem should be indicators of people's perceived relational value.

Research on understanding the influence an individual's explicit (i.e., conscious, controlled) self-esteem has on romantic relationship functioning suggests that the way we think and feel about ourselves will inevitably spill over to how we think and feel about our significant others. For instance, Aron, Aron, Tudor, and Nelson (1991) suggest that

people's evaluations of significant others emphasize the importance of the self. Also, previous research focusing on explicit self-esteem, demonstrates that an individual will often project their own positive or negative explicit self-evaluations onto their explicit assessments of their romantic partner (Murray, Holmes, & Griffin, 1996). For example, research has shown that people include others in their sense of self in various types of situations, such as allocation of money, memory recognition, and cognitive representations of self and other, and this connection is even stronger when the other is a significant person in his/her life (Aron et al., 1991). These findings suggest that people are inclined to include others in their sense of self. Recent research also suggests that people include close others into their implicit (i.e., unconscious, automatic) self (DeHart, Pelham, Fiedorowicz, Carvallo, & Gabriel, 2011). That is, people higher in implicit self-esteem report more positive implicit evaluations of their significant others. With the growing research on implicit self-esteem and the already prevalent research on belongingness threat, we suggest that implicit self-esteem and threat can influence an individual's unconscious motivation to connect with their significant other.

Research suggests that there is a weak correlation between implicit self-esteem and explicit self-esteem (Bosson, Swann, & Pennebaker, 2000; DeHart, Pelham, & Tennen, 2006; Rudolph, Schröder-Abé, Schütz, Gregg & Sedikides, 2008). In addition, implicit self-esteem is more likely to develop earlier than explicit self-esteem (Koole, Dijksterhuis, & van Knippenberg, 2001; Rudman, Phelna, & Heppen, 2007). A study of acculturation and self-esteem suggests that implicit self-esteem changes at a slower rate than explicit self-esteem (Hetts, Sakuma, & Pelham, 1999). More specifically, Hetts and

colleagues observed a group of Asian American participants' implicit self-esteem increase slowly over a ten-year period, but their explicit self-esteem changed quickly after being immersed into a new culture. Furthermore, implicit self-esteem has been linked to early childhood experiences (DeHart et al., 2006), reflect automatic self-evaluations (Koole, Dijksterhuis, & van Knippenberg, 2001), fluctuate in response to daily negative events (DeHart & Pelham, 2007), are related to physical health (Shimizu & Pelham, 2004), and predicts nonverbal anxiety in response to a self-threatening interview (Spalding & Hardin, 1999). These findings suggest that there are discrepancies between implicit and explicit self-esteem and that implicit self-esteem may be processed on a different cognitive, psychological level than explicit self-esteem.

Research examining adult children's self-reports of their parent-child relationships has shown that those who reported more (versus fewer) nurturing interactions with their parents also reported high explicit and high implicit self-esteem (DeHart et al., 2006). Moreover, DeHart et al. (2006) postulate that a nurturing and positive relationship with parents may translate to positive relationships with friends and romantic partners as well as sustaining a high implicit self-esteem throughout adulthood (DeHart et al., 2006). Evidence from DeHart et al.'s (2010) research demonstrating a positive association between people's implicit self-esteem and implicit evaluation of significant others support this notion. This effect was found across different types of interpersonal relationships of parent-child, romantic partners, sibling, and friendship. Thus, individuals with high (versus low) implicit self-esteem have positive implicit

evaluations of their significant others, and are more likely to sustain positive connections with others (Murray et al., 2010).

In addition, research suggests that having high implicit self-esteem seems to work as a buffer against self-concept threats and negative daily interpersonal experiences (DeHart, Tennen, Armeli, Todd, & Mohr, 2009). Specifically, findings from a daily diary study suggests that implicit self-esteem can also function as a motivation to seek connectedness, as observed in people with low implicit self-esteem seeking connection to others in response to negative interpersonal interactions (DeHart et al., 2009). That is, consistent with the sociometer theory, college students with low implicit self-esteem who experience a belongingness threat were more likely to restore acceptance by connecting with others that evening (and as a consequence drinking with others). It is important to note that these others were likely not the same people who rejected them or made them feel unaccepted during the day. Previous research suggests that people with low implicit self-esteem would likely not seek connectedness from those who rejected them or made them feel unaccepted (Murray et al., 2006).

Recent research has also demonstrated that implicit self-esteem corresponds to people's positive nonverbal behaviors (i.e., connectedness) during relationship threat (Longua Peterson & DeHart, 2011). More specifically, after recalling a time that their partner rejected them, individuals with high implicit self-esteem reported engaging in more positive nonverbal behaviors during the interaction when perceived commitment was high. However, there was no relation between implicit self-esteem and reports of positive nonverbal behaviors when perceived commitment was low (Longua Peterson &

DeHart, 2011). These effects were not observed in the control condition. In addition, the same pattern of results was not evident for explicit self-esteem. Furthermore, an observational study similarly revealed that participants high (vs. low) in implicit self-esteem were observed engaging in more positive nonverbal behavior during a conflict discussion when they perceived their partner was more committed to their relationship. Participants high and low in implicit self-esteem did not differ in their positive nonverbal behavior during the conflict discussion when perceived partner commitment was low. These findings provide some initial evidence that implicit self-esteem does predict approach behaviors in response to relationship threat, but only for people who perceive their partners are highly committed to their relationship. These findings are also consistent with previous research demonstrating that the unconscious picks up on relationship cues that the conscious mind overlooks (Murray et al., 2010). Presumably, people with high implicit self-esteem are not willing to seek connectedness to partners who they perceive are not committed to their relationships.

The above findings suggest that people with high implicit self-esteem will only seek connectedness to rejecting partners if they think their partners are committed to their relationships (Longua Peterson & DeHart, 2011). Presumably, this perception of lack of commitment from their partner, elicits a feeling of insecurity and rejection, in which people even with high implicit self-esteem will use caution to enhance self-protection. These findings are consistent with previous research that has demonstrated that under certain circumstances, even people with high explicit self-esteem were found to decrease connectedness with their significant other and increase self-protection goals after

relationship threat (Murray et al., 2010). Murray and colleagues found that when high explicit self-esteem people had not forgiven their significant other's for a recent transgression, the risk regulations processes of self-protection were adjusted and they were more cautious and less concerned with seeking connectedness with their partners. It was the feeling of vulnerability that heightened these self-protection goals in people with high explicit self-esteem. Therefore, it seems as if perceptions of a partner's commitment may influence the activation of self-protection (and therefore connectedness) goals in people with high implicit self-esteem.

The Current Study

Previous theory and research suggests that implicit self-esteem develops early in age and is influenced by an individual's early experiences and attachment towards significant others. Likewise, research on belongingness and connectedness suggest that individuals have a natural predisposition to form close relationships and to either maintain the relationship (seek connectedness) or to protect the self (risk regulation). Finally, the knowledge gained from research on implicit self-esteem and relationship functioning, suggests that implicit self-esteem predicts connection (i.e., via nonverbal behaviors) in response to threat when perceived partner commitment is high, and self-protection when perceived partner commitment is low. Thus, high perceived partner commitment (and not a person's own commitment) influences security and connectedness, while low perceived partner commitment influences vulnerability and self-protection. Therefore, we predict that there is a link between an individual's implicit self-esteem, perceived partner commitment, and seeking connectedness with a significant

other and seeking self-protection, after relationship threat. Specifically, we predict that there will be a 3-way Perceived Partner Commitment x Implicit Self-esteem x Relationship Threat Condition interaction. I expect to see these results only in response to perceived partner commitment and not of the participant's own commitment to the relationship. It is the perceived partner commitment that will activate the risk and vulnerability—not their own commitment.

Hypothesis 1: We predict that in the relationship threat condition, when an individual's perception of partner commitment is high, there will be a positive relation between implicit self-esteem and connectedness goal accessibility. However, when perception of partner commitment is low, implicit self-esteem will not be related to connectedness goal accessibility. The above pattern between implicit self-esteem and connectedness goal accessibility will not be evident in the control condition. Positive and negative non-interpersonal words will be measured and entered in the analyses to control for individual differences in the activation of positive and negative affect.

Hypothesis 2: We predict that in the relationship threat condition, when perception of partner commitment is high, there will be a negative relation between implicit self-esteem and self-protection goal accessibility. However, when perception of partner commitment is low, there will be no relation between implicit self-esteem and self-protection goal accessibility. The above pattern between implicit self-esteem and self-protection goals will not be evident in the control condition. Positive and negative non-interpersonal words will be measured and entered in the analyses to control for individual differences in the activation of positive and negative affect.

Methods

Participants

We recruited 212 participants involved in a romantic relationship of at least 2 months. Two hundred and seven participants are included in the results with 62 males and 145 females, age ($M = 20.3$), and years in a romantic relationship ($M = 1.2$). Five participants were dropped from data analyses due to 3 computer glitches, 1 did not read instructions, and 1 did not complete the study. Participants enrolled in an introductory psychology course at Loyola University Chicago were given course credit for their participation. Participants, not enrolled in an introductory course, were given a candy bar and the opportunity to be in a \$50 cash prize drawing for their participation.

Overview of Procedure

This study took place in a laboratory setting, and upon arrival participants completed a computerized survey on Media Lab, consisting of basic demographic information, measures of implicit and explicit self-esteem, and information about their current romantic relationship. Then, participants were randomly assigned to either receive the relationship threat condition or the control condition. Participants completed a manipulation check, to verify that the manipulation was indeed effective. Once participants completed the threat or the control condition, participants were asked to complete a lexical decision task to measure connectedness and self-protection goal accessibility. Finally, participants were asked to provide their own first and last name initials. Afterwards, they were debriefed about the present study.

Measures

Explicit Self-Esteem. We used Rosenberg's (1965) 10-item self-esteem scale that taps global self-evaluations (e.g., "I feel that I have a number of good qualities"). Participants responded using a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Negative items were reverse-scored and the items were averaged together so that higher numbers represent higher explicit self-esteem ($\alpha = .74$).

Implicit Self-Esteem. We used the Name-Letter Task to measure implicit self-esteem due to its reliability and consistent findings in research (DeHart et al., 2006; Kitayama & Karasawa, 1997; Koole et al., 2001; Nuttin, 1985). This assessment measures how much an individual likes his or her initials on an automatic and presumably unconscious level. On their computer screen, participants were directed to rate from 1 (*dislike very much*) to 7 (*like very much*) each letter of the alphabet (presented in a random order). Participants were told that these ratings will be used "to develop stimuli for future studies of linguistic and pictorial preferences." In addition, participants were instructed to "trust your intuitions, work quickly, and report your gut impressions". Therefore, an individual with high implicit self-esteem rated his or her initials higher than individual with low implicit self-esteem. To calculate the Name-Letter Effect, we computed the difference between an individual's rating of his or her initials and the average rating of those initials from participants who do not share those same initials. Participants' name-letter preferences were computed by taking the average liking scores for their first and last name initials. The correlation between how much participants liked their first name initial to how much they liked their last name initial was $r = .534, p < .01$.

Perceived Partner Commitment. One-item was used to assess participants' perceptions of their partners' commitment to the relationship. Participants indicated how committed they believed their partner is to their current romantic relationship on a scale from 1 (*not at all committed*) to 7 (*very committed*).

Own Commitment. One-item was used to assess participants' own commitment to the relationship. Participants indicated how committed they are to their current romantic relationship on a scale from 1 (*not at all committed*) to 7 (*very committed*).

Relationship Survey. We asked participants basic questions focused on their romantic relationship. These questions include length of relationship, how often they see each other or talk to each other on a scale from 1 (*Not at all*) to 7 (*All the time*), long-distance or monogamous, and how their relationship has been going for the past week on a scale from 1 (*Much worse than usual*) to 7 (*Much better than usual*).

Relationship Threat Manipulation. Participants were randomly assigned to either receive the relationship belongingness threat condition or the control condition (adapted from Murray et al, 2008). In the relationship threat condition, participants were asked to provide a written description of a time when they felt intensely disappointed, hurt, or let down by their romantic partner. Participants were asked to think of the event in their life that best fit this description and then write three or more detailed sentences to describe the situation and how it came about. In fact, previous research has shown that this manipulation successfully elicits rejection in people (e.g., Murray et al., 2008). In the control condition, participants were asked to write three or more sentences about a movie they recently saw with their romantic partner.

Perceived Rejection. A manipulation check was performed immediately after the experimental manipulation. The manipulation check was comprised of three questions that participants answered on a 7-point scale (1 = *not at all*, 7 = *extremely*). The three questions asked how unaccepted, rejected, and negative participants felt. Items were combined so that higher scores represent more perceived rejection ($\alpha = .84$).

Lexical Decision Task. To measure connectedness and self-protection accessibility, participants were instructed to complete a lexical decision task in determining whether each target stimulus that appears is a word or a nonword. The task contained 250 trials of 125 words and 125 nonwords. Of the 125 target words, 25 measured connectedness goals (such as hug, rely, trust), 25 assessed self-protection goals (defend, protect, careful), 25 positive and 25 negative non-interpersonal words and 25 filler words (adapted from Murray et al, 2008).¹ Then words were created by changing the last letter of a word matched in length to each target word in a way that turned it into a nonword. The words and nonwords were presented randomly. The primary focus for this study was measuring the accessibility (in milliseconds) of connectedness goals and self-protection goals. For example, the quicker (in milliseconds) the responses on determining connectedness words as words, the more likely they are accessing connectedness goals.

¹Connectedness, self-protection words, positive, and negative words were selected on the basis of word ratings provided by graduate psychology students. The connectedness words received relatively high ratings on the dimensions of familiarity and “the extent to which the word captures the idea of increasing one’s sense of closeness or connection to another person”. The self-protection words received relatively high ratings on the dimension of “being cautious or wanting to stop something bad from happening.”

Demographics. Participants were asked basic demographic questions including their first and last initials. The first and last initials were used to calculate their implicit self-esteem score on the Name-Letter Effect measure.

Probe Question. At the end of the study, we asked participants to explain in one to two sentences, what they thought the study was about.

Results

Random Assignment Check

First, we determined that random assignment was effective by running an independent t-test for all self-esteem and relationship functioning measures answered before the experimental manipulation, between the relationship threat condition and the control groups. Results reveal participants' responses on the measures of length of relationship, frequency of seeing and speaking to each other, relationship satisfaction status and explicit self-esteem, all t 's < 0.92, p 's > 0.86, did not differ between relationship threat and control group, except for the Implicit Self-Esteem Name Letter Measure, $t(205) = -1.664$, $F = 6.907$, $p = .009$. Participants experiencing relationship threat had a lower implicit self-esteem Name Letter Measure score ($M = 1.822$) than participants experiencing no threat ($M = 2.189$).

Manipulation Check

Next, we determined that the experimental manipulation was effective. Thus, a manipulation check was performed predicting feelings of rejection from relationship threat condition (1 = relationship threat, -1 = control condition). We predicted feelings of rejection from the relationship threat condition, implicit self-esteem, perceived partner

commitment and the interaction terms to see how rejected participants feel are influenced by these variables. The end result revealed that there was a significant effect between condition and the manipulation check. That is, participants in the relationship threat condition felt rejected and participants in the control condition did not. This effect was not moderated by implicit self-esteem or perceived partner commitment (see Table 1).

Calculating the Lexical Decision Task

To assess whether relationship threat influenced the rate of participants accessing connectedness goals or self-protection goals, we calculated reaction times to both words and nonwords using a logarithmic transformations (Fazio, 1990). Then, we averaged response times for correct responses made within 3,000 milliseconds and responses above 300 milliseconds (i.e., “yes” for actual words, and “no” for nonwords, within each word category). Thus, responses exceeding 3,000 milliseconds and below 300 milliseconds were deleted and not included in the analyses. Next, we conducted regression analyses predicting reaction times to connectedness and self-protection related words. We centered responses to nonwords and filler words, and similarly valence non-interpersonal words (i.e. positive words for connectedness, negative words for self-protection related words) to control for individual differences in reaction time and responses to affectively similar words, respectively.

Study Hypothesis 1

To test Hypotheses 1, we examined a 3-way interaction between Perceived Partner Commitment, Implicit Self-Esteem, and Relationship Threat (threat vs. control) on people’s rate of connectedness goal accessibility (controlling for the positive and

negative non-interpersonal words, filler words, and nonwords). The logarithmic transformations of the connectedness words and self-protection words accessibility response times were used in the regression analyses. However, for ease of interpretation, the un-transformed connectedness and self-protection response times were used in calculating the predicted scores presented in the figures. The procedure outlined by Aiken & West (1991) was used to test these interactions in multiple regressions. In following this procedure, each of the continuous predictor variables (perceived partner commitment, implicit self-esteem, and explicit self-esteem) were centered, the effect of relationship threat condition (1 = threat, -1 = control) and all of the resulting 2-way and 3-way interaction terms were entered predicting the dependent variable of connectedness accessibility (see Table 2).

As summarized in Table 2 (under Connectedness), the regression analysis revealed that the main effect of implicit self-esteem predicting connectedness goal response times was significant. This suggests that participants with high versus low implicit self-esteem differed in connectedness goal accessibility. That is, people with higher in implicit self-esteem were able to identify connectedness words as words on the Lexical Decision Task faster than people with low implicit self-esteem. In addition, the three-way interaction obtained showed a significant 3-way Implicit Self-esteem x Perceived Partner Commitment x Condition interaction. That is, the relation between implicit self-esteem and connectedness accessibility was moderated by perceived partner commitment and depends on whether participants were exposed to a relationship threat or not.

Next, we determined the nature of the significant 3-way Implicit Self-esteem x Perceived Partner Commitment x Condition interaction. To do so, we examined the 2-way Implicit Self-esteem x Perceived Partner Commitment interaction separately in the experimental versus the control condition. As suggested by the regression lines appearing in Figure 1, “Relationship Threat”, simple slopes tests revealed that in the threat condition, there was a significant 2-way Implicit Self-Esteem x Perceived Partner Commitment interaction on connectedness response times, $B = .001$, $\beta = .122$, $t(95) = 2.598$, $p = .011$. However, in the control condition, there was no significant 2-way Implicit Self-esteem x Perceived Partner Commitment interaction on connectedness response times, $B = .000$, $\beta = -.018$, $t(94) = -.447$, $p = .656$ (see the bottom of Figure 1, “Control”). In short, perceived partner commitment influences participants with low and high implicit self-esteem on connectedness response times, differently in the threat versus control condition. To further examine the nature of the 2-way Implicit Self-esteem x Perceived Partner Commitment interaction in the threat condition, we calculated two variables to represent participant’s one standard deviation above (i.e., high commitment) and below (i.e., low commitment) the mean on perceived partner commitment. Then, analyses were run in which the newly computed high and low perceived partner commitment were separately entered into our regression equation replacing the original perceived partner commitment variable.

In the threat condition, for participants who perceived high partner commitment there was not a significant effect of implicit self-esteem on connectedness response times, $B = .001$, $\beta = .003$, $t(95) = .544$, $p = .588$. However, for participants who perceived low

partner commitment, there was a significant effect of implicit self-esteem on connectedness response times, in the threat condition, $B = .005$, $\beta = .180$, $t(95) = 2.598$, $p = .011$ (see Figure 1, “Relationship Threat”). Specifically, there was a positive relation between implicit self-esteem and connectedness accessibility when perceived partner commitment was low and no relation between implicit self-esteem and connectedness accessibility when perceived partner commitment was high. That is, in the relationship threat condition, participants with high implicit self-esteem responded quicker to identifying connectedness words as words on the lexical task than participants with low implicit self-esteem when perceived commitment was low.

These findings are consistent with what was predicted—that implicit self-esteem is related to connectedness accessibility. However, the pattern of perceived partner commitment moderating implicit self-esteem and connectedness accessibility in the relationship threat condition is different than predicted. That is, these findings suggest that people with low perceived partner commitment and high implicit self-esteem responded faster on connectedness goal words than people with high perceived partner commitment when experiencing relationship threat. Our predictions suggested that people with high perceived partner commitment and high implicit self-esteem responded faster on connectedness goal words than people with low implicit self-esteem and high perceived partner commitment after threat. We will return to this issue in the general discussion section.

Finally, we wanted to demonstrate that our effects only held for perceived partner commitment and not own relationship commitment. When we re-ran the above model

replacing perceived partner commitment with own commitment the observed 3-way interaction was not found, $B = -.002$, $\beta = -.070$, $t(195) = -1.476$, $p = .141$.

Study Hypothesis 2

To test Hypotheses 2, we examined a 3-way interaction between Perceived Partner Commitment, Implicit Self-Esteem, and Relationship Threat (threat vs. control) on people's rate of self-protection goal accessibility (controlling for the positive and negative non-interpersonal words, filler words, and nonwords). The procedure outlined by Aiken & West (1991) was used to test these interactions in multiple regressions. In following this procedure, each of the continuous predictor variables (perceived partner commitment, implicit self-esteem, and explicit self-esteem) were centered by subtracting the appropriate sample means, the effect of relationship threat (1 = threat, -1 = control) and all of the resulting 2-way and 3-way interaction terms were entered predicting the dependent variable of self-protection accessibility.

As summarized in Table 3 (Self-Protection), all main effects, two-way interactions, and the three-way interaction obtained showed no significance in predicting the accessibility of self-protection words in the regression model. That is, implicit self-esteem, perceived partner commitment, and condition did not influence participants self-protection response times (see Figure 2). These findings are inconsistent with what was predicted. That is, these findings suggest that implicit self-esteem, perceived partner commitment, and the experimental relationship threat manipulation did not significantly affect participants' response times on self-protection words. We predicted that for people with high perceived partner commitment, low implicit self-esteem would respond faster

on self-protection words than people with high implicit self-esteem. These results suggest that implicit self-esteem does not play a role in the accessibility of self-protection words.

General Discussion

The present study demonstrates an association of perceived partner commitment moderating the relation between implicit self-esteem in predicting connectedness accessibility under relationship threat. When participants reported feelings of rejection from their romantic partners, those who are high in implicit self-esteem (vs. low) accessed connectedness goals quicker when perceiving their romantic partners as having low relationship commitment. However, when perceptions of partner commitment were high, people high and low in implicit self-esteem did not differ in connectedness goal accessibility response rates. These results suggest that people with high implicit self-esteem accessed connectedness goals in ways similar to their low implicit self-esteem counterparts when they believed their partner's commitment was strong. This pattern of results for implicit self-esteem and perceived partner commitment on connectedness accessibility was not apparent in the control condition. The current findings are consistent with the idea that implicit self-esteem is related to automatic connectedness goals in response to threat.

The findings for self-protection were not consistent with what we predicted. That is, we predicted that implicit self-esteem and perceived partner commitment would also interact to predict self-protection goals. In short, we did not observe a relation between implicit self-esteem and response times of self-protection words moderated by perceived partner commitment differently for participants in the relationship threat condition and

the control condition. Finally, the pattern of results we observed were not evident for explicit self-esteem or own relationship commitment. These findings suggest that implicit self-esteem (but not explicit self-esteem) influences automatic connection, but not self-protection, in response to threat.

These findings are consistent with previous research on self-esteem, the “smart” unconscious, and on belongingness threat suggesting that after a relationship threat manipulation, implicit self-esteem will be related to accessing connectedness goals (Murray & Holmes, 2009; Bargh & Morsella, 2008; Murray et al., 2010). These results suggest that implicit self-esteem plays an important role in seeking connection, but not self-protection, when feelings of belongingness are threatened. In addition, these results suggest that connectedness goals and self-protection goals may be distinct from one another, not opposite ends of the same dimension (see Longua Peterson & DeHart, 2012 for a similar argument).

The results of this research are interesting for several reasons. First, these results are consistent with research suggesting that the unconscious documents relationship cues and realities when the conscious does not (Murray et al., 2010). Our results provide some of the first evidence that examines the automatic process between implicit self-esteem and perceived partner commitment predicting connectedness goal accessibility in response to relationship threats. Second, while our findings suggest that implicit self-esteem regulates unconscious connectedness, they also reveal a complex interaction between perceived partner commitment and implicit self-esteem on connectedness. That is, when participants doubted their romantic partner’s dedication to the relationship, those

with high implicit self-esteem activated connectedness goals quicker than those with low implicit self-esteem.

Although our findings appear consistent with the idea that self-esteem and commitment perception regulates connectedness goal accessibility, there are a few issues to be considered. First, these findings are inconsistent with previous research on perceived partner commitment and implicit self-esteem predicting actual relationship behavior. Specifically, research by Longua Peterson and DeHart (2012) shows that individuals with high implicit self-esteem reported engaging in more positive nonverbal behaviors after feeling rejected by their partner only when perception of commitment was high. However, the current findings revealed this pattern when participants doubted their romantic partners' commitment. There may be some kind of psychological mechanism interacting with perception of commitment that triggers a person to act differently from what they are thinking. In other words, just because a goal to connect is activated, it does not mean that goal will be acted on (see Murray et al., 2008). As noted earlier, the risk regulation model suggests that interpersonal risk, such as feelings of rejection, will activate competing goals of seeking connectedness or goals of self-protection (Murray, et al., 2008; Murray, Holmes, & Collins, 2006). Due to risk regulation processes, it appears that connectedness goals are activated for people with high implicit self-esteem who think their partners aren't committed to their relationship, but behaviorally they don't act on these goals.

On a related note, the current work suggests that people with high and low implicit self-esteem do not differ in connectedness accessibility when perceived partner

commitment is high. However, the previous work has demonstrated that *only* people with high implicit self-esteem engage in positive nonverbal behaviors in response to threat (Longua Peterson & DeHart, 2012). These results suggest that there is a disconnect between the goals that are being automatically activated and the behaviors people actually engage in. These findings are consistent with previous work demonstrating that, people with low explicit self-esteem are not acting on connectedness goals that are activated (Murray et al., 2008). Future research needs to examine not only the goals that are activated, but also the behaviors that are (or are not) engaged in during actual interactions.

Despite the interesting results, there are limitations to the present study. First, the present study is limited to a particular population of undergraduates attending a Midwestern university whom are not married, but dating. The majority of participants in the study were dating, but not living with their romantic partner and/or married. Research on risk regulation affects both dating and married partners. For example, research using a daily diary methodology on married couples indicate that people who initially experienced more versus fewer high-risk conflict-of-interest situations (feeling rejected) later evidenced less positive implicit attitudes toward their partner (e.g. Murray et al., 2010). The current findings on the regulation of connection may be different for more committed romantic relationships. In addition, the present study examines only one occasion of relationship threat and there may be more to learn from a longitudinal daily diary study to see how seeking connectedness is influenced over time. In short, couples'

perceptions of commitment to each other or current relationship quality may differ on a daily basis; therefore examining these processes day to day may be useful.

Another limitation of the current work is that it appears that random assignment was not completely effective. That is, participants in the threat condition were lower in implicit self-esteem (pre-manipulation) compared with participants in the control condition. However, it seems unlikely that this influenced the results--given the complex pattern of results between perceived commitment and implicit self-esteem predicting connection. However, a replication of the current study will help determine if the results were due to ineffective random assignment or ensure that random assignment is more effective.

In the face of these limitations, the results of the current study adds to a growing body of research highlighting the importance of implicit processes for regulating relationship dynamics (e.g., DeHart et al., 2004; DeHart, Pelham et al., 2009; Murray et al., 2010). However, it is hoped that the information gained from the present study will provide some initial research on implicit self-esteem and connecting with others. This kind of research can shed light on how individuals can form healthy connections with significant others after feeling rejected versus how individuals form maladaptive ways of dealing with feelings of rejection and threat. For instance, engaging in positive nonverbal behaviors after relationship threat can lead to smoother interactions. On the other hand, an individual frowning or displaying negative nonverbal cues after belongingness threat (avoiding connectedness) can lead to relationship dysfunction (Gottman, Coan, Carrere, & Swanson, 1998; Gottman & Driver, 2005). If implicit self-esteem and perceived

partner commitment are influencing an individual's behavior to connect or to avoid a significant other after feeling rejected by that significant other, then these findings will have important implications for relationship functioning.

APPENDIX A
MULTIPLE REGRESSION TABLES

Table 1. Multiple Regression Results for Implicit Self-esteem, Perceived Commitment and Condition predicting Perceived Rejection

	Manipulation Check		
	<u>B</u>	<u>β</u>	<u>t</u>
Implicit Self-esteem	-.027	-.024	-.474
Perceived Commitment	-.312	-.151	-.028**
Condition	-1.287	-.715	-14.604**
Implicit Self-esteem x Perceived Commitment	.042	.032	.630
Implicit Self-Esteem x Condition	-.028	-.025	-.488
Condition x Perceived Commitment	-.069	-.033	-.666
Implicit Self-esteem x Condition x Perceived Commitment	.068	.051	1.004

Note. * $p < .05$ ** $p < .01$

Table 2. Multiple Regression Results for Implicit Self-esteem, Perceived Commitment and Condition predicting Connectedness Response Times

	Connectedness Response Times (DV)		
	<u>B</u>	<u>β</u>	<u>t</u>
Explicit Self-esteem	.001	.016	.512
Logarithm Filler	.136	.128	1.908
Logarithm Positive	.388**	.065	5.970
Logarithm Negative	.319**	.314	4.818
Logarithm Non-Words	.204**	.178	3.004
Implicit Self-esteem	-.003*	-.075	-2.397
Perceived Commitment	-.002	-.030	-.965
Condition	-.002	-.029	-.927
Implicit Self-esteem X Perceived Commitment	.002	.039	1.230
Implicit Self-Esteem X Condition	.000	.009	.277
Condition X Perceived Commitment	-.002	.026	-.829
Implicit Self-esteem X Condition X Perceived Commitment	-.003*	-.069	-2.179

Note. * $p < .05$ ** $p < .01$

Table 3. Multiple Regression Results for Implicit Self-esteem, Perceived Commitment and Condition predicting Self-Protection Response Times

	Self-Protection Response Times (DV)		
	<u>B</u>	<u>β</u>	<u>t</u>
Explicit Self-esteem	.000	.002	.051
Logarithm Filler	.206	2.688	.008
Logarithm Positive	.141	.130	2.027
Logarithm Negative	.291	.292	4.096
Logarithm Non-Words	.377	.335	5.160
Implicit Self-esteem	.001	.033	.971
Perceived Commitment	.004	.054	1.582
Condition	.000	-.006	-.192
Implicit Self-esteem X Perceived Commitment	-.003	-.006	-1.806
Implicit Self-Esteem X Condition	.001	.034	.992
Condition X Perceived Commitment	.003	.045	1.327
Implicit Self-esteem X Condition X Perceived Commitment	.001	.017	.494

Note. * $p < .05$ ** $p < .01$

APPENDIX B

MULTIPLE REGRESSION FIGURES

Figure 1. Predicting participants' connectedness accessibility from relationship-threat condition, implicit self-esteem, and perceived partner commitment.

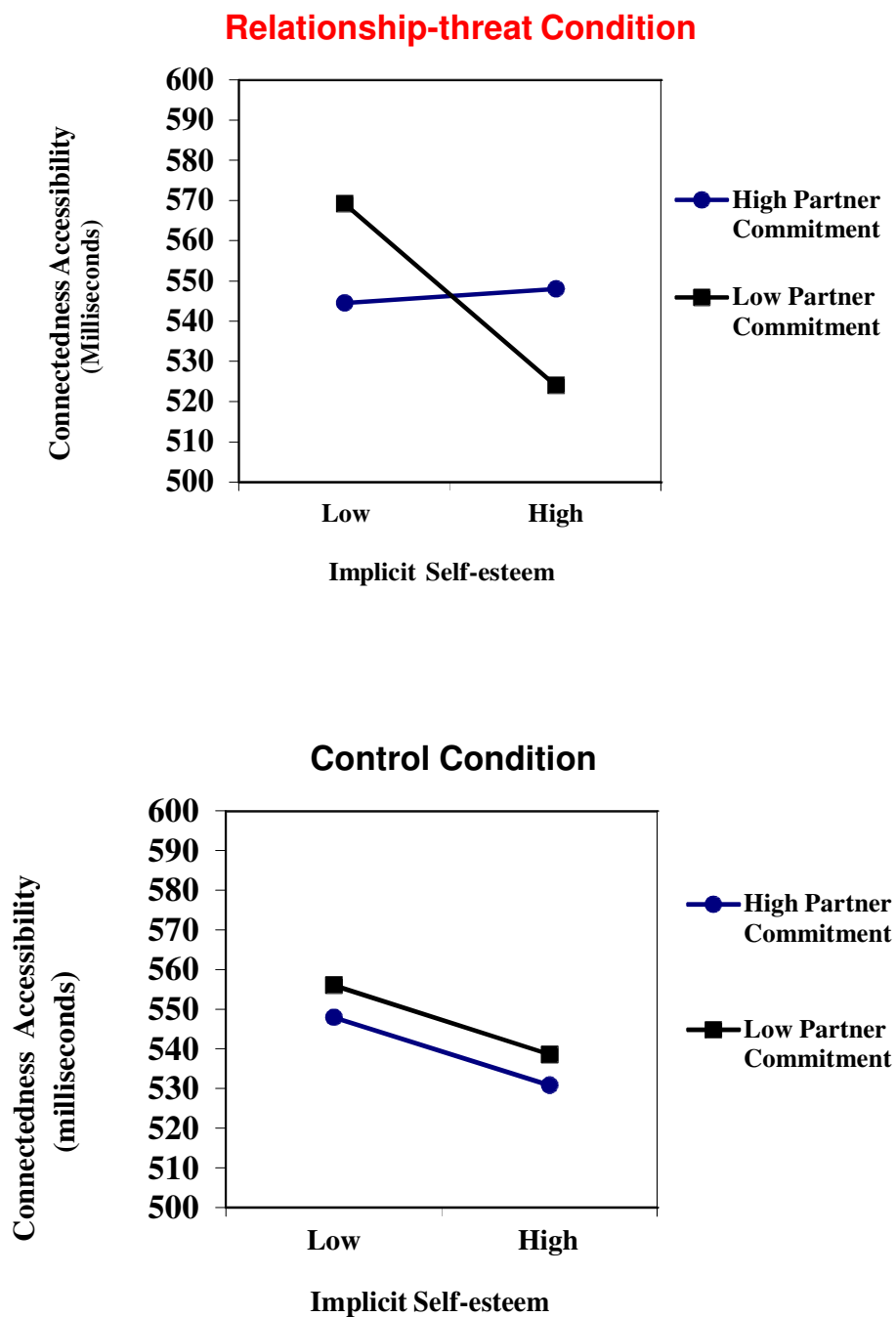
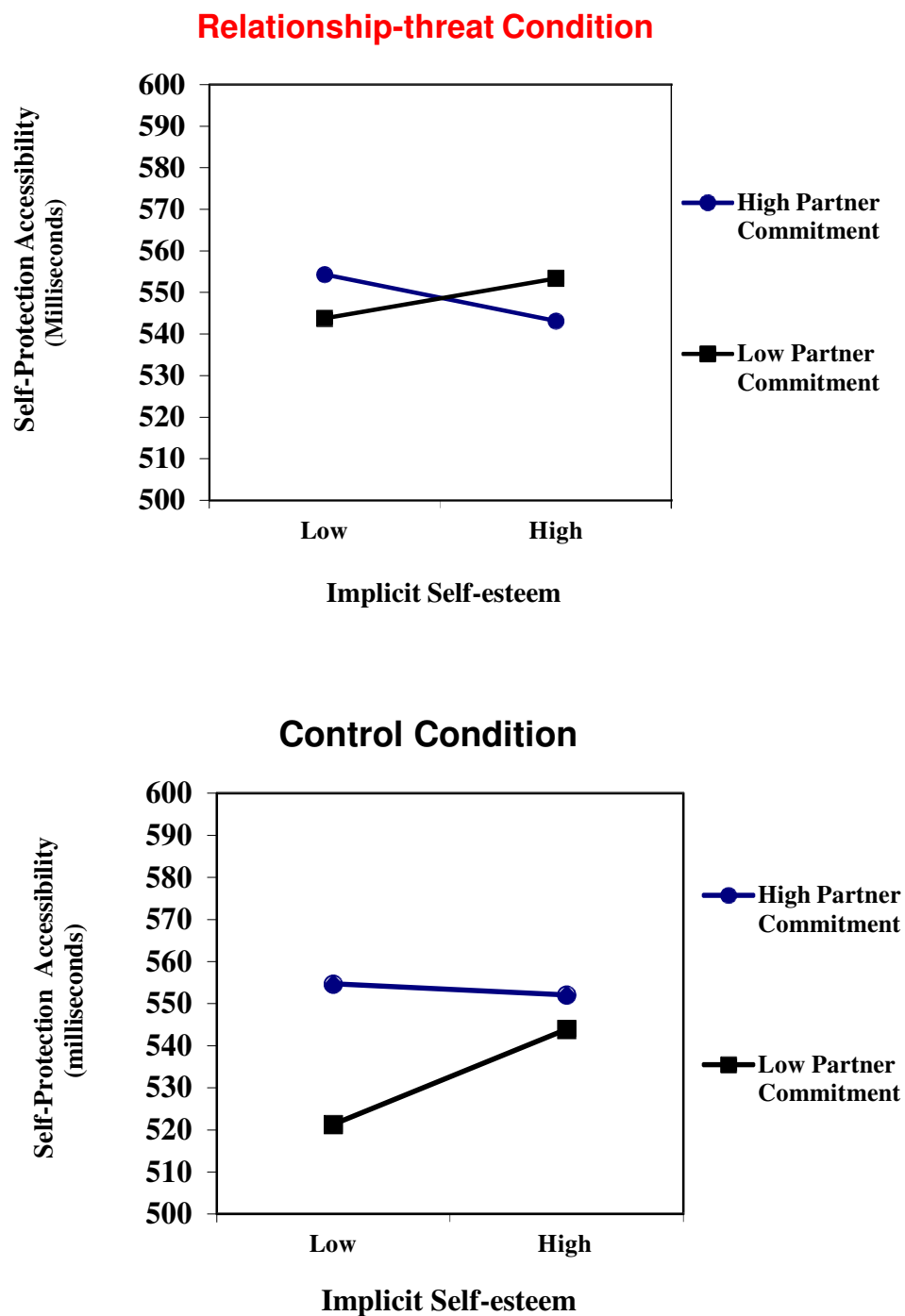


Figure 2. Predicting participants' self-protection accessibility from relationship-threat condition, implicit self-esteem, and perceived partner commitment.



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