For Better, For Worse: Discrepancies between Implicit and Explicit Evaluations in

Newlywed Marriage

by

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Biographical Sketch

Michael R. Maniaci was born on March 4, 1983 in Reading, Pennsylvania. He attended Albright College, where he received a Bachelor's Degree in Psychology in 2004. During his time at Albright College, he obtained several academic honors and awards, including merit-based scholarships from Albright College, the Broadbent Foundation, and U.P.S., and induction into the Psi Chi National Psychology Honor Society. He graduated summa cum laude with college honors and departmental distinction.

After spending two years working on research at the Positive Psychology Center at the University of Pennsylvania, Michael enrolled in the Doctoral Program in Social-Personality Psychology at the University of Rochester in 2006, working with Harry T. Reis and Ronald D. Rogge. Michael received the Master of Arts degree in October of 2009 following his completion with honors and distinction of the Ph.D. qualifying examination and Master's thesis. Michael received a Certification in Quantitative Methods in Psychology in May of 2013. During his time at the University of Rochester, Michael received the Sproull University Fellowship, the Alfred Baldwin Award for Excellence in Research, the Emory Cowen Award for Best First-Authored Article, and the Helen and Vincent Nowlis Award for Excellence in Teaching and Mentoring. Michael began an appointment in 2013 as a limited-term lecturer at Brock University in St. Catharines, Ontario. In 2014, Michael began an appointment at Florida Atlantic University in Boca Raton, Florida.

The following publications resulted from work conducted during doctoral study:

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Reis, H. T., Gable, S. L., & Maniaci, M. R. (2014). Event-sampling and other methods for studying daily experience. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social psychology* (2nd edition, pp. 373-403). New York: Cambridge University Press.

Maniaci, M. R. & Rogge, R. D. (2014). Caring about carelessness: Participant inattention and its effects on research. *Journal of Research in Personality, 48*, 61-83.

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Acknowledgments

Abstract

During the early years of marriage, newlyweds may suppress or deny nascent doubts about their marriage in order to maintain a sense of security and justify their commitment. These circumstances may promote divergence between automatic evaluative reactions (implicit attitudes) and self-reported relationship satisfaction. This form of ambivalence may both signify emerging disillusionment and directly influence relationship functioning. The current research explored the nature of discrepancies between implicit and explicit evaluations in the context of newlywed marriage using intensive longitudinal methods and dyadic data from a sample of 175 newlywed couples. Hypotheses focused on consequences of discrepancies between implicit and explicit evaluations and the degree to which discrepancies are associated with factors that affect spouses' motivation or ability to openly accept (rather than defensively deny or suppress) automatic evaluative reactions. Results indicated that implicit and explicit evaluations tended to be more congruent for those relatively high in attachment anxiety and for those relatively low in attachment avoidance, dispositional mindfulness, and self-esteem. Results also highlighted several ways in which discrepant evaluations may influence relationship functioning. Discrepancies between implicit and explicit evaluations were associated with greater variability in relationship satisfaction, greater reactivity to a spouse's daily negative behavior, and relatively steeper declines in relationship satisfaction over time. Overall, results suggest that congruence between implicit and explicit evaluations may reflect motivational processes and may have implications for long-term relationship functioning.

Contributors and Funding Sources

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Chapter 1: Introduction

The early years of marriage are a difficult time for many couples, who must learn to cope with the inevitable challenges posed by interdependence. Although relationship satisfaction is relatively high on average during this period (Kurdek, 1998), the divorce rate peaks in the first few years of marriage. Among first marriages, 20% end in divorce or separation within the first 5 years, which is approximately double the rate in the following 5 years (Bramlett & Mosher, 2002). Furthermore, marital satisfaction tends to decline for both men and women over the first year (Ruvolo, 1998) and positive interactions become less frequent over the first 2 years of marriage (Huston, Caughlin, Houts, Smith, & George, 2001). Therefore, early marriage represents a significant period of adjustment for many couples, some of whom will ultimately separate, divorce, or remain in unsatisfying relationships.

During this period of adjustment and decreasing positivity, acknowledgement of nascent doubts or dissatisfaction may be exceptionally distressing. Marriage represents a substantial commitment and married individuals, entering into what they may perceive as the largest commitment of their life to date, may therefore experience pronounced motivation to deny or suppress nascent doubts in order to justify their commitment. At the same time, conflict, disagreements, and occasional negative feelings are common consequences of interdependence, particularly as couples begin interacting across a broader range of domains (relative to the focus on positive domains that characterizes the earliest stages of relationships; Holmes, 2000). Accordingly, the relatively high rates of satisfaction typically reported by newlywed couples on self-report measures may belie

internal turmoil. Such internal doubts, even when not outwardly expressed or consciously acknowledged, might represent early signs of marital disillusionment (Lee, Rogge, & Reis, 2010).

When a married individual suppresses or denies internal doubts about his or her relationship, a discrepancy may form between consciously reported relationship satisfaction and internal or implicit evaluations of one's spouse. The current research explored the nature of such discrepancies in the context of early marriage. To what extent does self-reported relationship satisfaction tend to converge with nonconscious evaluations of a spouse? What factors (such as individual differences and relationship processes) contribute to discrepancies between these types of evaluations? Do such discrepancies represent measurement error, or do they reflect conceptually meaningful and consequential processes? Could such discrepancies influence perceptions and behavior over the early years of marriage? These and related questions are the focus of the current research.

Theoretical Conceptions of Implicit and Explicit Attitudes

Dual process theories of cognition. Before exploring these questions in more detail, it will help to review theoretical accounts of why self-reported evaluations of a spouse (or any other attitude object) may differ from internal, implicit evaluations. A large body of theoretical and empirical work has acknowledged that cognitive processes vary in regard to their conscious accessibility or automaticity. Highly automatic processes are characterized by a lack of intentionality and controllability, operate largely outside of conscious awareness, and function efficiently due to decreased demand for cognitive

resources (Bargh, 1996). Individuals tend to have minimal introspective access to the cognitive processes that underlie their decisions and behavior (Nisbett & Wilson, 1977), and even seemingly complex processes governing interpersonal perception and social behavior can operate outside of conscious awareness (e.g., Bargh, Chen, & Burrows, 1996; Niedenthal & Cantor, 1986).

The recognition that mental processes vary in regard to their automaticity is a fundamental principle in various *dual process theories* of cognition, which distinguish between *automatic* or *implicit processes* that operate largely outside of conscious awareness, and *controlled* or *explicit processes* that are more directly consciously mediated (e.g., Gawronski & Bodenhausen, 2006; Petty & Briñol, 2006; Petty & Cacioppo, 1986; Sloman, 1996; Smith & DeCoster, 2000). Dual process theories vary widely in their scope and assumptions, but they share a major underlying commonality in distinguishing between two broad classes of cognitive processes. For instance, Sloman (1996) argued for the existence of two independent processing systems, or systems of reasoning. The first of these systems is characterized as a "slow-learning system" that changes based on repeated pairings among stimuli that gradually strengthen associations in memory over time. The second system is a "fast-learning system" that changes in response to rule-based reasoning involving logical and symbolic representations and consciously controlled higher-order cognitive processing. Strack and Deutsch (2004) similarly distinguished between an *impulsive system* that operates automatically and efficiently via spreading activation in an associative network, and a *reflective system* that

operates based on logic and propositional reasoning (allowing for more complex operations, but also requiring more cognitive resources).

Dual process models of attitudes. Dual process theories of cognition have substantially influenced the study of attitudes. Attitude researchers distinguish between *explicit attitudes*, which represent consciously accessible evaluations of an attitude object, and *implicit attitudes*, which represent automatically activated evaluative reactions that may operate outside of conscious awareness via spreading activation. This distinction assumes that attitude objects are stored in memory in associative networks with links of varying strength to other positive and negative concepts, and that explicit attitudes do not necessarily directly represent these underlying associations (Greenwald et al., 2002). While explicit attitudes are typically assessed using self-report measures, implicit attitudes require less direct measurement strategies (see Gawronski & De Houwer, 2014, for a review of such measures). For example, the Affect Misattribution Procedure (AMP; Payne, Cheng, Govorun, & Stewart, 2005) measures the influence of briefly presented (primed) stimuli on pleasantness ratings of a subsequently presented unfamiliar symbol, which presumably captures the automatic evaluative reactions elicited by the primed stimuli. Other measures use reaction time or performance in categorization tasks to assess implicit attitudes. Evaluative priming measures (Fazio, Jackson, Dunton, & Williams, 1995), the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) and the Go/No-go Association Task (GNAT; Nosek & Banaji, 2001) all record reaction times or accuracy in categorizing stimuli representing an attitude object in conjunction with other positive or negative stimuli. The assumption underlying these

measures is that the mere presentation of a stimulus automatically elicits evaluative reactions, which can be measured by their subsequent effects on perception or behavior outside of conscious awareness.

Dissociated systems: Dual attitude models. Several theorists have argued that implicit and explicit attitudes represent the operation of distinct processing systems. Such *dual attitude models* assume that an individual can simultaneously hold divergent implicit and explicit attitudes, representing independent mental representations arising from dissociated cognitive processes. For instance, Wilson, Lindsey, and Schooler (2000) argued that when attitudes change, new attitudes do not immediately overwrite prior attitudes; rather, new explicit attitudes can exist simultaneously with implicit evaluations that represent more gradually changing remnants of the former attitude.

Rydell and McConnell (2006) applied Sloman's systems of reasoning distinction to attitudes, arguing that each of Sloman's systems yields a distinct type of attitude. According to Rydell and McConnell, explicit attitudes develop and change via Sloman's "fast-learning system" in response to rule-based reasoning and consciously mediated higher-order cognitive processing. Such attitudes take into account logical, abstract reasoning and can change quickly and flexibly in response to new information or reappraisals of existing information. In contrast to these consciously mediated explicit attitudes, implicit attitudes develop and change via Sloman's "slow-learning system" as a result of gradual, associative learning based on repeated pairings of stimuli. Experimental evidence supports the view that implicit attitudes correspond to paired associations, while explicit attitudes change more rapidly in response to new information or deliberate

cognitive processing (Gregg, Seibt, & Banaji, 2006; Rydell, McConnell, Mackie, and Strain, 2006; Rydell, McConnell, Strain, Claypool, & Hugenberg, 2007).

Interacting systems: Process-oriented models. Rather than assuming that implicit and explicit attitudes result from dissociated systems, other approaches assume that implicit and explicit attitudes reflect the interaction of cognitive systems. For instance, the MODE (Motivation and Opportunity as Determinants [of behavior]) model argues that implicit measures directly assess evaluative associations representing the underlying attitude, while explicit measures assess these associations after they are filtered through higher-order cognitive processing and subject to impression management or other reporting biases.

Similar to the systems of reasoning approach, the associative-propositional evaluation (APE) model focuses on two classes of cognitive processing—associative and propositional processes (Gawronski & Bodenhausen, 2006). Like Sloman's "slow-learning" system, associative processes involve the automatic activation of a learned association. Propositional reasoning, in contrast, involves the assignment of truth values to an association or other proposition. Much like Sloman's "fast learning" system, propositional reasoning can change quickly in response to new information. According to the APE model, implicit attitudes reflect the automatic activation of associative evaluations in the presence of relevant stimuli, regardless of higher-order beliefs about the accuracy of those associations. In contrast, explicit attitudes reflect propositional reasoning, such that automatically activated associations are evaluated in terms of their consistency with other momentarily accessible propositions. If the automatically

activated associations are compatible with these propositions, then explicit and implicit measures will converge, with both representing the underlying associations. If automatic associative evaluations are inconsistent with other propositions, they may be labeled as false, yielding discrepancies between implicit and explicit attitudes. In contrast to dual attitude models, the APE model thus argues that explicit attitudes are constructed online in response to momentarily accessible propositions rather than reflecting independently stored mental representations.

Similar to the APE model, the Meta-Cognitive Model (MCM) assumes that explicit and implicit attitudes may be distinguished according to the role of evaluations of truth or falsity (Petty & Briñol, 2006; Petty, Briñol, & DeMarree, 2007). In contrast to the APE model, the MCM does not assume that explicit attitudes are constructed online. Rather, the MCM assumes that evaluative associations are stored in memory along with assessments regarding their truth or falsity, or with varying degrees of certainty. For instance, an individual may have an automatic association between a social group and a global negative evaluation, but this may be stored along with a "validity tag" stating that the association is invalid. While measures of implicit attitudes assess the underlying associations regardless of such validity tags, explicit measures take into account evaluations of the certainty or validity of automatically activated associations.

These process-oriented models differ from dual attitude models in their assumptions about how implicit and explicit attitudes interact. Dual attitude models typically assume that implicit and explicit attitudes are stored separately in memory and operate in parallel as a result of independent systems, without significant interactive

effects (Petty et al., 2007). In contrast, both the APE model and the MCM allow for more complex interactions between implicit and explicit attitudes. For example, the MCM assumes that discrepancies between implicit and explicit attitudes can have a structural basis (due to "validity tags" that can be stored in memory along with other associations), and that these dissociations can influence behavior through the interactive effects of implicit and explicit processes.

As Petty and Briñol (2006) explain, this assumption has interesting implications for cases in which implicit and explicit attitudes diverge. Consider, for instance, a newlywed who has automatic negative affective reactions in the presence of his or her spouse along with a contradictory belief that these automatic reactions are wrong. According to the MCM, this attitude might have an underlying structure that includes a strong association between the spouse and "bad" (along with a tag stating that this association is invalid) as well as a weak association between the spouse and "good" (along with a tag stating that this association is valid). In this case, the individual may explicitly report a positive evaluation that belies a strong, negative implicit evaluation. Petty and Briñol (2006) refer to such a case as "implicit ambivalence"—the simultaneous existence of divergent explicit and implicit attitudes.[1] Implicit ambivalence differs from explicit ambivalence (the simultaneous acknowledgement of explicit positivity and negativity) because the individual does not acknowledge both evaluations as valid. As a result, the individual may not be aware (or may actively suppress awareness) of the ambivalence, unless the discrepant implicit evaluations enter consciousness. Although thoroughly comparing the merits of these and other conceptualizations of attitudes is

beyond the scope of the current research, the current work assumes that implicit and explicit evaluations of a romantic partner can interact in meaningful and consequential ways, as discussed in later sections.

To What Extent do Implicit and Explicit Attitudes Converge?

Given that different types of mental processes appear to underlie implicit and explicit attitudes (e.g., the gradual accumulation of affective experiences vs. deliberative processing of those experiences), differences in these processes might decrease the congruence between implicit and explicit attitudes. For instance, implicit attitudes change less readily than explicit attitudes in response to new information (Gregg et al., 2006; Rydell & McConnell, 2006; Rydell et al., 2007), which may reduce implicit-explicit congruence. This raises a preliminary question: To what extent do implicit and explicit attitudes tend to converge?

Associations between implicit and explicit measures are weak in some domains, such as self-esteem (e.g., Bosson, Swann, & Pennebaker, 2000) and racial prejudice (e.g., Dovidio, Kawakami, & Beach, 2001). A meta-analysis of studies using the IAT in various domains found an average correlation of .24 between implicit and explicit measures (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). Perhaps the most comprehensive evaluation of implicit-explicit attitude congruence was conducted by Nosek (2005; see also Nosek & Smyth, 2007), who randomly assigned participants to complete an implicit and an explicit measure of their attitudes in one of 56 domains. Averaging across domains, implicit and explicit attitudes shared approximately 23% of their variance (average $r = .48$). However, the correlation between implicit and explicit

measures varied considerably across domains, ranging from essentially no correlation (for preferences for Asians vs. Whites) to almost .80 (for pro-choice vs. pro-life attitudes).

Domain and measurement factors. The variability in implicit-explicit congruence can be partially explained by the nature of the assessed attitude domain (Nosek, 2005). For instance, implicit-explicit correlations tend to be higher for domains that are more dimensional with a simple, bipolar structure (i.e., pro-choice vs. pro-life attitudes) compared to less dimensional domains (i.e., preferences for Asians vs. Whites; Nosek, 2007). Implicit-explicit correlations also tend to be stronger for attitudes that are generally perceived as important (Nosek, 2007).

Measurement factors also partially determine implicit-explicit attitude congruence. Internal consistency places an upper limit on implicit-explicit correlations and is markedly low for some implicit measures (Bosson et al., 2000). Nosek and Smyth (2007) found that the median correlation between implicit and explicit measures (across the 56 domains they considered) increased from .37 to .48 after using structural equation modeling to account for the measures' internal consistency. Payne, Burkley, and Stokes (2008) argued that implicit and explicit measures are most likely to converge when they share greater structural fit (i.e., the similarity of the measurement tasks). Implicit-explicit congruence may be underestimated, for instance, when an implicit measure assessing relative evaluations across two categories (e.g., preferences for African Americans vs. European Americans) is compared to an explicit measure of a single category (e.g., self-reported prejudice; Nosek, 2007). Similarly, an implicit measure of reaction times to

pictures of faces has minimal structural fit with a self-report measure including complexly worded questions. Payne et al. found that implicit and explicit measures with similar structures (e.g., comparing reaction times for categorizing pictures of faces to explicit ratings of those same pictures) yielded stronger implicit-explicit correlations. Implicit-explicit congruence also tends to be higher when explicit measures use affective items (e.g., valence ratings) rather than cognitive items (e.g., trait ratings), presumably due to greater fit with implicit measures (Hofmann et al., 2005).

Self-presentation. Considerable evidence suggests that implicit and explicit attitudes are least likely to converge when participants are motivated to deny a socially undesirable attitude. For instance, meta-analyses have found that the IAT is most strongly correlated with explicit attitudes for topics with minimal social sensitivity (e.g., consumer preferences as opposed to racial preferences; Greenwald, Poehlman, Uhlmann, & Banaji, 2009; Hofmann et al., 2005). Nosek (2005) found significantly weaker congruence between implicit and explicit attitudes in various domains among participants who reported self-presentation concerns (e.g., hiding one's negative evaluations to avoid others' disapproval). Payne et al. (2008) found a significantly stronger association between implicit and explicit measures of racial bias among participants instructed to respond honestly (disregarding social pressure to avoid bias) in comparison to participants instructed to avoid demonstrating bias. Similarly, Olson, Fazio, and Hermann (2007) found that implicit and explicit measures of self-esteem were significantly positively correlated only among participants who were asked to answer honestly and avoid presenting themselves in either a boastful or modest manner.

Motivated denial of negativity. In addition to self-presentation concerns (which might cause an individual to deliberately misrepresent an evaluation of which they are aware), other motivational factors might reduce implicit-explicit attitude congruence outside of conscious awareness. Implicit and explicit attitudes are less likely to converge when participants report greater motivation to respond without negativity (i.e., believing that it would be unacceptable to evaluate the attitude object negatively; Nosek, 2005). As a result, implicit-explicit discrepancies may reflect tendencies to deny or suppress one's own negative automatic evaluative reactions. Epstein (1998) noted that implicit-explicit discrepancies of this sort are analogous to the Freudian concept of repression, in which unconscious thoughts that would create anxiety if acknowledged are forcefully maintained in an inaccessible state.[2]

The idea of defensively denying one's own implicit negativity has been most thoroughly explored in the domain of self-esteem, in which the pattern of high explicit but low implicit self-esteem is sometimes referred to as *defensive self-esteem* (e.g., Bosson, Brown, Zeigler-Hill, & Swann, 2003). This discrepant pattern is associated with other forms of defensive behavior, including greater unrealistic optimism (Bosson et al., 2003), behavioral self-handicapping (Lupien, Seery, & Almonte, 2010), in-group bias, and reactivity to cognitive dissonance manipulations (Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003). Individuals with discrepant high self-esteem also react more strongly to self-affirmation manipulations and pay greater attention to words related to defensiveness (e.g., "defensive," "fragile") in a visual attention task (Haddock & Gebauer, 2011). Furthermore, experimentally manipulating the accessibility of implicit

self-associations using a subliminal priming procedure led to greater outgroup derogation when those implicit self-associations were discrepant with explicit self-esteem (Kernis et al., 2005). As a whole, these results suggest that the explicit denial of one's implicit negative evaluations may spur defensive behavior that helps bolster a fragile sense of self-worth.

Implicit and Explicit Evaluations of Romantic Relationships

As with attitudes in other domains, close relationships research has demonstrated small and inconsistent associations between implicit evaluations of romantic partners and explicit relationship satisfaction. LeBel and Campbell (2009) found a significant, though modest, correlation of .19 between implicit partner evaluations and explicit satisfaction. LeBel and Campbell (2013) found significant correlations between implicit partner evaluations and explicit ratings of the partner ($r = .10$) as well as with explicit ratings of relationship satisfaction aggregated across a daily diary period ($r = .22$). Lee et al. (2010) found a similarly sized significant correlation of .20 between implicit and explicit relationship evaluations in their first study, but did not find a significant correlation in a second study. Other studies have found no significant association between implicit and explicit relationship evaluations (e.g., Banse and Kowalick, 2007; Banse et al., 2013; Scinta & Gable, 2007), although, as discussed below, these associations were moderated by other factors. Of all the research domains included in a meta-analysis of studies using the IAT, the domain of close relationships exhibited the weakest correlation ($r = .09$) between implicit and explicit attitudes (Greenwald et al., 2009).

In addition to the weak correspondence between implicit and explicit partner evaluations, previous research has also demonstrated that implicit partner evaluations uniquely predicted relationship outcomes, suggesting that the weak implicit-explicit correlations are not due to invalidity of implicit measures. Individuals with more positive implicit evaluations report feeling more secure in their relationships (Zayas & Shoda, 2005) and are less likely to break up over time (LeBel & Campbell, 2009; Lee et al., 2010). When combined with low working memory capacity (which presumably promotes reliance on implicit evaluations), more positive implicit partner evaluations also predicted more adaptive reactions to a partner's criticism (Murray, Lupien, & Seery, 2012) and to threats to one's feelings of trust (Murray, Gomillion, Holmes, Harris, & Lamarche, 2013). Using an experimental design, Murray et al. (2011) found that temporarily activating more positive implicit partner evaluations using an evaluative conditioning procedure increased self-reported confidence in a romantic partner's love and commitment. Finally, LeBel and Campbell (2013) found that positive implicit partner evaluations buffered against the influence of negative explicit evaluations on the positivity of daily behavior. Taken as a whole, this body of work supports the validity of measures of implicit partner evaluations, which appear to capture meaningful variation in relationship functioning that is not captured by explicit measures.

Implicit-explicit congruence in the context of newlywed marriage. Of the existing research on implicit evaluations of romantic partners, almost no studies have focused on implicit attitudes measured during the newlywed stage of marriage. Newlywed marriage provides a unique context in which to study implicit-explicit

discrepancies for several reasons. First, the early years of marriage represent a period of significant transition. Early in relationships, interaction is often predominantly positive due to self-presentation and the tendency to prioritize interacting in restricted, positive settings (Murray & Holmes, 1993). As relationships progress and partners become more interdependent and interact across a broader range of settings, they are likely to become increasingly aware of each other's imperfections (Holmes & Boon, 1990; Holmes, 2000), which may raise doubts and threaten their sense of relationship security (Murray & Holmes, 1993). Over time, couples may also exhibit increasingly negative reactions to each other's habitual aversive or inconsiderate behavior (so-called "social allergens"; Cunningham, Shamblen, Barbee, & Ault, 2005). Thus, the honeymoon period (during which both implicit and explicit attitudes are likely to be relatively positive) may be followed by decreasing positivity for many couples. For instance, Huston et al. (2001) found that over the first 2 years of marriage, newlyweds declined significantly in the frequency with which they expressed affection and in the degree to which they perceived their partners as having positive personality traits.

While several longitudinal studies have documented a linear decline in explicit relationship satisfaction during the early years of marriage (e.g., Ruvolo, 1998), little is known about how implicit partner evaluations change over this time. Implicit and explicit attitudes may change at different rates (Rydell et al., 2007) and in response to different types of stimuli (Rydell et al., 2006). For instance, Murray, Holmes, and Pinkus (2010) found that responsive behavior predicted implicit partner evaluations 4 years later, but did not predict change in explicit attitudes. As a result of these differences between

implicit and explicit attitudes, their congruence is likely to fluctuate with increasing interdependence and other changes that characterize early marriage.

Another unique aspect of the newlywed period is that it follows the substantial commitment of marriage, which likely coincides with considerable motivation to deny, suppress, or transform information that may threaten one's sense of safety and security in one's marriage. Furthermore, given that some degree of overlap between mental representations of self and other characterizes close relationships (Aron, Aron, Tudor, & Nelson, 1991), acknowledging faults in one's partner may also imply faults in the self, further promoting the likelihood of responding defensively to negative information about a spouse. It may therefore be highly threatening to acknowledge commitment to an undesirable partner in a failing marriage. As decreasing positivity coincides with increases in interdependence, commitment, and barriers to dissolving the relationship (Holmes, 2000), newlyweds may experience substantial motivation to dispel nascent doubts in order to justify their commitment. As a result, newlywed marriage may represent an ideal context in which to study defensive motivational processes that contribute to discrepancies between implicit and explicit evaluations.

Why might implicit and explicit partner evaluations diverge in newlywed marriage? There are numerous reasons why individuals might exhibit discrepancies between their implicit and explicit evaluations of a spouse. As discussed previously, implicit-explicit attitude congruence is influenced by methodological factors, such as internal consistency and structural fit (or similarity) of measures. Such discrepancies might also emerge as a result of sudden changes in the relationship. Research in other

domains suggests that implicit attitudes generally change more gradually via repeated associations over time (in contrast to explicit attitudes, which can change rapidly through deliberative processing; Gregg et al., 2006). If the behavioral realities of a relationship suddenly change, implicit and explicit attitudes may shift at different rates, resulting in at least temporary dissociations.

In addition, discrepancies between implicit and explicit partner evaluations are likely influenced by motivational factors that lead an individual to deny, suppress, or transform the meaning of negative information while enhancing or exaggerating positive information relevant to their marriage. Given the substantial commitment associated with marriage, newlyweds might experience pronounced motivation to distort or avoid awareness of inner doubts. For instance, romantic couples tend to transform the meaning of each other's faults (e.g., viewing a partner's excessive criticism in light of his or her conscientiousness), presumably to quell the internal doubts such faults might otherwise raise (Murray & Holmes, 1993). The idea that romantic partners are generally motivated to enhance or exaggerate the positivity of their explicit evaluations is consistent with research on *positive illusions* in relationships. Murray, Holmes, and Griffin (1996) argued that the tendency to idealize imperfect partners promotes relationship quality by quelling doubts and maintaining a sense of security. Consistent with this reasoning, they found that partner idealization (i.e., rating a partner more positively than the partner's self-perception) predicted increases in relationship satisfaction, decreases in conflict, and relationship stability over one year. Miller, Niehuis, and Huston (2006) found that

spouses who idealized their partners as newlyweds were less likely than other spouses to experience declines in love over the first 13 years of marriage.

Implicit measures appear to be less susceptible to self-deception and other forms of motivated bias than explicit measures (Greenwald et al., 1998). For instance, past research has found that explicit (but not implicit) evaluations of relationship partners are significantly correlated with socially desirable responding (Banse et al., 2013; Zayas and Shoda, 2005).[3] These findings are consistent with the notion that romantic partners are motivated to enhance their partner evaluations at the explicit level—that is, to report more positive evaluations than are warranted. As a result, motivation to suppress or deny negative evaluations of a partner may decrease implicit-explicit congruence, as implicit attitudes are likely less influenced by such motivational processes than explicit attitudes.

A Longitudinal Model of Disillusionment in Newlywed Marriage

Taken as a whole, this prior theoretical and empirical work on the nature of implicit-explicit discrepancies has important implications for models of change in early marriage. The *disillusionment model* of marriage argues that marital distress and divorce begin with a decline in affection and an increase in feelings of ambivalence (Huston et al., 2001). Consistent with this model, Huston et al. (2001) found that newlyweds reported little ambivalence shortly after marriage, but reported significant increases in ambivalence during the first 2 years of marriage. Furthermore, couples who experienced relatively greater increases in self-reported ambivalence over those early years were significantly more likely to divorce within the first 13 years of marriage. Viewing the disillusionment model in light of the distinction between implicit and explicit attitudes

(and their interactions) suggests a modification of the model: If newlyweds are motivated to deny or suppress awareness of their early doubts, then disillusionment may emerge at the implicit level before the explicit level. Figure 1, discussed next, presents the patterns of implicit and explicit evaluations that comprise this conceptual model.

A. Congruent Relationship Satisfaction
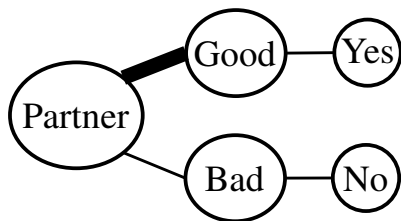
C. Explicit Ambivalence
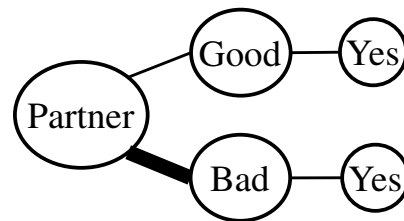
B. Discrepant Relationship Satisfaction (Implicit Ambivalence)
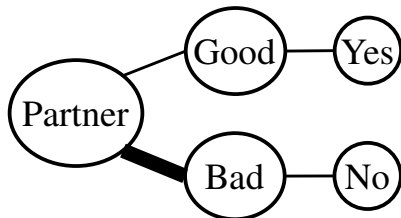
D. Congruent Dissatisfaction
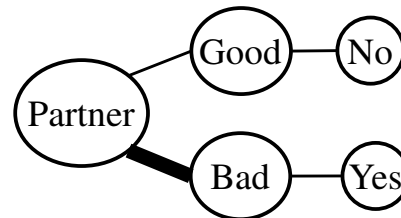
Figure 1. Patterns of implicit-explicit congruence in relationship satisfaction. Bold lines indicate relatively strong implicit associations. "Yes" and "No" represent evaluations of the certainty or validity of automatically activated associations.

Congruent high relationship satisfaction. Figure 1a demonstrates *congruent relationship satisfaction* as it would be conceptualized by the MCM approach to implicit and explicit attitudes. This pattern is characterized by strong automatic or implicit associations between "partner" and "good" (indicated by a darker bar in Figure 1a) and

minimal associations between "partner" and "bad," reflecting a positive implicit evaluation. The figure also depicts "validity tags" for each of these associations, such that the strong "partner-good" association is accepted as valid, while the weak "partner-bad" association is rejected as invalid, yielding a positive explicit evaluation. Given that newlywed stage of marriage is characterized by relatively high explicit satisfaction (Kurdek, 1998) and relatively positive interaction (Huston et al., 2001), this pattern of congruent relationship satisfaction is likely common in early marriage.

Discrepant relationship satisfaction. Figure 1b depicts *discrepant relationship satisfaction*. The primary difference in comparison to Figure 1a is that the implicit associations between "partner-bad" are stronger than those for "partner-good," indicating a negative implicit evaluation. Such a pattern may result from repeated negative affective experiences with the partner, perhaps reflecting decreases in the positivity of interaction (Murray et al., 2010). Despite this negative implicit evaluation, the individual depicted by Figure 1b still rejects the validity of these strong partner-bad associations, yielding a positive explicit evaluation (a pattern that Petty & Briñol, 2006, called *implicit ambivalence*). These unacknowledged negative implicit evaluations may represent an early stage of disillusionment (Lee et al., 2010). To the extent that there is a delay between the purported early decline in implicit evaluations and the acceptance of those negative implicit evaluations as valid, there will necessarily be a period of implicit ambivalence marked by relatively strong implicit-explicit discrepancies.

Congruent explicit ambivalence. Negative implicit evaluations that are accepted as valid foster either of two patterns of implicit-explicit congruence. Accepting negative

implicit evaluations as valid while also maintaining the validity of positive implicit associations would yield *explicit ambivalence*, depicted in Figure 1c. The ambivalence here is at the *explicit* rather than the implicit level; that is, the implicit ambivalence has been drawn into conscious awareness. As discussed previously, Huston et al. (2001) found that self-reported ambivalence increased over the first 2 years of marriage. The current model suggests that these couples experienced implicit ambivalence before acknowledging their doubts explicitly. Conscious awareness of ambivalent positive and negative evaluations is likely to feel aversive (Newby-Clark, McGrergor, & Zanna, 2002) and to therefore yield particularly strong motivation to resolve the discrepancy—more so than implicit ambivalence, which exists outside of conscious awareness and may not result in strong feelings of discomfort (Petty & Briñol, 2006). As a result, explicit ambivalence is likely to be relatively unstable.

Congruent dissatisfaction. Rejecting the validity of positive implicit evaluations while accepting the validity of negative implicit evaluations yields the second form of implicit-explicit congruence, *congruent dissatisfaction*, depicted in Figure 1d. In this case, the explicit ambivalence has been resolved by denying the validity of the "partner-good" associations while accepting the validity of the "partner-bad" associations, yielding congruent negative evaluations at both the implicit and explicit level. Although this pattern minimizes both implicit and explicit ambivalence, it is associated with particularly poor proximal relationship outcomes and distress (LeBel & Campbell, 2013).[4]

Summary. A few aspects of this longitudinal model of disillusionment are particularly relevant to the current purposes. First, given that explicit satisfaction tends to be high in early marriage (Kurdek, 1998) and behavior tends to be relatively positive at this time (Huston et al., 2001), it is likely that congruent relationship satisfaction is normative in the early honeymoon stage of newlywed marriage. Second, it is well established that explicit satisfaction declines over the early years of marriage (Ruvolo, 1998). To the extent that day-to-day behavior also becomes less positive, such declines are likely to promote either explicit ambivalence or congruent dissatisfaction.

The novel addition of the current model lies in specifying that discrepant relationship satisfaction (or implicit ambivalence) typically precedes either explicit ambivalence or congruent dissatisfaction, serving as a common transition period between congruent relationship satisfaction and these latter patterns of disillusionment in newlywed marriage. As noted by Lee et al. (2010), implicit partner evaluations may reflect disillusionment before spouses report distress in explicit evaluations. This seems likely for two reasons. First, the declines in the positivity of day-to-day behavior that occur in the early years of marriage (Huston et al., 2001) are likely to yield more negative implicit evaluations. Second, given the extraordinary commitment associated with marriage, couples are likely to defensively deny internal doubts when they first arise. If implicit "partner-bad" associations tend to arise before they are consciously accepted as valid due to idealization or other motivated processes, then this lag between implicit negativity and explicit acceptance of negativity will create state of implicit ambivalence. Although patterns of change are certain to vary across couples, this normative model of

the longitudinal time course of disillusionment in newlywed marriage forms a conceptual basis for the current work.

The Present Research

      To review, contemporary models of attitudes and implicit social cognition suggest that discrepancies between implicit and explicit attitudes can form as a result of processes that influence the motivation or ability to deny, suppress, or transform automatic or implicit evaluative reactions (e.g., Fazio, 1990; Fazio & Towles-Schwen, 1999). Such discrepancies represent a unique type of implicit ambivalence that may influence behavior without conscious awareness of feeling ambivalent (Petty & Briñol, 2006). Although prior research has examined the effects of implicit partner evaluations in relationships (e.g., LeBel & Campbell, 2009; Lee et al., 2010), the current research explored the nature of such discrepancies in the context of newlywed marriage by examining the interactive effects of implicit and explicit evaluations. Discrepancies between implicit and explicit evaluations may be pronounced in newlywed marriage, as couples face the inevitable challenges and conflict that coincide with interdependence at a time when they may be particularly motivated to justify their commitment by denying, suppressing, or transforming their internal doubts. Combined with the volatility that characterizes early marriage, such motivational factors present several unique opportunities for examining the nature of implicit-explicit discrepancies.

      As discussed in the following sections, the current research explored two general aspects of implicit-explicit partner evaluation congruence. The first of these involved individual differences that may moderate the congruence between implicit and explicit

partner evaluations. The second involved proximal and longitudinal consequences of implicit-explicit partner evaluation discrepancies for perceptions of the relationship and for relationship functioning and change over time.

Conceptual Predictors of Implicit and Explicit Partner Evaluation Congruence

The variability across studies in congruence between implicit and explicit evaluations in the domain of close relationships raises a conceptual question: Under what circumstances (or for what types of individuals) might implicit and explicit evaluations tend to correspond? As discussed previously, there are many reasons why measures of implicit and explicit attitudes may diverge that do not involve conceptually meaningful relationship processes. For instance, measures may diverge because of poor reliability or validity, a lack of structural fit between measures, or self-report response bias. Although these factors likely account for some of the divergence, existing theory and research suggests that implicit-explicit partner evaluation congruence may also reflect meaningful relationship processes.

Motivational processes affecting introspective awareness. Existing research suggests that implicit and explicit attitudes are most likely to diverge when an individual is motivated and capable of responding or behaving in a way that differs from their automatically activated associations. For instance, the MODE model (Fazio, 1990; Fazio & Towles-Schwen, 1999) argues that explicit (rather than implicit) attitudes guide behavior when individuals are motivated to engage in deliberative processing and have the ability (e.g., cognitive resources, time) to modify their initial impulses. This is loosely analogous to the concept of transformation of motivation in interdependence theory

(Kelley & Thibaut, 1978), which argues that when individuals have sufficient motivation and cognitive resources, they engage in cognitive processes that modify their gut-level self-interested preferences in ways that account for the broader context of their interdependence (Rusbult, Olsen, Davis, & Hannon, 2001). Similarly, implicit and explicit partner evaluations may diverge as a result of motivational processes that suppress or modify the influence of implicit partner evaluations.

Drawing on interdependence theory, Scinta and Gable (2007) argued that individuals with more formidable barriers to exiting a relationship (e.g., who have invested considerable resources into a relationship or perceive few promising alternative partners) might be particularly motivated to deny negative implicit evaluations. Therefore, pronounced barriers to exiting a relationship might decrease the congruence between implicit and explicit partner evaluations. Consistent with this hypothesis, Scinta and Gable found that barriers to exiting a relationship significantly moderated the association between implicit partner evaluations and self-reported relationship satisfaction across two samples. In both samples, implicit and explicit evaluations were significantly positively correlated among those with relatively low barriers to exiting (i.e., low investment and good alternatives to the relationship); in contrast, for those with relatively high barriers to exiting, the association was nonsignificant (in Study 1) or significantly *negative* (in Study 2). These results support two conclusions relevant to the current study. First, the correspondence between implicit and explicit partner evaluations is related to conceptually meaningful relationship processes (rather than simply reflecting measurement issues). Second, implicit-explicit partner evaluation congruence is affected

by one's motivation to deny rather than openly acknowledge underlying negativity in one's relationship.

Open awareness of internal states: Moderation by dispositional mindfulness. To the extent that the congruence between implicit partner evaluations and explicit relationship satisfaction reflects motivational processes, it may be moderated by individual differences that influence the likelihood of defensively denying rather than openly accepting and attending to one's underlying doubts and implicit negativity. One likely moderator of this type of defensiveness is dispositional mindfulness.

Defining mindfulness. The state of mindfulness involves being aware of and attentive to the present moment (Brown & Ryan, 2003). Furthermore, mindfulness involves an open, receptive, and non-judgmental orientation to ongoing experience, both internal and external (Bishop et al., 2004). This accepting, non-judgmental orientation distinguishes mindfulness from other forms of self-focused attention (Brown & Ryan, 2003) and is thought to enable greater awareness of momentary thoughts and feelings without extensive elaborative processing (Bishop et al., 2004). The combination of momentary awareness with an open, non-elaborative attitude may enable both greater awareness and acceptance of momentary thoughts and feelings (Shapiro, Carlson, Astin, & Freedman, 2006).

Although mindfulness can vary over time and across situations within individuals, there are also relatively stable individual differences in the tendency to employ mindfulness (Brown & Ryan, 2003). Such individual differences may promote greater congruence between implicit and explicit attitudes for at least two reasons, as discussed

in the following sections. First, dispositional mindfulness may facilitate awareness of internal states (including automatic affective reactions and other traces of implicit evaluations). Second, mindfulness may foster greater acceptance of potentially threatening states, which may decrease motivation to defensively deny threatening experiences (such as internal doubts about one's marriage; Lakey, Kernis, Heppner, & Lance, 2008).

Dispositional mindfulness and self-knowledge. Because individuals with high levels of dispositional mindfulness are relatively more attentive to internal as well as external stimuli, mindfulness should promote greater awareness of one's internal experiences, such as thoughts, feelings, and sensations (e.g., Bishop et al., 2004; Brown & Ryan, 2003). Existing research suggests that mindfulness does, in fact, promote greater self-knowledge and self-awareness in numerous domains (see Carlson, 2013, for a review). For instance, dispositional mindfulness is positively associated with the ability to identify and describe one's emotions (Baer, Smith, Hopkins, Krietemeyer, & Tony, 2006) and to differentiate among emotional experiences (Hill & Updegraff, 2012). Mindfulness may facilitate self-knowledge by increasing access to information about one's ongoing experiences (Carlson, 2013).

Dispositional mindfulness and defensiveness. In addition to promoting self-knowledge, the open and nonjudgmental orientation of mindful attention may reduce defensive processes that lead to the avoidance of negative or threatening thoughts, feelings, or sensations (Bishop et al., 2004). This nonjudgmental orientation allows threatening thoughts or negative feelings to be acknowledged and accepted rather than

denied, suppressed, or distorted. To the extent that mindful attention promotes viewing threatening or negative experiences as transient mental phenomena, this orientation may render such experiences less subjectively distressing. The open, nonjudgmental orientation associated with mindful attention allows mindful individuals to more fully experience and thoughtfully respond to affective episodes without avoiding or becoming overwhelmed by them (Chambers, Gullone, & Allen, 2009).Consistent with these ideas, mindfulness is associated with less underengagement with emotional experiences (e.g., denial, suppression, or avoidance) as well as less overengagement (e.g., rumination, excessive worry or distress), representing more adaptive emotion regulation (Baer et al., 2006; Brown & Ryan, 2003; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007; Jiminez, Niles, & Park, 2010). Mindful individuals not only report less global emotional distress, but also report greater self-efficacy in their ability to repair negative mood states (Feldman et al., 2007; Jiminez et al., 2010). Furthermore, neuroimaging and neurophysiological studies have found that dispositional mindfulness is associated with decreased neural reactivity to unpleasant stimuli (Brown, Goodman, & Inzlicht, 2013; Creswell, Way, Eisenberger, & Lieberman, 2007).

The emotion regulation benefits of mindfulness seem to generalize to interactions with romantic partners. Barnes, Brown, Krusemark, Campbell, and Rogge (2007) found that dispositional mindfulness was associated with lower anxiety and anger/hostility both before and after a laboratory-based conflict discussion with a romantic partner. Furthermore, state mindfulness during the conflict discussion was associated with decreased objective behavioral codes of verbal aggression and negativity (displaying

tension, irritation, or anger), as well as marginally less withdrawal behavior (avoiding the interaction).

In addition to mindful individuals' more adaptive emotion regulation, more direct evidence supports the hypothesis that dispositional mindfulness reduces defensiveness in response to potentially threatening thoughts and feelings. For instance, Lakey et al. (2008) found that dispositional mindfulness was negatively correlated with trained coders' ratings of verbal defensiveness (denying, avoiding, or distorting information) when discussing potentially self-threatening information with an interviewer (Lakey et al., 2008). Niemiec et al. (2010) examined the moderating role of dispositional mindfulness on mortality salience effects (the validation of one's worldview as a defensive response to reminders of mortality; Greenberg, Solomon, & Pyszczynski, 1997). Across 7 experiments, mortality salience effects were attenuated among participants high in dispositional mindfulness. Mindful individuals were also less likely to suppress death thoughts immediately following a mortality salience prime, suggesting that they were more open to these potentially threatening thoughts.

Dispositional mindfulness and implicit-explicit congruence. Because mindful attention is associated with increased self-awareness and decreased defensiveness, individuals high in mindfulness may be more aware of their implicit evaluations and more likely to take them into account when expressing their explicit attitudes (Brown & Ryan, 2003). Consistent with this prediction, Brown and Ryan (2003) found that mindfulness moderated the association between explicit affect (self-reported emotion ratings) and implicit affect (an IAT assessing the strength of automatic associations

between self [vs. non-self] words and positive and negative emotion words). These two measures were significantly positively associated among persons high in dispositional mindfulness, but were uncorrelated among persons with low or average levels of mindfulness. Similarly, Koole, Govorun, Cheng, and Gallucci (2009) found that participants who were randomly assigned to engage in a brief mindfulness meditation exercise in the laboratory exhibited greater congruence between their implicit and explicit self-esteem than participants in a control condition.

Building on this work, I expect that dispositional mindfulness should moderate the association between implicit and explicit partner evaluations. Conceptually, the open and accepting awareness to inner experience that accompanies mindfulness should reduce the tendency to defensively deny one's internal doubts and negative implicit evaluations of a partner. Therefore, I hypothesized that implicit and explicit partner evaluations would be relatively more congruent for individuals high in dispositional mindfulness than for individuals low in dispositional mindfulness (*Hypothesis 1*).

Attachment theory: Moderation by attachment anxiety and avoidance. Another set of variables that may moderate the congruence of implicit and explicit partner evaluations are delineated by attachment theory (Bowlby, 1982). Bowlby argued that humans evolved an innate behavioral system (the attachment system) that protects individuals from danger by maintaining their proximity with attachment figures, who provide assistance, protection, and support in times of need or distress. Bowlby theorized that when such attachment figures were available and responsive to needs, this type of caregiving would promote the development of a *secure attachment style* characterized by

the belief that attachment figures will generally be available and responsive. In contrast to the sense of security fostered by responsive caregiving, caregivers who are unavailable or who provide inconsistent, overbearing, or unresponsive care promote the development of negative working models (mental representations) of the self or others and the adoption of alternative attachment strategies. Bowlby believed that these working models and attachment strategies influenced interpersonal functioning throughout life.

Adult attachment theory (e.g., Hazan & Shaver, 1987; Shaver & Mikulincer, 2002; Mikulincer & Shaver, 2007) builds on Bowlby's theorizing by exploring how the attachment system functions in the context of adult relationships. Research in this tradition has emphasized individual differences in attachment styles that are presumed to develop as a result of caregiving experiences (in both childhood and adulthood) and the working models and attachment strategies that such experiences promote. These individual differences are best represented by two continuous and partially independent dimensions (Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998)—*attachment anxiety* (characterized by excessive worry about rejection) and *attachment avoidance* (characterized by discomfort with closeness and intimacy). In this two-dimensional model, attachment security is represented as low levels of both attachment anxiety and avoidance. As discussed below, both forms of insecurity are associated with relationship-relevant cognition and emotion regulation, and each dimension may moderate the congruence between implicit and explicit partner evaluations.

Attachment security and the two-level model of psychological defenses. As discussed previously, individuals in romantic relationships tend to idealize their romantic

partners, and such idealization is associated with positive relationship outcomes (e.g., Murray et al., 1996). Taylor and Brown (1988) argued that positively biased self-evaluations are both normative and adaptive. Mikulincer and Shaver (2005) reframed these and related findings from the perspective of adult attachment theory, arguing for a two-level model of psychological defenses. At the *primary level*, attachment security provides a stable psychological foundation that maintains optimal psychological functioning without the need for defensive processes that distort one's view of reality. In the absence of attachment security, a *secondary level* of psychological defense may develop to protect an insecure individual's fragile sense of safety through compensatory, defensive processes that distort their view of reality. Several such tendencies have been identified, including positively distorting one's self-image (e.g., Taylor & Brown, 1988), rigidly defending one's beliefs and decisions while rejecting contrary or ambiguous information (e.g., Kruglanski, 1989), derogating outgroups (e.g., Devine, 1995), and defensively validating one's worldview in response to reminders of mortality (e.g., Greenberg, Solomon, & Pyszczynski, 1997). Mikulincer and Shaver (2005) review evidence indicating that each of these defensive processes is more characteristic of individuals high on attachment anxiety or avoidance than of more securely attached individuals.

According to this two-level model of psychological defenses, the foundation of safety and confidence provided by attachment security allows for greater openness in processing social information with less need for defensive distortions. Rather than shying away from threatening emotions or ruminating on their own distress, securely attached

individuals are able to acknowledge potentially threatening information, yielding more realistic views of themselves and others (Mikulincer & Shaver, 2007). As a result, attachment security, like dispositional mindfulness, may promote greater openness to and awareness of one's experience, including a willingness to openly experience and reflect on one's own thoughts and feelings—both positive and negative (Mikulincer & Shaver, 2005; 2007).

Attachment avoidance and defensiveness. The view that attachment insecurity promotes defensiveness is most evident among persons high in attachment avoidance. Attachment avoidance is characterized by various *deactivating strategies* that suppress the activation of the attachment system, presumably as an adaptation to unresponsive or hostile caregivers (Bowlby, 1982). For instance, individuals high in attachment avoidance tend to suppress negative emotions and potentially distressing thoughts regarding romantic relationships and behave in ways that maintain emotional distance from close others (Mikulincer & Shaver, 2007). Avoidantly attached individuals are less willing to self-disclose, even in response to an interaction partner's disclosure (Mikulincer & Nachshon, 1991). Mikulincer (1998) found that although attachment avoidance predicted greater physiological reactivity to anger-inducing episodes, individuals high in attachment avoidance denied this reaction by self-reporting *less* anger than more secure participants. Highly avoidant individuals also reported a greater inclination to deal with anger by trying to escape from the situation rather than trying to resolve the cause of the anger. In addition to being less likely to express emotions, avoidantly attached individuals are also less willing to self-disclose personal information.

Because of the tendency for individuals high in attachment avoidance to suppress attachment- and relationship-relevant thoughts, it is likely that such individuals would have decreased awareness of their implicit partner evaluations—particularly if those evaluations are threatening. As discussed previously, given the considerable commitment associated with marriage, acknowledging dissatisfaction with one's choice in a marital partner might be highly self-threatening. This threat might be amplified for individuals high in attachment avoidance, who are likely to feel uncomfortable with the interdependence implied by such reactions. As a result, individuals high in attachment avoidance may suppress or defensively deny automatic negative evaluative reactions towards a spouse. Ironically, individuals high in attachment avoidance may also suppress positive evaluative associations, as such reactions would imply greater closeness and interdependence, which is inconsistent with their desire to avoid closeness. In contrast, a securely attached individual (or one relatively low on attachment avoidance) may be better able to acknowledge negative and positive evaluations or affective reactions without denial or suppression. Therefore, I hypothesized that attachment avoidance would moderate the association between implicit and explicit partner evaluations, such that implicit and explicit partner evaluations would be more weakly associated among individuals relatively high in attachment avoidance (*Hypothesis 2*).

Attachment anxiety and defensiveness. Attachment anxiety is characterized by hypervigilant focus of attention and cognition on one's relationships. Individuals high on this dimension tend to be relatively sensitive to cues that might signal potential rejection by an attachment figure. Such individuals are apt to readily identify (or misidentify)

subtle cues of potential rejection, perhaps due to chronic activation of the attachment system. High attachment anxiety is also associated with increased attention to one's own distress (Mikulincer & Shaver, 2007). These *hyperactivating strategies* (which promote chronic, exaggerated functioning of the attachment system) may develop when caregivers are inconsistent in their caregiving, since vigilant monitoring of a caregiver's proximity and exaggerated expressions of one's own distress might encourage caregiving from such an individual. As a result, individuals high on attachment anxiety tend to maintain vigilant focus on their relationships (Mikulincer & Shaver, 2007).

The potential role of attachment anxiety in the association between implicit and explicit partner evaluations is not as straightforward as with attachment avoidance. On the one hand, the theorizing of Mikulincer and Shaver (2005; 2007) suggests that individuals who are high on attachment anxiety are relatively less capable of accurately processing and acknowledging their negative implicit evaluations of a romantic partner. Therefore, attachment anxiety, like attachment avoidance, might decrease the correspondence between implicit and explicit partner evaluations. On the other hand, because of their negative working models of attachment figures and their hypervigilant focus on signs of rejection, individuals high in attachment anxiety may also be more attuned to their internal doubts. Thus, in contrast to attachment avoidance and contrary to the view that attachment insecurity promotes defensiveness, attachment anxiety may *increase* the correspondence between implicit and explicit partner evaluations. These two competing hypotheses were both examined in the current study (*Hypotheses 3a and 3b*).

Dependency and risk regulation: Moderation by self-esteem. The risk regulation model (e.g., Murray, Holmes, & Collins, 2006) highlights yet another set of processes that may moderate the association between implicit and explicit partner evaluations. The risk regulation model argues that becoming interdependent with a romantic partner is risky to the self in that it opens one up to the possibility of exploitation and rejection (Murray et al., 2006). Therefore, according to this perspective, people tend to regulate their closeness and dependence in romantic relationships in order to balance the benefits of closeness with the risk of rejection that interdependence entails. According to this model, cognitive and behavioral processes that increase actual or perceived closeness are most likely to occur when people feel confident about a romantic partner's love and acceptance (Murray, Holmes & Griffin, 2000; Murray, Holmes, Griffin, Bellavia, & Rose, 2001). In contrast, doubts about a partner's acceptance may promote cognitive and behavioral processes that increase emotional distance with a romantic partner, presumably in order to defend oneself from the risk of rejection.

Appraisals of a partner's regard play a fundamental role in the risk regulation model, as such appraisals provide information about the risk of rejection. These appraisals are an essential input into the risk regulation system, as they help determine how an individual can regulate their closeness in order to balance the benefits and risks of interdependence. The model therefore posits an appraisal system that monitors one's dependence to close others and in the presence of dependence monitors signs of the partner's regard (i.e., their likelihood of accepting or rejecting the self). The output of the risk regulation system is phenomenologically experienced as self-esteem (a global

evaluation of one's self-worth). Consistent with the sociometer model of self-esteem (e.g., Leary & Baumeister, 2000), the risk regulation model assumes that self-esteem serves as a gauge of the likelihood that one will be socially accepted or rejected.

Similar to Mikulincer and Shaver's (2005; 2007) characterization of attachment anxiety and avoidance, the risk regulation model posits that low self-esteem promotes greater defensiveness regarding actual or imaged threats of rejection by a romantic partner. According to Murray et al. (2006), individuals with chronically low self-esteem have a more defensively calibrated risk regulation system, with a lower threshold for perceiving signs of potential rejection. To the extent that automatic negative associative reactions imply problems with the relationship, individuals with high self-esteem may be better able to openly acknowledge and process these reactions without feeling threatened. In contrast, low self-esteem individuals may perceive these reactions as more threatening and therefore respond defensively by denying or suppressing automatic evaluative reactions. Furthermore, when low self-esteem individuals are led to believe that their partners feel negatively about them, they tend to respond to this relationship threat by reporting less positive evaluations of the partner (Murray, Rose, Bellavia, Holmes, & Kusche, 2002). As a result of these defensive responses to relationship threats and decreased openness to self-threatening information, low self-esteem may yield discrepancies between implicit and explicit partner evaluations.

However, there is reason to suspect that the potential moderating role of self-esteem in the correspondence between implicit and explicit attitudes may be more complex than in the case of attachment avoidance. First, existing research suggests that

the explicit evaluations of people with relatively high self-esteem may not be more accurate than those of individuals with low self-esteem. Murray, Holmes, MacDonald, and Ellsworth (1998) demonstrated in 4 experiments that individuals with low self-esteem responded to an acute threat to their sense of self-worth by expressing greater doubts about their partner's regard and reporting more negative evaluations of their relationship. Individuals with high self-esteem did not show this defensive derogation of their partner. Moreover, individuals with high self-esteem responded to the acute threat to their self-worth in the *opposite* direction by reporting greater conviction of their partner's acceptance. Thus, both high self-esteem and low self-esteem individuals' explicit evaluations of their partner's regard were influenced by a contextual threat manipulation, albeit in different directions.

A second complexity arises from the risk regulation model's assumptions about implicit processing. In contrast to many theories that involve defensive processes, which typically focus on such processes influencing explicit attitudes and outward expressions of behavior, the risk regulation model suggests that concerns about a partner's regard may promote derogation of that partner at the implicit level, parallel to derogation at the explicit level (DeHart, Pelham, & Murray, 2004). Therefore, for individuals with low self-esteem, concerns about a partner's regard may lead to more negative partner evaluations on measures of both implicit and explicit attitudes. If the effects are of comparable magnitude (with implicit and explicit attitudes shifting together in response to threat), then low self-esteem might not increase the discrepancy between implicit and explicit partner evaluations. Consistent with this theorizing, DeHart et al. (2004) found

greater correspondence between explicit ratings of current relationship quality and implicit partner evaluations for individuals with relatively low self-esteem than for those with relatively high self-esteem. In fact, simple slopes tests revealed that the association between implicit and explicit evaluations was nonsignificant for those with relatively high self-esteem.[5]

These different aspects of the literature on self-esteem suggest competing hypotheses regarding the role of self-esteem in implicit-explicit partner evaluation discrepancies. One possibility is that, as with the prediction for attachment security, individuals with relatively high self-esteem may be better able to openly acknowledge their internal experiences, whether positive or negative. If so, implicit and explicit partner evaluations may be more strongly associated for individuals with relatively high self-esteem. Alternatively, if risk regulation processes operate at the implicit level, as DeHart et al. (2004) argue, then the implicit and explicit partner evaluations of low self-esteem individuals may covary in response to real or imagined threats to their self or their relationship. If so, then implicit and explicit partner evaluations should be more strongly associated for those with relatively *low* self-esteem. Both of these competing hypotheses regarding the role of self-esteem in moderating implicit-explicit partner evaluation discrepancies were examined in the current study (*Hypotheses 4a and 4b*).

Consequences of Implicit and Explicit Partner Evaluation Discrepancies

The prior section highlighted several individual difference variables hypothesized to moderate the congruence between implicit partner evaluations and explicit relationship satisfaction via their effects on openness to (as opposed to defensiveness denial of)

potentially threatening information. In addition to serving as an interesting outcome of open rather than defensive information processing, congruence between implicit and explicit evaluations may also have more direct consequences for interpersonal functioning. Thus, a primary focus of the current research was to explore consequences of implicit-explicit discrepancies in the context of newlywed marriage.

Variability or instability in explicit relationship satisfaction. To the extent that discrepant relationship satisfaction (here used to refer to the combination of high explicit satisfaction undermined by negative implicit partner evaluations) represents a form of implicit ambivalence driven by defensive processes, it may undermine the stability of relationship satisfaction over time. This possibility is consistent with the finding that at the explicit level, more ambivalent attitudes are less stable over time and are more pliable in response to persuasion (Armitage & Conner, 2000). As another form of ambivalence, implicit-explicit discrepancies may similarly be relatively unstable. For instance, previous work on discrepancies between implicit and explicit self-esteem has demonstrated that *congruent high self-esteem* (characterized by high explicit and high implicit self-esteem) is more stable over time than *discrepant high self-esteem* (e.g., high explicit combined with low implicit self-esteem; Zeigler-Hill, 2006).

Implicit-explicit discrepancies may be unstable because spontaneous behavioral inclinations conflict with conscious preferences (Thrash, Cassidy, Maruskin, & Elliot, 2010). These discrepancies in behavioral tendencies comprise a form of intrapersonal conflict, and resolving this conflict by suppressing an automatic impulse that is not consciously desired may require self-regulatory resources (Kehr, 2004). This is

particularly likely if the discrepancy is caused by motivated bias (e.g., suppressing or denying implicit negativity in order to bolster one's explicit satisfaction). In such circumstances, higher-order cognitive processes can temporarily override automatic evaluative reactions that are undesired or conflict with one's explicit attitude. However, suppressing automatic implicit reactions or behavioral tendencies that conflict with one's explicit preferences requires cognitive resources and may deplete self-regulatory resources over time (Epstein, 1998; Kehr, 2004).

As noted previously, this idea that suppressing negativity consumes cognitive resources is analogous to the idea of transformation of motivation in interdependence theory, in which cognitive resources enable the transformation of gut-level self-interested preferences in ways that account for interdependence concerns (Rusbult et al., 2001). For instance, situational and dispositional self-regulatory resources predict willingness to respond constructively instead of destructively in response to a partner's bad behavior (Finkel & Campbell, 2001). Similarly, individuals report less constructive responses when completing measures under time pressure, suggesting that they must inhibit their initial impulse (Yovetich & Rusbult, 1994). To the extent that continually suppressing one's negative implicit evaluations consumes self-regulatory resources and promotes a form of intrapersonal conflict, this process may occasionally break down when self-regulatory resources are depleted. Under conditions of depleted self-regulatory resources, internal doubts may not be effectively suppressed, yielding fluctuations in reported explicit satisfaction over time.

For these reasons, large discrepancies between implicit and explicit partner evaluations should yield a more volatile and less stable pattern of attitudes. I therefore hypothesized that discrepant relationship satisfaction would be associated with decreased stability of explicit satisfaction in daily life and over longer stretches of time. More specifically, I hypothesized that implicit and explicit evaluations would interact such that in comparison to *congruent relationship satisfaction* (high implicit and explicit evaluations), *discrepant relationship satisfaction* (e.g., high explicit satisfaction combined with negative implicit partner evaluations) would be associated with greater day-to-day fluctuations in daily relationship satisfaction as well as with greater variability in explicit relationship satisfaction over the first 1.5 years of marriage (*Hypothesis 5*).

Reactivity to daily negative behavior. Establishing that discrepant relationship satisfaction is more variable from day-to-day and less stable over longer periods of time would raise a another question with broader implications: *why* might discrepant relationship satisfaction be less stable over time? One possibility is that congruent evaluations may serve as a protective factor, buffering against reactions to a partner's negative behavior.

Although this hypothesis has not been evaluated in regard to romantic relationships, prior work on self-esteem found that individuals high on both implicit and explicit self-esteem exhibited less reactivity to threatening information than individuals with discrepant high self-esteem (Schmeichel et al., 2009). This implicit ambivalence effect mirrors findings with explicit self-esteem ambivalence, which is associated with greater reactivity to success and failure (Riketta & Ziegler, 2007). Furthermore,

individuals with less stable self-esteem are more reactive to daily events, both positive and negative (Greenier, et al., 1999). Zeigler-Hill (2006) argued that the instability associated with discrepant (relative to congruent) high self-esteem was due to negative self-relevant events activating these individual's discrepant negative self-evaluations.

Analogously, to the extent that an individual's high explicit relationship satisfaction is undermined by strong negative implicit evaluations, then a spouse's negative behavior or conflict might momentarily activate those strong negative evaluations, temporarily decreasing relationship satisfaction. Furthermore, negative behavior and conflict may deplete self-regulatory resources, temporarily reducing the ability or motivation to suppress implicit negativity. As a result, discrepant relationship satisfaction that is undermined by implicit negativity might be more reactive to and contingent on day-to-day experiences of negative partner behavior. In contrast, explicit satisfaction that is bolstered by a stable foundation of implicit positivity may be less reactive to negative behavior. That is, positive implicit evaluations may buffer against the potential threat of day-to-day negative behavior for individuals with high explicit satisfaction. I hypothesized that relative to congruent relationship satisfaction, discrepant relationship satisfaction would be associated with greater reactivity to daily partner negative behavior in the form of stronger associations between daily relationship evaluations and the partner's daily negative behavior (*Hypothesis 6*).

Bias in perceiving a partner's behavior. In addition to promoting instability and reactivity, discrepant relationship satisfaction may also yield biased perceptions of a partner's daily behavior. As discussed previously, discrepant relationship satisfaction

may arise due to motivation to defensively deny internal doubts. The notion that implicit-explicit discrepancies reflect defensiveness is analogous to work on self-esteem. Bosson et al. (2003) argued that congruent (high explicit combined with high implicit) self-esteem represents a stable and secure form of high self-esteem that buffers individuals against feeling threatened by their own failures. In contrast, discrepant (high explicit and low implicit) self-esteem is more unstable and fragile, encouraging greater compensatory self-enhancement to protect the fragile sense of self-worth (e.g., Bosson et al., 2003; Haddock & Gebauer, 2011).

Building on this work, I propose that discrepancies between explicit relationship satisfaction and implicit partner evaluations may analogously promote defensive responses to information that might threaten one's sense of security in a relationship. To the extent that explicit relationship satisfaction undermined by implicit negativity is characterized by instability, increased reactivity to momentary events, and defensiveness, individuals with this form of discrepant relationship satisfaction may respond defensively to potentially threatening information. In order to minimize their own distress and maintain their fragile sense of relationship security, such individuals might exaggerate the positivity of their partner's day-to-day behavior.

For individuals with congruent high relationship satisfaction, the sense of stability provided by their positive implicit partner evaluations might buffer against potentially threatening information, allowing them to acknowledge their partner's negative behavior or other potentially threatening information without denial or distortion. Therefore, relative to congruent high relationship satisfaction, discrepant relationship satisfaction

may be associated with greater idealization of the partner (perceiving the partner as behaving more positively than the partner's self-reports would indicate). Although such illusions may help compensate for implicit doubts and bolster a shaky sense of relationship security, they would also decrease the accuracy with which spouses perceive their partner's behavior. This hypothesis can be contrasted with a potential alternative—if implicit evaluations simply increase awareness of behavior with similar valence, then individuals with discrepant high relationship satisfaction would be *more* rather than less accurate in perceiving their partner's negative behavior. In contrast, I hypothesized that such individuals would be more biased in their perceptions of negative behavior, as acknowledging such behavior would threaten their unstable sense of security in the relationship (*Hypothesis 7*).

Although this hypothesis might seem to contradict research demonstrating the positive effects of idealization (e.g., Murray et al., 1996), these literatures can be reconciled. As argued previously, idealization might be more relevant to individuals with discrepant than with congruent high relationship satisfaction, which would not be apparent in studies that look only at explicit satisfaction. As I have argued, congruent high relationship satisfaction may obviate the need to distort reality (as in the case of idealization), because such individuals have a stable form of satisfaction that would be less threatened by the acknowledgment of a partner's actual negative characteristics. This argument is analogous to that of Mikulincer and Shaver (2005), who argued that attachment security created a primary level of psychological defense that obviated the need for compensatory secondary defenses that distort one's view of reality. Furthermore,

it is important to note that the present hypothesis focuses on specific instances of daily behavior rather than more global evaluations of the partner. Neff and Karney (2002) argued that couples are able to maintain accurate views of their partner while still idealizing them by combining accuracy in specific perceptions with enhancement of the partner in terms of global adoration. In support of this contention, they found that satisfied married partners tended to be more accurate in their perceptions of specific characteristics than global traits. Furthermore, Neff and Karney (2005) found that wives with more accurate perceptions of their husbands' specific characteristics were less likely to divorce than less accurate wives.

Change over time in explicit satisfaction. Although past research has demonstrated that implicit partner evaluations predict unique variance (over explicit evaluations) in relationship outcomes examined longitudinally (e.g., Lee et al., 2010), little is known about the longitudinal effects of *interactions* between implicit and explicit partner evaluations.[6] Various theorists have argued that intrapersonal congruence and integration of coherent attitudes that are consistent with experience are adaptive (e.g. Deci & Ryan, 2000; Epstein, 1998; Rogers, 1961). Carl Rogers (1961) believed that congruence, which he defined as "an accurate matching of experiencing and awareness" (p. 339) was fundamental not only to individual well-being, but also to interpersonal relationships. According to Rogers, incongruence (e.g., unawareness of one's own momentary emotional experience) yields ambiguous communication, characterized by contradictions in verbal and nonverbal behavior. Because such ambiguity prevents the accurate communication of one's internal experience, Rogers believed that incongruence

undermines the clarity of communication and, ultimately, relationship satisfaction. In contrast, Rogers believed that congruence promoted understanding as well as feelings of being understood and positively regarded, ultimately improving mutual relationship satisfaction. Even when one's authentic experience of a relationship is negative and dissatisfying, accurately communicating such experience may facilitate responding to it more adaptively. For instance, married couples who address problems by actively engaging rather than avoiding them tend to find more effective solutions, which in turn predict greater marital satisfaction (Miller, Lefcourt, Holmes, Ware, & Saleh, 1986).

In addition to these potential downsides and as discussed earlier, implicit-explicit discrepancies might reduce stability in explicit satisfaction and promote greater reactivity to daily conflict, both of which could undermine relationship functioning over time. Compared to temporally stable satisfaction, variable satisfaction may undermine perceptions of commitment (Arriaga, 2001), perhaps because instability in satisfaction reflects a form of contingent regard wherein one's evaluation of a partner or relationship depends on the vicissitudes of daily behavior. To the extent that this instability and contingency are visible to the partner, they could result in perceptions of conditional regard, which is associated with decreased marital satisfaction (Kanat-Maymon, Roth, Assor, & Reizer, 2012). Past research has demonstrated that variability in satisfaction over time is associated with a greater risk of breakup among dating couples, even after controlling for mean level of satisfaction (Arriaga, 2001).

Baumann, Kaschel, and Kuhl (2005) argued that implicit-explicit motive incongruence serves as a hidden source of stress. Similarly, Hagemeyer, Neberich,

Asendorpf, and Neyer (2013) argued that implicit-explicit incongruence in motives is an enduring vulnerability (drawing on Karney and Bradbury's, 1995, vulnerability-stress-adaptation model of marriage) that would lead to more stressful events and undermine the couple's capacity to adapt to those events. Consistent with this interpretation, they found that couples who were congruently high on both implicit and explicit measures of communal motives were the most satisfied concurrently and after 1 year. In contrast, individuals with incongruent motives were more likely to break up over the course of 1 year. Implicit-explicit discrepancies in motives are also associated with decreased subjective well-being, regardless of the direction of the discrepancy (e.g., Baumann et al., 2005; Brunstein, Schultheiss, & Grässmann, 1998).

Based on these considerations, I hypothesized that individuals exhibiting a pattern of discrepant relationship satisfaction during their first year of marriage would also experience steeper declines in explicit satisfaction over time (*Hypothesis 8*). In contrast, individuals exhibiting congruent relationship satisfaction would experience the slowest declines in satisfaction over time.

Summary and Hypotheses

In summary, discrepancies between implicit and explicit attitudes have been conceptualized as a form of implicit ambivalence (Petty & Briñol, 2006), which may reflect the functioning of motivated bias in the context of newlywed marriage. Congruence of implicit and explicit attitudes may therefore vary as a function of factors that influence the likelihood of motivated bias. Furthermore, the interactive effects of implicit and explicit attitudes may have implications for perceptions and relationship

functioning beyond their independent main effects. In order to answer the research questions described in the prior sections, the current research employed intensive longitudinal methods and dyadic data analysis with a sample of newlywed couples to address the following hypotheses and research questions.

Conceptual predictors of implicit and explicit partner evaluation congruence. The first set of hypotheses involve individual differences that may contribute to congruence between implicit and explicit partner evaluations. Each of these factors were hypothesized to influence implicit-explicit discrepancies because of their theoretical associations with the motivation or ability to maintain open awareness and acceptance of one's own evaluative reactions as opposed to defensively denying, suppressing, or transforming such reactions.

Hypothesis 1: Moderation by dispositional mindfulness. Individual differences in dispositional mindfulness will moderate the association between implicit and explicit partner evaluations, such that implicit and explicit partner evaluations will be more strongly associated among individuals high in dispositional mindfulness than among individuals low in mindfulness.

Hypothesis 2: Moderation by attachment avoidance. Individual differences in attachment avoidance will moderate the association between implicit and explicit partner evaluations, such that implicit and explicit partner evaluations will be less strongly associated among individuals high rather than low in attachment avoidance (i.e., more securely attached individuals).

Hypotheses 3a and 3b: Moderation by attachment anxiety. Two competing predictions consistent with prior theoretical and conceptual work on adult attachment were examined. The first prediction, based on the work of Mikulincer and Shaver (2007), is that individuals high on attachment anxiety will exhibit a weaker congruence between implicit and explicit partner evaluations than individuals low on attachment anxiety. The second, competing prediction, based on prior empirical work demonstrating that attachment anxiety promotes vigilant attention to and exaggerated expression of one's own distress, is that individuals high rather than low on attachment anxiety will exhibit stronger congruence between implicit and explicit partner evaluations.

Hypotheses 4a and 4b: Moderation by self-esteem. Two competing predictions regarding the potential moderating role of individual differences in self-esteem were evaluated. The first prediction is that high self-esteem will be associated with increased congruence between implicit and explicit partner evaluations, presumably due to high self-esteem individuals' ability to acknowledge potentially self-threatening information. The second prediction, consistent with DeHart et al. (2004), is that *low* rather than high self-esteem will be associated with increased implicit-explicit congruence due to motivational processes related to the risk regulation model affecting evaluations at both implicit and explicit levels.

Proximal and longitudinal consequences of implicit and explicit partner evaluation discrepancies. The second set of hypotheses involve the consequences of discrepancies between implicit and explicit partner evaluations for relationship perceptions and functioning.

Hypothesis 5: Variability in explicit relationship satisfaction. Discrepancies between implicit and explicit partner evaluations will predict greater variability in explicit relationship satisfaction, both at the day-to-day level, and in biannual assessments over the first 1.5 years of marriage.

Hypothesis 6: Reactivity to daily negative behavior. Discrepancies between implicit and explicit partner evaluations will predict greater reactivity to a partner's daily negative behavior. More specifically, for individuals with relatively large implicit-explicit partner evaluation discrepancies, their daily relationship satisfaction will be more contingent upon the partner's negative behavior. In contrast, for individuals with relatively small implicit-explicit partner evaluation discrepancies, their daily satisfaction will be less strongly tied to daily negative behavior.

Hypothesis 7: Bias in perceiving a partner's behavior. Implicit and explicit partner evaluation discrepancies will predict the accuracy with which individuals perceive their spouse's daily behavior. More specifically, congruence between implicit and explicit attitudes will be associated with more less biased perceptions of a partner's daily behavior.

Hypothesis 8: Change over time in explicit satisfaction. Discrepant relationship satisfaction will undermine relationship functioning relative to congruent relationship satisfaction. As a result, discrepant relationship satisfaction will be associated with relatively steeper declines in explicit satisfaction over time.

Chapter 2: Method

Participants

The sample consisted of 175 heterosexual married couples recruited as part of a broader longitudinal study of newlywed marriage. Couples were recruited from bridal show attendee mailing lists (63%), paid advertisements on Facebook (10%), advertisements on Craigslist in cities throughout the United States (9%), and from postings to other online discussion forums (18%). Interested couples completed a screening survey before enrollment into the study to ensure that both partners were between 18 and 50 years old, lived together, were in their first year of marriage, and did not report domestic violence, hospitalization for an emotional disorder, or drug or alcohol abuse. In exchange for completion of all components of the study, each couple was offered a financial incentive of $175, with payments divided across each portion of the study. Couples were also entered into a raffle for a $100 prize for each portion of the study, with a total of 12 of these prizes distributed throughout the study.

At the beginning of the study, participants had been married for an average of 7.2 months (SD = 3.5 months, ranging from 1-16 months) and were an average of 28 years old (SD = 5). A total of 18 couples (10%) were living with a child and another 10 couples (6%) were expecting a child. A majority of participants identified as Caucasian (75%), with another 12% identifying as Asian, 7% as African American, and 6% as multiracial or other. The sample was relatively well-educated, with 31% holding a post-baccalaureate degree, another 49% having graduated from college, 15% having attended some college but not receiving a degree, and another 5% having a high school diploma.

Couples reported a median household annual income in the range between $80,000 and $89,999 and a majority of participants (76%) worked full time.

Procedure

All portions of the study were completed over the Internet, using e-mail invitations and, when necessary, phone call reminders. To ensure that couples did not influence each other's responses, participants were asked to complete each survey separately from their partner, and each member of a couple received a unique link to each survey (sent to their own personal e-mail address). After completing the initial screening survey, participants completed an initial questionnaire measuring demographic information, individual differences, relationship satisfaction, as well as other measures that are not relevant to the current research. Participants completed follow-up questionnaires after approximately 6, 12, and 18 months.

During the daily diary assessment period, participants received survey invitations each night for 14 consecutive nights. These surveys asked about their behavior and evaluations for that day. Each invitation was sent at exactly 7:00 PM (using the participant's local time), with the survey remaining available until 9:00 AM the next morning, after which the survey website became unavailable. This protocol ensured that each daily diary report was provided either the same day or early the next morning in order to minimize retrospective recall bias. To encourage compliance for these daily surveys, participants who missed more than a single survey received reminder e-mails and phone calls. Furthermore, the amount of financial incentive and entry into the raffles was tied to participants' compliance, with couples receiving a larger financial incentive

and more raffle entries for each completed survey. These efforts led to greater than 94% compliance, with participants submitting an average of 13.2 out of 14 daily diary surveys.

Measures

Demographic information and individual differences. During the initial survey, participants reported demographic information (age, race, education, employment, and household income) as well as general background information regarding their marriage (length of marriage, current and expected children). Participants also completed the following individual differences measures during the initial survey.

Mindfulness. Dispositional mindfulness was assessed using items from the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), which was developed by factor analyzing five existing measures of mindfulness. The current study included two of the five facets of mindfulness—"acting with awareness" (which focuses on carefully attending to behavior rather than acting automatically without conscious attention) and "non-judging of experience" (which refers to the tendency to openly acknowledge thoughts and feelings without judgment regarding their appropriateness). Sample items (both reverse scored) for each facet include "I find myself doing things without paying attention" and "I tell myself I shouldn't be feeling the way I'm feeling," respectively. The 7 items with the strongest factor loadings reported by Baer et al. were selected from each of these two facets. All items used a 6-point scale ranging from "almost never" to "almost always" and were scored so that higher scores indicate greater mindfulness.

Although these two facets are empirically distinguishable, they also both represent the broader construct of mindfulness. Since differences across these two facets

of mindfulness were not hypothesized in the current study, analyses focused on a mindfulness composite calculated as the average of all 14 items, which yielded adequate internal consistency ($\alpha_{husbands} = .92$, $\alpha_{wives} = .91$). In addition to the total mindfulness composite, items were also averaged within each facet to create individual facet scores. Both facet scores yielded adequate internal consistency (acting with awareness: $\alpha_{husbands} = .90$, $\alpha_{wives} = .89$; non-judging of experience: $\alpha_{husbands} = .93$, $\alpha_{wives} = .92$).

Attachment anxiety and avoidance. Attachment anxiety and avoidance were assessed using an 18-item adaptation of the Experiences in Close Relationships - Revised Scale (ECR-R; Fraley, Waller, & Brennan, 2000). The measure assessed both attachment anxiety (9 items, such as "I often worried that my partner didn't really love me") and attachment avoidance (9 items, such as "I found it relatively easy to get close to my partner,", reverse-scored). Items used a 6-point scale ranging from "strongly disagree" to "strongly agree." Both subscales yielded adequate internal consistency (attachment anxiety: $\alpha_{husbands} = .91$, $\alpha_{wives} = .92$; attachment avoidance: $\alpha_{husbands} = .81$, $\alpha_{wives} = .92$).

Self-esteem. Self-esteem was assessed using the 10-item Rosenberg Self-Esteem (RSE) Scale (Rosenberg, 1965). A sample item is, "On the whole, I am satisfied with myself." All items used a 4-point scale ranging from "strongly disagree" to "strongly agree." The scale yielded adequate internal consistency ($\alpha_{husbands} = .91$, $\alpha_{wives} = .89$).

Explicit relationship satisfaction: Couples Satisfaction Index. For the measure of explicit relationship satisfaction, participants completed the 16-item version of the Couples Satisfaction Index (CSI; Funk & Rogge, 2007). This measure was included in the initial assessment and in each follow-up assessment throughout the 1.5-year follow-

up period of study. A sample item includes, "Our relationship is strong." Items use a combination of 6-point and 7-point scales and were summed to create an index of relationship satisfaction. The scale yielded adequate internal consistency at the initial assessment ($\alpha_{husbands} = .95$, $\alpha_{wives} = .95$).

Implicit partner evaluations: The Partner-GNAT. Implicit partner evaluations were assessed at the initial survey using a Go/No-Go Association Task (Nosek & Banaji, 2001) developed by Lee et al. (2010) to assess implicit partner evaluations (the Partner-GNAT). In contrast to alternative implicit measures (such as the IAT, which measures evaluations of one category relative to another category; e.g., *old* vs. *young*), the GNAT can assess associations for a single attitude object without reference to other objects.

Before completing the GNAT, participants provided three distinct stimuli representing their romantic partner (i.e., the partner's first name, a nickname, and another distinguishing characteristic). The GNAT used the same comparison stimuli as Lee et al. (2010, Study 1): 3 positive words (*peace, vacation, gift*) and 3 negative words (*death, accident, tragedy*), along with an additional 8 positive and 8 negative words used in practice trials.

Structure of the GNAT. In each of several blocks, the GNAT asked participants to quickly sort stimuli words into categories. Target stimuli words appeared individually on the screen for 600 ms each, during which time participants either pressed the space bar (if the target word matched a category appearing on the top of the screen) or refrained from pressing the space bar (if the target word did not match the category). Following each trial, participants received feedback by seeing a green "O" following a correct

response or a red "X" following an incorrect response. This feedback was flashed for 100 ms, followed by a 400 ms interval before the next trial.

These trials were arranged into 4 blocks—2 practice blocks (with 16 trials each) and 2 critical blocks (with 70 trials each). The practice blocks came first and asked participants to categorize the practice stimuli words as *good* or *bad* (one block for each in random order). Following these practice blocks, participants completed the 2 critical trial blocks. In the *partner-good* critical block, participants hit the space bar when they saw a partner word (20 trials) or a good word (20 trials), but not when they saw a bad word (30 trials). During the *partner-bad* critical block, participants hit the space bar when they saw a partner word (20 trials) or a bad word (20 trials), but not when they saw a good word (30 trials). The order of these blocks and the order of the words within each block was randomized. Within each critical block, the GNAT program recorded both correct and incorrect key presses, which were used to assess performance on the task.

GNAT scoring and data reduction. Following Lee et al. (2010), the GNAT was scored by calculating *d'* as a measure of performance. This index was calculated using hit rates (the proportion of correct space bar presses when the target word matched the category) and false alarms (the proportion of incorrect space bar presses when the target word did not match the category). Extreme values (i.e., correctly classifying 0% or 100% of words) were corrected as recommended in past work (Banaji & Greenwald, 1995). Hit rates and false alarm rates were standardized using a probit function, then the false alarm rate was subtracted from the hit rate (yielding *d'*, a measure of overall performance).

In order to examine the reliability of these GNAT subscores, split-half reliability coefficients were computed using d' scores calculated for even and odd rows of participants' responses. These split-half reliability coefficients were adequate for the d' calculated for the partner-good blocks ($r_{husbands} = .76$, $r_{wives} = .76$) and for the partner-bad blocks ($r_{husbands} = .83$, $r_{wives} = .82$).

Following the scoring approach used by Nosek and Banaji (2001), d' for the partner-bad block was subtracted from d' for the partner-good block, yielding a single measure of implicit partner evaluation, with higher scores representing a more positive (and less negative) evaluation.[7]

Daily diary measures. As described previously, daily diary measures were collected each night during the 14-day daily diary assessment period. In addition to other measures that are not relevant to the current research, participants completed the following two assessments of daily relationship satisfaction and daily negative behavior.

Daily relationship evaluations. Daily relationship evaluations were measured using three questions assessed daily. The first question was, "Today our relationship was... terrible/terrific," with a 7-point scale anchored by *terrible* and *terrific*. The second item was, "Today, I felt close and connected to my partner," and the third item was, "Today, I enjoyed our time together," each rated on a 7-point scale anchored by *not at all* and *a great deal*. These items were summed within each day to form a composite measure of daily relationship evaluation. Internal consistency for this composite (calculated for each day) was adequate, with Cronbach's αs ranging from .86 to .92 for husbands ($M = .88$) and from .83 to .92 for wives ($M = .88$).

Daily negative behavior. Participants completed a set of items each day during the daily diary period inquiring about both their behavior and their partner's behavior during the day. These items used a dichotomous scale, with instructions asking participants to select "yes" rather than "no" to a behavior "only if you can recall a specific instance that occurred today that matches the description." Participants responded to the set of behaviors twice—once for their own behavior and once for their partner's behavior, with the two sets of items separated in the survey to minimize response bias. Four items assessed participants' own daily negative behavior: *Today, I was mean to my partner*; *Today, I was inattentive or insensitive to my partner*; *Today, I did something that made (or might make) my partner worry about our relationship*; and *Today, I was moody or critical with my partner*. In addition to these self-reported behaviors, participants completed similar items assessing their perceptions of their partner's daily behavior (e.g., *Today, my partner was mean to me*). Finally, a single item asked about conflict: *Did you and your partner have an argument or fight today?*. These items were summed within each day (separately for self-reported and perceived partner behavior) to form a composite measure of daily negative behavior. Participants also reported how much time (in hours) they had spent with their partner since waking up that morning, excluding time spent sleeping.

Chapter 3: Results

General Data Analytic Strategy

Multilevel modeling. Because the data included multiple forms of nonindependence (i.e., across longitudinal and diary assessments within each participant as well as between spouses within each dyad), the analyses required a multilevel modeling approach to account for this nonindependence. The general analytic strategy involved a two-level multilevel model in which effects for both husbands and wives were modeled separately at level 1, and variation across couples was modeled at level 2 (Bolger & Laurenceau, 2013; Kenny, Kashy, & Cook, 2006). All models allowed error variances to differ across husbands and wives and also allowed residual variance to correlate between husbands and wives within each couple. Initial analyses used a two-intercept model to estimate separate regression equations for husbands and wives while controlling for nonindependence (Raudenbush, Brennan, & Barnett, 1995). However, as noted below, coefficients that did not differ significantly across spouses were pooled across husbands and wives. More specific descriptions of each model are included below.

Gender differences. Because heterosexual married couples are distinguishable by gender, researchers examining such couples have often reported results separately for husbands and wives and interpreted any observed differences in the pattern or significance of results. However, observing different patterns across spouses (e.g., a result that is significant for husbands but not for wives) does not mean that the gender difference itself is significant (Kenny et al., 2006). Because gender differences were not

hypothesized in the current study, a conservative approach was adopted for identifying and interpreting potential differences.

Following the suggestions of Ackerman, Donnellan, and Kashy (2011), model fit tests were used to examine the degree to which partners are distinguishable by adding model constraints (e.g., constraining an effect to be equal across husbands and wives) and examining change in model fit. If constraining a coefficient to be equal across husbands and wives did not significantly reduce model fit, the constraint was retained and the coefficient was pooled across husbands and wives. Only significant gender differences (at $p < .05$) are included in the final models.

Data Cleaning

Four participants were excluded from analyses for failing to complete the GNAT or for providing multiple invalid partner words for the GNAT (e.g., writing "none" or "n/a"). Another two participants were excluded for having higher false alarm rates than hit rates across GNAT trials, indicating that they were not following instructions and performed below chance levels. These exclusions led to a final sample of 172 husbands and 172 wives, with complete data from both members of 169 couples. Participants completed 94% of the daily diary surveys on time for a total of 4,539 daily assessments.

Evaluating the primary variables for normality revealed significant negative skew (at $p < .001$) for explicit relationship satisfaction, self-esteem, and mindfulness, along with significant positive skew for attachment avoidance. For all of these variables, a square root transformation reduced the skew to nonsignificance for both husbands and wives. However, running analyses with these transformed variables did not alter the

pattern of results for any of the primary hypothesis tests. To aid interpretation, results are reported here using the original, untransformed variables.

Data were also screened for univariate and multivariate outliers following the suggestions of Tabachnick and Fidell (2013). After transforming data to minimize skew, there were no significant univariate outliers (using a threshold of $z > 3.29$, $p < .001$) on any of the primary variables. Multivariate outliers were identified by calculating Mahalanobis distances for the following set of 6 variables: explicit relationship satisfaction, implicit partner evaluations, attachment anxiety, attachment avoidance, self-esteem, and mindfulness. Only one participant was identified as a multivariate outlier (using a threshold of $p < .001$)—a wife with relatively low explicit satisfaction, high implicit partner evaluations, and high attachment avoidance. Excluding this participant from analyses did not change the general pattern of results for any of the primary hypotheses, so the participant was retained in all analyses.

Preliminary Analyses

Table 1 presents descriptive information for the primary measures, along with tests of gender differences. Both husbands and wives were moderately satisfied with their marriages on average, with mean CSI scores of 69.26 and 69.93, respectively. Using the CSI cut score for significant distress of 51.5 identified by Funk and Rogge (2007), 9 husbands and 9 wives (5% of each group) reported levels of relationship satisfaction low enough to be considered distressed. Overall, 15 couples (9%) included at least one spouse below this cut score for distress at the initial assessment.

Table 1

Descriptive Statistics for Primary Measures

Variable	Observed Range	Husbands		Wives		Difference
		M	*SD*	*M*	*SD*	*t*(168)
1. Explicit Satisfaction	26.00 – 81.00	69.26	9.81	69.93	9.26	0.90
2. Implicit Evaluations	-1.57 – 3.62	0.81	0.94	0.75	0.98	-0.63
3. Mindfulness	1.00 – 6.00	4.46	0.94	4.51	0.84	0.56
4. Attachment Anxiety	1.00 – 7.00	3.22	1.39	3.57	1.47	2.55[*]
5. Attachment Avoidance	1.00 – 6.78	2.80	1.00	2.99	1.34	1.87[†]
6. Self-Esteem	1.10 – 4.00	3.30	0.58	3.35	0.47	0.97

Note. [†] *p* < .10. [*] *p* < .05.

Table 2 presents correlations among the primary measures (shown separately for husbands and wives), along with cross-partner correlations. Although the correlation between explicit relationship satisfaction (measured with the CSI) and implicit partner evaluations (measured with the GNAT) was not significant for wives, $r(170) = .003$, $p = .97$, the association was marginally significant for husbands, $r(170) = .14$, $p = .07$, suggesting that husbands (but not wives) had marginally significant congruence between their implicit and explicit evaluations at the initial assessment. The measure of implicit partner evaluations was not significantly correlated with any other variables for either husbands or wives (all $|r|$s < .12, ps > .13).

Table 2

Correlations among Primary Measures

Variable	1	2	3	4	5	6
1. Explicit Satisfaction	**.42*****	.00	.16*	-.06	-.12	.28***
2. Implicit Evaluations	.14†	**-.05**	.00	.03	.09	-.02
3. Mindfulness	.16*	.10	**.17***	-.30***	-.10	.42***
4. Attachment Anxiety	-.15†	.12	-.32***	**.19***	.54***	-.31***
5. Attachment Avoidance	-.29***	-.02	-.24**	.58***	**.22****	-.19*
6. Self-Esteem	.22**	.02	.54***	-.31***	-.29***	**.28*****

Note. Correlations for wives are presented above the diagonal. Correlations for husbands are presented below the diagonal. Cross-partner correlations are listed on the diagonal and bolded.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Conceptual Predictors of Implicit and Explicit Partner Evaluation Congruence

Most existing research on implicit-explicit congruence has modeled congruence using one of two approaches: difference scores and interactions. The difference score approach typically involves standardizing explicit and implicit measures and subtracting one from the other, then squaring or calculating the absolute value of that difference. The second approach involves modeling statistical interactions, which is less restrictive in that it allows comparison of directional effects and examination of the pattern of interactions using simple slope tests. In the current study, analyses examining moderators of implicit-explicit congruence employed the second approach by examining the interaction between a moderator and implicit partner evaluations in predicting explicit evaluations. Specifying explicit attitudes as the outcome in these analyses is consistent with theoretical perspectives (i.e., the MCM or APE model) that assume that explicit attitudes are often based on deliberative or propositional processing of one's automatically activated

affective or evaluative reactions. This approach also maps onto the perspective that moderators of implicit-explicit congruence should influence awareness and open acceptance of (rather than denial or suppression of) one's automatic evaluative reactions.

The following equations represent a simplified version of the multilevel model that was used to test hypotheses involving the moderation of implicit-explicit congruence:

Level 1 (within-couple) model:

Explicit satisfaction = b_{0j} + b_{1j}(implicit evaluation) + b_{2j}(moderator) + b_{3j}(implicit evaluation × moderator)+ e_{ij}

Level 2 (between-couple) model:

$b_{0j} = \gamma_{00}$

$b_{1j} = \gamma_{10}$

$b_{2j} = \gamma_{20}$

$b_{3j} = \gamma_{30}$

Predictor variables were centered using the grand mean across husbands and wives. All coefficients were modeled as fixed effects. In this case, the key coefficient is γ_{30}, which represents the interaction between the moderator and implicit partner evaluation predicting explicit relationship satisfaction (γ_{10} and γ_{20} represent the main effects of implicit evaluations and the moderator variable, respectively).

Hypothesis 1: Moderation by mindfulness. As described previously, the association between implicit and explicit partner evaluations was hypothesized to be stronger among individuals high rather than low in dispositional mindfulness. In order to

test this hypothesis, explicit relationship satisfaction was regressed onto implicit partner evaluations, dispositional mindfulness, and the interaction between those two predictors. Because there were no hypotheses regarding differences across facets of mindfulness, analyses were first conducted using a total mindfulness score calculated from both facets (acting with awareness and non-judging of experience) before examining unique effects for the individual facets.

Total mindfulness. Results for the model examining moderation by total mindfulness (including both facets) are summarized in Table 3. Gender differences in this model (and all subsequent models) were examined for each coefficient by allowing scores to vary across husbands and wives and seeing if this significantly improved model fit using a likelihood ratio test. Model tests revealed no significant gender differences in any of the coefficients (e.g., constraining paths to be equal across husbands and wives did not significantly reduce model fit), χ^2s(1)s < 2.58, ps > .108, so all coefficients were pooled across husbands and wives. As shown in Table 3, mindfulness was significantly positively associated with explicit relationships satisfaction, $b = 1.35$, $p = .013$. Consistent with Hypothesis 1, this main effect was qualified by a significant interaction between mindfulness and implicit partner evaluations, $b = -1.41$, $p = .010$.

Table 3

Moderation of Implicit-Explicit Congruence by Mindfulness

Fixed Effects	*b*	(*SE*)	*t*	*p*	95% CI Lower	Upper
					Lower	Upper
Intercept	69.666	(.596)	116.90***	<.001	68.490	70.843
Mindfulness	1.348	(.477)	2.51*	.013	0.289	2.407
Implicit (GNAT)	0.364	(.477)	0.76	.445	-0.574	1.303
Mindfulness × Implicit (GNAT)	-1.410	(.546)	-2.59*	.010	-2.484	-0.337

The table header "Explicit Relationship Satisfaction" spans the value columns.

Note: CI = confidence interval.
* $p < .05$. ** $p < .01$. *** $p < .001$.

The interaction was decomposed using the methods described by Bauer and

Curran (2005) and Preacher, Curran, and Bauer (2006) to estimate simple slopes and

regions of significance. For participants 1 *SD* above the mean on dispositional

mindfulness, implicit and explicit evaluations were not significantly associated, $b = -0.90$,

$t(339) = -1.33$, $p = .19$. However, for participants 1 *SD* below the mean on dispositional

mindfulness, implicit and explicit evaluations were significantly positively associated, *b*

$= 1.61$, $t(339) = 2.35$, $p = .019$. The interaction is depicted in Figure 2.
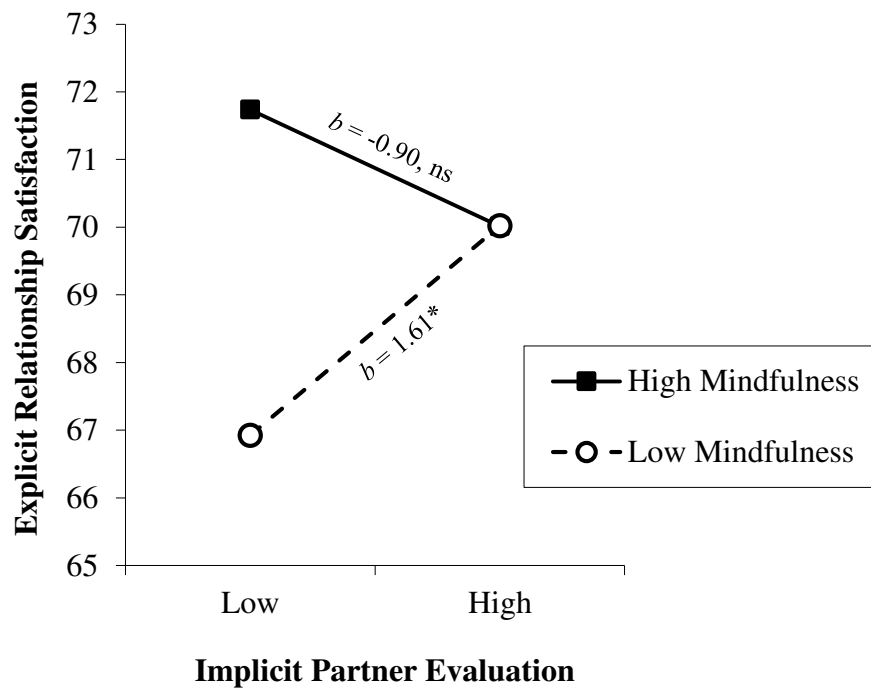
Figure 2. Mindfulness moderating the association between implicit and explicit evaluations. Simple slopes are displayed along each line, calculated at low (-1 *SD*) and high (+1 *SD*) levels of implicit partner evaluations and mindfulness.
$^*p < .05$.

Although these simple slopes enable interpretation of the interaction, they are limited to evaluating the conditional effects at only two values (+/- 1 *SD*) rather than examining the entire observed range of values. To provide a clearer perspective on the pattern of interaction, the interaction was also decomposed using the Johnson-Neyman technique to compute regions of significance (Bauer & Curran, 2005; Preacher et al., 2006). This technique identifies the entire range of values on the moderator (e.g., dispositional mindfulness) for which the conditional effect (the association between implicit and explicit evaluations) is statistically significant.

This region of significance is depicted as the shaded region in Figure 3, which displays the entire range of dispositional mindfulness observed in the current sample on the *X*-axis. The *Y*-axis of Figure 3 represents slopes for the association between implicit and explicit attitudes (i.e., the slopes of the lines depicted in Figure 2 for all observed values of mindfulness rather than just +/- 1 *SD*). As shown in in Figure 3, the slope representing the association between implicit and explicit evaluations was significantly positive for individuals with dispositional mindfulness scores lower than 3.96 (further than 0.59 *SD*s below the mean), but was not significant at any observed levels of mindfulness above 3.96.
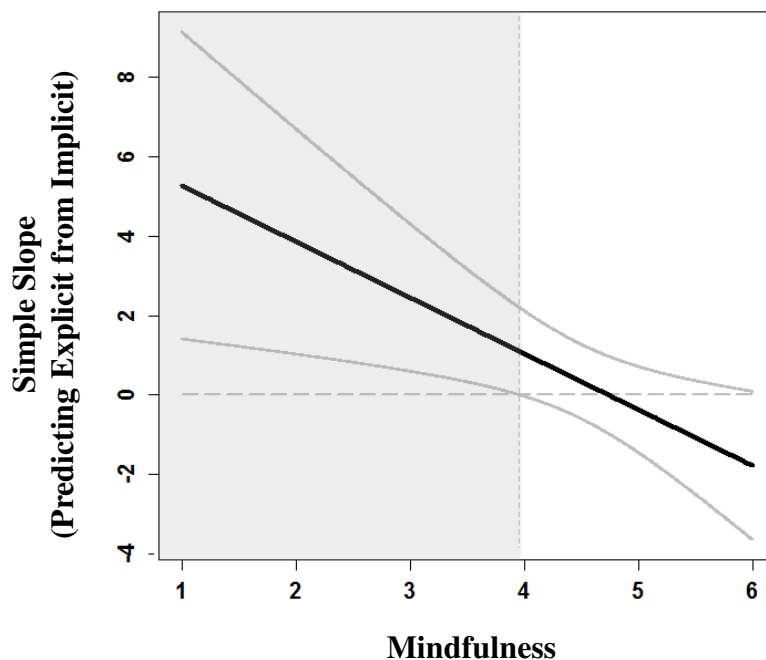
Figure 3. Regions of significance for the association between implicit and explicit evaluations across all observed levels of mindfulness. The shaded area shows the region of significance for which the association between implicit and explicit attitudes is significant. The curved gray lines represent 95% confidence bands.

Although the predicted interaction term was significant, the pattern of this interaction runs counter to Hypothesis 1. This result suggests that implicit partner evaluations and explicit relationship satisfaction were only significantly positively associated for individuals *low* rather than high in dispositional mindfulness.

Individual facets of mindfulness. Although differences between the two facets of mindfulness were not hypothesized, the two facets were examined independently and in combination to explore whether or not the results varied across different types of mindfulness. When the "acting with awareness" facet was examined as a moderator on its own, the interaction between this facet of mindfulness and implicit partner evaluations was significant, $b = -1.25$, $t = -2.50$, $p = .013$. Plotting the interaction and evaluating simple slopes yielded the same pattern of results obtained using the total mindfulness scale. When the "non-judging of experience" facet was examined independently as a moderator, the equivalent interaction between non-judging of experience and implicit partner evaluations was marginally significant, $b = -0.82$, $t = -1.92$, $p = .055$, and also yielded the same pattern of results in simple slope tests.

In another model, the two facets of mindfulness (along with their respective interactions with implicit partner evaluations) were entered simultaneously to examine their unique moderating effects (controlling for one another) on the association between explicit and implicit partner evaluations. In this combined analysis, the interaction was not significant for non-judging of experience, $b = -0.47$, $t = -1.01$, $p = .31$, but was marginally significant for acting with awareness, $b = -1.01$, $t = -1.86$, $p = .064$. Moreover, this model provided marginally better fit to the data than the prior model that included

only the non-judging of experience facet (without the acting with awareness facet), $\chi^2(2)$ = 5.37, p = .068, but did not provide significantly better fit than the prior model that included only acting with awareness, $\chi^2(2)$ = 2.44, p = .30. This pattern of results suggests that the observed mindfulness moderation effect may be driven largely by the acting with awareness facet of mindfulness.

Hypotheses 2, 3a, and 3b: Moderation by attachment avoidance and anxiety. As explained previously, the hypotheses regarding moderation by attachment style differed for attachment avoidance and anxiety. Hypothesis 2 stated that implicit and explicit evaluations would be more strongly associated among individuals low rather than high in attachment avoidance. In contrast, competing hypotheses (3a and 3b) were evaluated in regard to moderation by attachment anxiety. Individual differences in attachment anxiety and avoidance were included in the same multilevel model, in which explicit relationship satisfaction was regressed onto implicit partner evaluations, attachment anxiety, attachment avoidance, and the two interactions between each attachment dimension and implicit partner evaluations.

Model tests revealed a significant difference between husbands and wives in attachment avoidance, $\chi^2(1)$ = 4.35, p = .037, so attachment avoidance was allowed to vary across husbands and wives. There were no significant gender differences for any other coefficients, χ^2s(1)s < 2.19, ps > .13, so other coefficients were pooled across husbands and wives. The results of this analysis are presented in Table 4.

Table 4

Moderation of Implicit-Explicit Congruence by Attachment Anxiety and Avoidance

	b	(SE)	t	p	95% CI Lower	95% CI Upper
					Lower	Upper
Intercept	69.522	(.583)	119.28***	<.001	69.371	70.673
Anxiety	0.257	(.394)	0.65	.515	-3.882	-0.977
Avoidance (wives)	-0.758	(.533)	-1.42	.156	-1.808	0.293
Avoidance (husbands)	-2.430	(.736)	-3.30**	.001	-0.662	1.247
Implicit (GNAT)	0.293	(.485)	0.60	.547	-0.518	1.032
Anxiety × Implicit (GNAT)	0.760	(.378)	2.01*	.045	0.016	1.505
Avoidance × Implicit (GNAT)	-1.010	(.433)	-2.33*	.020	-1.862	-0.157

Note: CI = confidence interval.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Attachment avoidance. Results indicate that attachment avoidance was associated with lower satisfaction for husbands (but not for wives), $b = -2.43$, $p = .001$. Consistent with Hypothesis 2, this main effect was qualified by a significant interaction between attachment avoidance and implicit partner evaluations, $b = -1.01$, $p = .020$. Simple slopes were examined as before in order to decompose the interaction. For participants 1 *SD* above the mean on attachment avoidance, implicit and explicit evaluations were not significantly associated, $b = -0.91$, $t(337) = -1.28$, $p = 0.20$. In contrast, for individuals 1 *SD* below the mean on attachment avoidance, implicit and explicit evaluations were significantly positively associated, $b = 1.49$, $t(337) = 2.11$, $p = .035$. The interaction is depicted in Figure 4. The pattern of this interaction is consistent with Hypothesis 2, suggesting that higher attachment avoidance was associated with lesser congruence between implicit and explicit partner evaluations.

Figure 4. Attachment avoidance moderating the association between implicit and explicit evaluations. Simple slopes are displayed along each line, calculated at low (-1 *SD*) and high (+1 *SD*) levels of implicit partner evaluations and attachment avoidance.
*$p < .05$.

As before, the interaction was also examined by calculating regions of significance (the range of values on attachment avoidance for which the association between implicit and explicit evaluations becomes significant; Preacher et al., 2006). The regions of significance for this interaction are depicted as the two shaded regions in Figure 5, which displays the entire range of attachment avoidance observed in the current sample on the *X*-axis. As shown in in Figure 5, the slope representing the association between implicit and explicit evaluations was significantly positive for individuals with scores lower than 1.95 (further than 0.80 *SD*s below the mean) on attachment avoidance.

At high levels of attachment avoidance (above 5.85, or further than 2.49 *SD*s above the

mean), the slope was significantly *negative*.
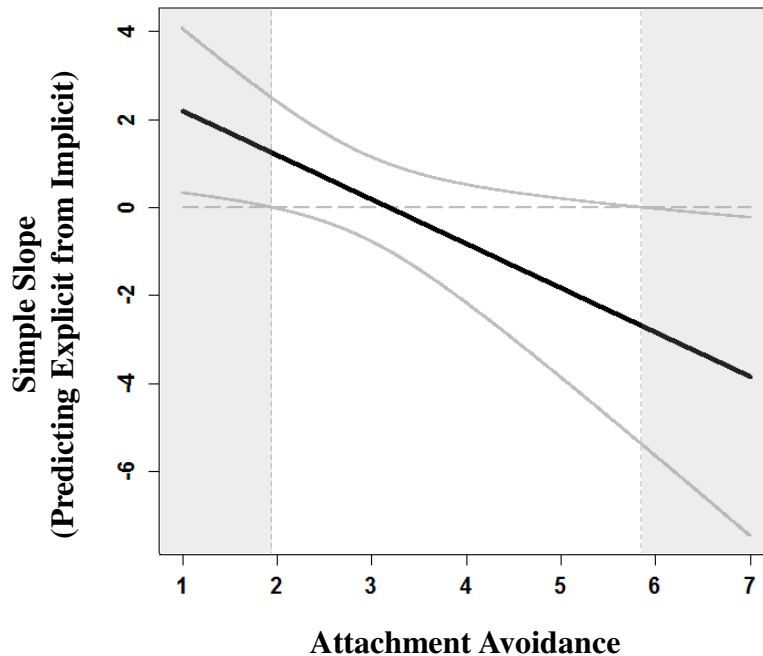
Figure 5. Regions of significance for the association between implicit and explicit evaluations across all observed levels of attachment avoidance. The two shaded areas show the regions of significance for which the association between implicit and explicit attitudes is significant. The curved gray lines represent 95% confidence bands.

Attachment anxiety. The same multilevel model revealed a significant interaction

between attachment anxiety and implicit partner evaluations, $b = -0.76$, $p = .045$. The

interaction was decomposed as before by evaluating simple slopes and regions of

significance. For individuals 1 *SD* below the mean on attachment anxiety, implicit and

explicit evaluations were not significantly associated, $b = -0.80$, $t(337) = -1.05$, $p = .30$.

However, for individuals 1 *SD* above the mean on attachment anxiety, implicit and

explicit evaluations were significantly positively associated, $b = 1.39$, $t(337) = 2.00$, $p = .046$. The interaction is depicted in Figure 6.

Figure 6. Attachment anxiety moderating the association between implicit and explicit evaluations. Simple slopes are displayed along each line, calculated at low (-1 *SD*) and high (+1 *SD*) levels of implicit partner evaluations and attachment anxiety.
*$p < .05$.

The region of significance for this interaction is depicted as the shaded region in Figure 7, which displays the entire observed range of attachment anxiety on the *X*-axis. As shown in in Figure 7, the slope representing the association between implicit and explicit evaluations was significantly positive for individuals with scores above 4.72 (further than 0.93 *SD*s above the mean) on attachment anxiety, but was not significant at any observed levels of attachment anxiety below 4.72.

Figure 7. Regions of significance for the association between implicit and explicit evaluations across all observed levels of attachment anxiety. The shaded area shows the region of significance for which the association between implicit and explicit attitudes is significant. The curved gray lines represent 95% confidence bands.

The pattern of this interaction is consistent with Hypothesis 3b (and inconsistent with competing Hypothesis 3a), suggesting that higher attachment anxiety was associated with stronger c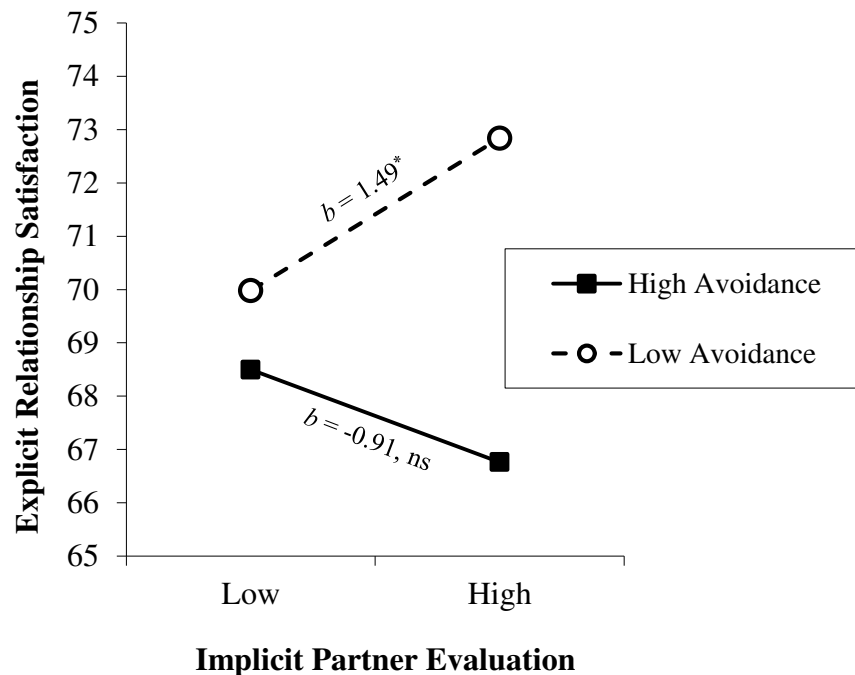ongruence between implicit and explicit partner evaluations. It is worth noting that the patterns of the interactions with attachment anxiety and with attachment avoidance are in opposite directions, with these two forms of attachment insecurity affecting implicit-explicit congruence in different directions.[8]

Hypotheses 4a and 4b: Moderation by self-esteem. The final moderator of implicit-explicit congruence examined in the current study was self-esteem, for which competing hypotheses were evaluated. In this multilevel model, explicit relationship

satisfaction was regressed onto implicit partner evaluations, self-esteem, and the interaction between those two predictors.

Results of this analysis are summarized in Table 5. Model tests revealed no significant gender differences in any of the coefficients, χ^2s(1)s < 1.22, ps > .26, so coefficients were pooled across husbands and wives. Self-esteem was positively associated with explicit relationship satisfaction, $b = 3.90$, $p < .001$. As hypothesized, this main effect was qualified by a marginally significant interaction between self-esteem and implicit evaluations, $b = -1.59$, $p = .062$.

Table 5

Moderation of Implicit-Explicit Congruence by Self-Esteem

	Explicit Relationship Satisfaction				95% CI	
Fixed Effects	b	(*SE*)	t	p	Lower	Upper
Intercept	69.637	(.592)	117.71***	<.001	68.469	70.804
Self-Esteem	3.901	(.928)	4.20	<.001	2.075	5.727
Implicit (GNAT)	0.343	(.468)	0.73	.464	-0.579	1.265
Self-Esteem × Implicit (GNAT)	-1.594	(.852)	-1.87†	.062	-3.271	0.083

Note: CI = confidence interval.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

This marginally significant interaction was decomposed by calculating simple slopes and regions of significance. For participants one *SD* above the mean on self-esteem, implicit and explicit evaluations were not significantly associated, $b = -0.50$, $t(339) = -0.74$, $p = .46$. However, for participants 1 *SD* below the mean on self-esteem,

implicit and explicit evaluations were marginally positively associated, $b = 1.19$, $t(339) = 1.92$, $p = .056$. This interaction is depicted in Figure 8.
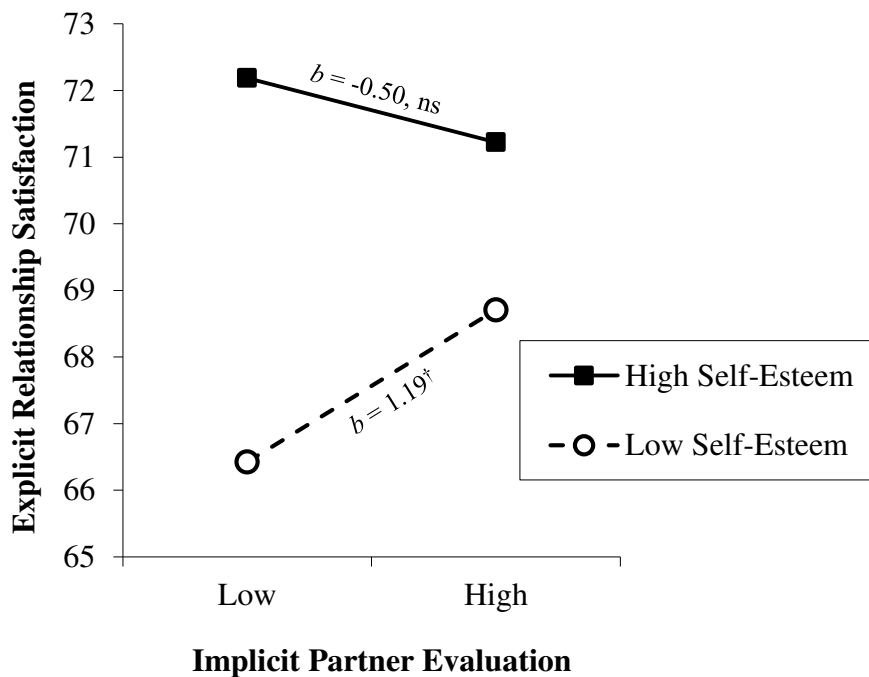
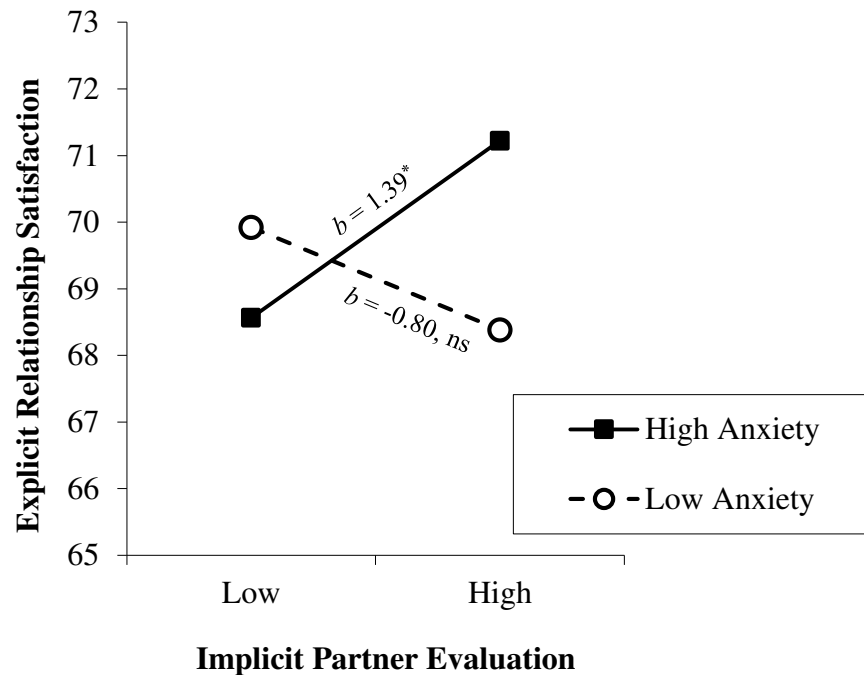*Figure 8*. Self-esteem moderating the association between implicit and explicit evaluations. Simple slopes are displayed along each line, calculated at low (-1 *SD*) and high (+1 *SD*) levels of implicit partner evaluations and self-esteem.
$^\dagger p < .10$.

The regions of significance for this interaction are depicted as the shaded region in Figure 9, which displays the entire range of self-esteem observed in the current sample on the *X*-axis. As shown in Figure 9, the slope representing the association between implicit and explicit evaluations was significantly positive for individuals with scores lower than 2.74 (further than 1.12 *SD*s below the mean) on self-esteem, but was not significant at any observed levels of self-esteem above 2.74.

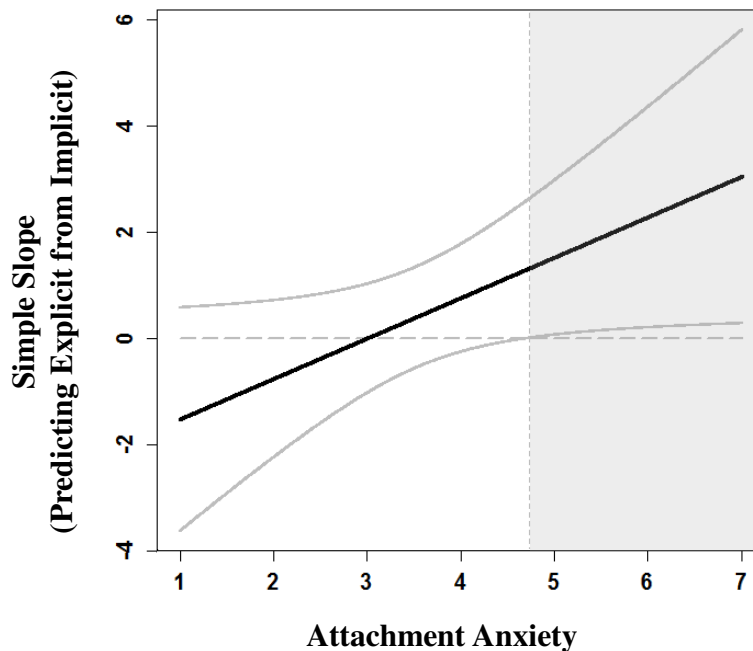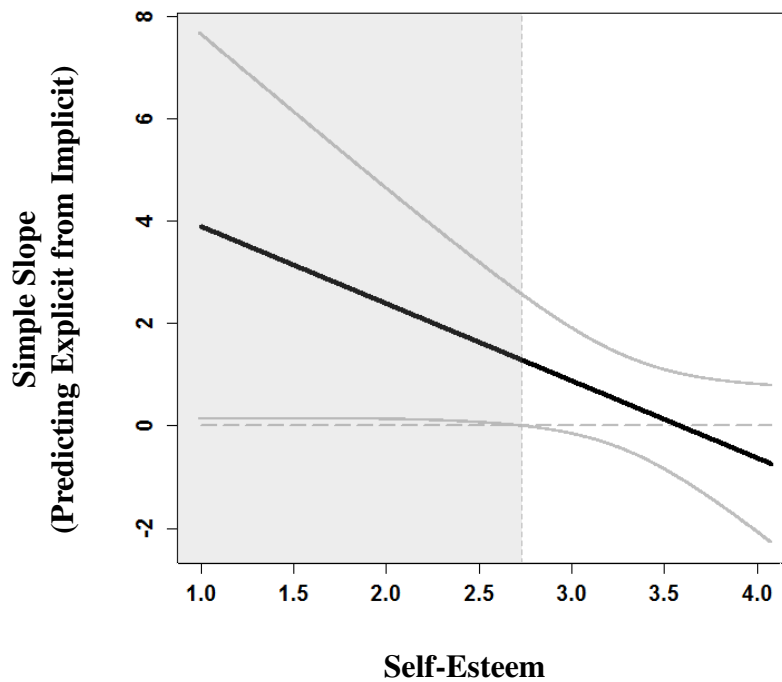*Figure 9.* Regions of significance for the association between implicit and explicit evaluations across all observed levels of self-esteem. The shaded area shows the region of significance for which the association between implicit and explicit attitudes is significant. The curved gray lines represent 95% confidence bands.

These results are consistent with Hypothesis 4b (and inconsistent with the competing Hypothesis 4a), showing that congruence between implicit and explicit evaluations were relatively stronger for individuals with low rather than high self-esteem.

Proximal and Longitudinal Consequences of Implicit and Explicit Partner Evaluation Discrepancies

The remaining hypotheses evaluated the consequences of discrepancies between implicit and explicit evaluations. As in the prior analyses, congruence between implicit partner evaluations and explicit relationship satisfaction was modeled as an interaction

between these two variables (controlling for main effects). If an outcome varies by implicit-explicit congruence or discrepancy, then there should be a significant interaction between implicit and explicit evaluations predicting that outcome.

Hypothesis 5: Variability in explicit relationship satisfaction. Hypothesis 5 predicted that discrepancies between implicit and explicit partner evaluations would predict greater variability in relationship satisfaction both across days in the daily diary assessment and across biannual assessments collected over the first 1.5 years of marriage. In order to measure variability in relationship satisfaction, I adapted a procedure used by Kernis, Cornell, Sun, Berry, and Harlow (1993) to assess self-esteem instability. Following Kernis et al., instability was calculated by computing the within-person standard deviation across assessments within each participant, such that a high score indicates greater variability over the assessment period. Separate indices were calculated to represent variability in relationship evaluations across diary days (using the 3-item composite measure of daily relationship evaluations) and variability across biannual assessments over the entire 18 months of the study (using the CSI measured at the initial assessment, then 6, 12, and 18 months later). These two forms of variability were examined in separate multilevel models. The following simplified multilevel model (excluding gender differences) was used to test the hypothesis that implicit-explicit discrepancies predict variability in satisfaction.

Level 1 (within-couple) model:

Variability in satisfaction = $b_{0j} + b_{1j}(\text{implicit}) + b_{2j}(\text{explicit})$

$+ b_{3j}(\text{implicit} \times \text{explicit}) + e_{ij}$

Level 2 (between-couple) model:

$b_{0j} = \gamma_{00}$

$b_{1j} = \gamma_{10}$

$b_{2j} = \gamma_{20}$

$b_{3j} = \gamma_{30}$

Because variability in satisfaction could be correlated with average levels of satisfaction across assessments (e.g., variability would likely be lower for individuals with very high or very low satisfaction), explicit relationship satisfaction was assessed by aggregating across satisfaction at different time points rather than using the CSI reported at the initial time point (as in prior analyses). For instance, in the model predicting variability in daily relationship satisfaction over the daily diary period, explicit relationship satisfaction was estimated using the average daily relationship satisfaction aggregated across all daily reports. This approach helps to ensure that the measure of variability in satisfaction is not confounded with average levels of satisfaction.

As before, all coefficients were modeled as fixed effects. Predictor variables were centered using the grand mean across husbands and wives. The key coefficient in this model is γ_{30}, which represents the interaction between implicit partner evaluations and explicit relationship satisfaction predicting variability in satisfaction.

Predicting variability across days. Model tests revealed that husbands and wives differed significantly in their average levels of variability (the intercept), $\chi^2(1) = 8.74$, $p = .003$, so the intercept was allowed to vary across husbands and wives. There were no significant gender differences for any other coefficients, $\chi^2 s(1)s < 1.49$, $p s > .22$, so other coefficients were pooled across husbands and wives. Results of the analysis predicting variability in daily relationship evaluations over the 14-day diary period are presented in Table 6. The hypothesized interaction between implicit and explicit attitudes predicting variability in daily satisfaction across diary days was not significant, $b = -0.01$, $p = .65$. These results are not consistent with Hypothesis 5, revealing no significant associations between implicit-explicit congruence and variability in explicit satisfaction across days during the daily diary period.

Table 6

Predicting Variability in Daily Relationship Evaluations from Implicit-Explicit Congruence

| | Variability in Daily Relationship Evaluations | | | | | |
| | | | | | 95% CI | |
Fixed Effects	b	(*SE*)	t	p	Lower	Upper
Intercept (wives)	0.848	(.026)	39.01***	<.001	0.805	0.891
Intercept (husbands)	0.767	(.026)	29.69***	<.001	0.716	0.818
Explicit (Average Daily Satisfaction)	-0.278	(.022)	-12.63***	<.001	-0.322	-0.235
Implicit (GNAT)	0.020	(.016)	1.26	.207	-0.011	0.052
Explicit × Implicit (GNAT)	-0.009	(.020)	-0.46	.648	-0.049	0.030

Note: CI = confidence interval.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Predicting variability across assessments. A separate multilevel model examined variability in explicit relationship satisfaction across 4 biannual assessments over the 1.5-year period of the study. As discussed previously, because variability is likely related to average levels of relationship satisfaction, this model used average levels of explicit relationship satisfaction (the average CSI score aggregated across all 4 assessment periods) rather than using the CSI reported only at the initial assessment. Model tests revealed that husbands and wives differed significantly in the interaction between implicit partner evaluations and average levels of explicit relationship satisfaction, $\chi^2(1)$ = 6.83, p = .009, so this interaction term was allowed to vary across husbands and wives. There were no significant gender differences for any other coefficients, χ^2s(1)s < 2.04, ps > .15, so other coefficients were pooled across husbands and wives.

Results of the analysis predicting variability in explicit relationship satisfaction across assessments (over the 1.5-year period of the study) are presented in Table 7. The hypothesized interaction between implicit and explicit attitudes predicting variability in daily satisfaction across diary days was significant for husbands, b = -0.08, p = .035, but was not significant for wives, b = 0.04, p = .12.

Table 7

Predicting Variability in Relationship Satisfaction over 1.5 Years from Implicit-Explicit

Congruence

Fixed Effects	Variability in Explicit Relationship Satisfaction over 1.5 Years				95% CI	
	b	(*SE*)	*t*	*p*	Lower	Upper
Intercept	5.913	(.260)	22.76***	<.001	5.400	6.426
Explicit (Average CSI)	-0.347	(.023)	-15.16***	<.001	-0.392	-0.302
Implicit (GNAT)	0.109	(.221)	0.49	.622	-0.326	0.544
Explicit × Implicit (wives)	0.044	(.028)	1.55	.123	-0.012	0.100
Explicit × Implicit (husbands)	-0.082	(.038)	-2.13*	.035	-0.158	-0.006

Note: CI = confidence interval.
* $p < .05.$ ** $p < .01.$ *** $p < .001.$

The significant interaction for husbands was decomposed by evaluating simple

slopes and regions of significance, as before. For husbands 1 *SD* below the mean on

explicit relationship satisfaction, implicit partner evaluations were significantly positively

associated with variability over time, $b = 0.95$, $t(339) = 2.05$, $p = .041$. However, for

husbands 1 *SD* above the mean on explicit relationship satisfaction, this association was

negative and marginally significant, $b = -0.73$, $t(339) = -1.66$, $p = .099$. The interaction

for husbands is depicted in Figure 10.
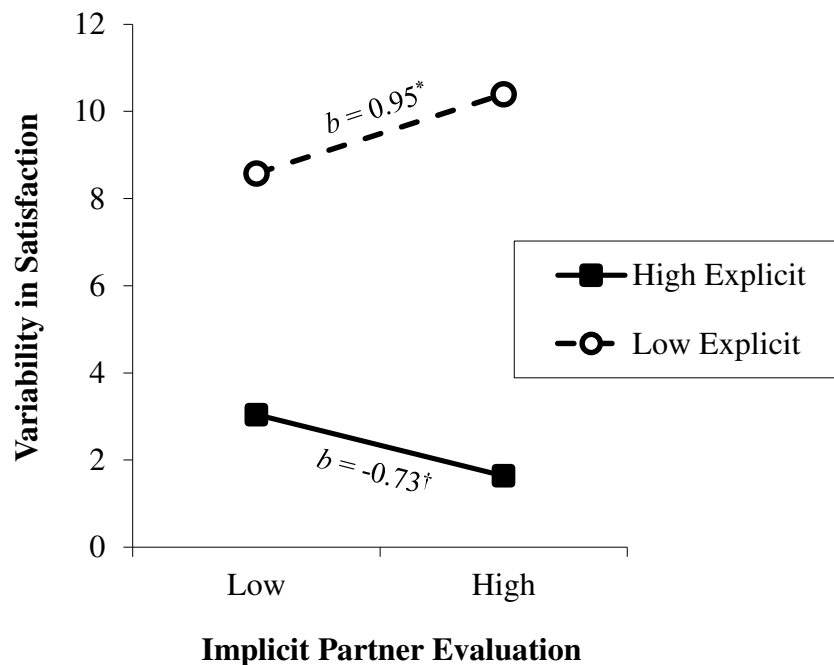
Figure 10. Interaction between explicit relationship satisfaction and implicit partner evaluations predicting variability over 1.5 years for husbands. Simple slopes are displayed along each line, calculated at low (-1 *SD*) and high (+1 *SD*) implicit partner evaluations and explicit relationship satisfaction.
$^\dagger p < .10.$ $^* p < .05.$

The region of significance for this interaction is depicted as the shaded region in Figure 11, which displays the entire range of explicit relationship satisfaction (aggregated across bi-yearly assessments) observed in the current sample on the *X*-axis. As shown in Figure 11, the slope representing the association between implicit evaluations and variability in satisfaction over time was significant for husbands lower than 59.46 (further than 0.79 *SD*s below the mean) on average explicit relationship satisfaction. The association was not significant for any observed levels of average explicit relationship satisfaction above 59.46.
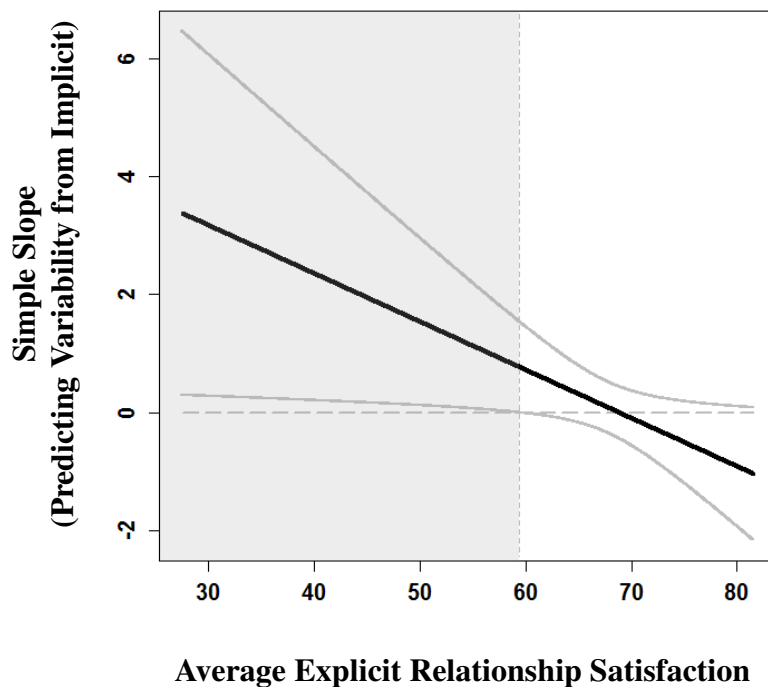
Figure 11. Regions of significance for the association between implicit evaluations and variability across all observed levels of explicit relationship satisfaction for husbands. The shaded area shows the region of significance for which the association between implicit partner evaluations and variability in explicit relationship satisfaction is significant. The curved gray lines represent 95% confidence bands.

These results are partially consistent with Hypothesis 5. Although the interaction between implicit and explicit evaluations did not significantly predict variability in relationship evaluations across days in the daily diary assessment, the interaction did significantly predict variability in explicit relationship satisfaction for husbands at biannual follow-up assessments over 1.5 years. Furthermore, the pattern of results depicted in Figure 11 suggests that variability was highest for husbands with discrepant dissatisfaction (i.e., low explicit relationship satisfaction combined with high implicit partner evaluations). The other form of discrepancy (high explicit relationship

satisfaction combined with low implicit partner evaluations) was associated with marginally significant levels of variability. Consistent with Hypothesis 5, discrepant evaluations were associated with greater variability in satisfaction over time.

Hypothesis 6: Reactivity to daily negative behavior. Hypothesis 6 predicted that discrepancies between implicit and explicit evaluations would be associated with greater reactivity to daily negative partner behavior. Evaluating this hypothesis required a different multilevel model, as this hypothesis focuses on within-person fluctuations over days in the daily diary period rather than simply examining within-couple effects as did all prior analyses. A two-level multilevel model was estimated with variation across days modeled at level 1 and variation across individuals and couples modeled at level 2.

Reactivity to daily negative behavior was modeled by estimating slopes for each participant representing the degree to which one's daily relationship evaluation shifted in response to negative behavior that was reported by one's spouse. Modeling reactivity as a *partner effect* (e.g., using the partner's report of his or her own behavior rather than examining perceptions of a partner's behavior) ensures that the reactivity effects do not simply reflect construal or biased perceptions (e.g., perceiving negative partner behavior that the partner did not report). A simplified version of this model (excluding control variables and gender differences) is shown below.

Level 1 (within-couple) model:

Daily relationship evaluation = b_{0j} + b_{1j}(partner's self-reported negative

behavior) + b_{2j}(yesterday's relationship evaluation) + e_{ij}

Level 2 (between-couple) model:

$b_{0j} = \gamma_{00} + \gamma_{01}(\text{implicit}) + \gamma_{02}(\text{explicit}) + \gamma_{03}(\text{implicit} \times \text{explicit}) + u_{0j}$

$b_{1j} = \gamma_{10} + \gamma_{11}(\text{implicit}) + \gamma_{12}(\text{explicit}) + \gamma_{13}(\text{implicit} \times \text{explicit})$

$b_{2j} = \gamma_{20}$

Predictor variables were grand mean centered at level 2 using the grand mean across husbands and wives. Daily-level predictors were person-mean centered at level 1 around each individual's own mean, with the exception of partner-reported negative behavior. Because the distribution for partner negative behavior was highly skewed, it was treated as a dichotomous variable comparing days during which any negative behavior was reported by the partner (approximately 27% of days) to days during which no negative behavior was reported. In this model, b_{1j} represents daily reactivity – the degree to which one's relationship evaluation shifts (controlling for yesterday's evaluation) in response to a partner's self-reported negative behavior. The intercept was allowed to vary randomly across individuals, but other coefficients were modeled as fixed effects.

Although not depicted in the simplified model above, analyses also controlled for linear trends of time (i.e., diary day) and for the amount of time (in hours) spent with the partner during the day. The key coefficient for evaluating Hypothesis 6 in this model is

γ_{13}, which tests the interaction between implicit and explicit evaluations predicting the association (slope) between the partner's negative behavior and daily relationship evaluations. After controlling for the main effects of implicit and explicit evaluations, the interaction term (γ_{13}) tests the hypothesis that implicit-explicit discrepancies predict reactivity to daily negative behavior (i.e., the degree to which daily relationship evaluations are contingent upon whether or not the partner behaved negatively that day).

Examining same-day reactivity to negative behavior. Model tests showed that there was a significant difference between husbands and wives in the effect of implicit partner evaluations on daily relationship evaluation, $\chi^2(1) = 4.16$, $p = .041$, so this coefficient was allowed to vary across spouses. There were no significant gender differences for any other coefficients, χ^2s(1) < 1.88, ps > .17, so all other coefficients were pooled across husbands and wives. Results for the analysis predicting same-day relationship evaluations is summarized in Table 8.

As shown in Table 8, partner-reported negative behavior was significantly negatively associated with daily relationship evaluations, $b = -1.04$, $p < .001$, suggesting that spouses tended to evaluate their relationships more negatively on days when their partners reported engaging in negative behavior. In addition to these baseline levels of reactivity, the interactions with partner negative behavior represent the degree to which baseline levels of reactivity (i.e., the slopes representing the association between partner negative behavior and daily relationship evaluation) are moderated by implicit partner evaluations, explicit relationship satisfaction, and their interactive effects.

Table 8

Predicting Same-Day Reactivity to Partner Negative Behavior from Implicit-Explicit

Congruence

Fixed effects	Daily Relationship Evaluation				95% CI	
	b	*(SE)*	*t*	*p*	Lower	Upper
Intercept	17.356	(.122)	141.75[*]	<.001	17.115	17.598
Explicit (CSI)	0.136	(.012)	11.81[***]	<.001	0.113	0.159
Implicit (GNAT; wives)	0.121	(.141)	0.76	.392	-0.157	0.399
Implicit (GNAT; husbands)	-0.302	(.153)	-1.96[†]	.051	-0.605	0.001
Explicit × Implicit	0.005	(.010)	0.47	.641	-0.015	0.025
Partner Negative Behavior (PNB)	-1.043	(.098)	-10.66[***]	<.001	-1.235	-0.851
PNB × Explicit	0.012	(.010)	1.29	.197	-0.006	0.031
PNB × Implicit	-0.014	(.092)	-0.16	.877	-0.195	0.167
PNB × Explicit × Implicit	0.032	(.009)	3.48[***]	<.001	0.014	0.050
Control Variables						
Linear trend of time	-0.001	(.012)	-0.04	.968	-0.025	0.024
Hours spent with partner	0.198	(.012)	16.93[***]	<.001	0.175	0.221
Yesterday's Relationship Evaluation	0.091	(.016)	5.68[***]	<.001	0.059	0.122

Note: CI = confidence interval; PNB = Partner's Negative Behavior.
[†] *p* < .10. [*] *p* < .05. [**] *p* < .01. [***] *p* < .001.

As predicted, the three-way interaction between implicit partner evaluations, explicit relationship satisfaction, and partner negative behavior was significant, *b* = 0.03, *p* < .001). As shown in Figure 12, the slopes for reactivity were relatively steeper for participants with discrepant attitudes (high explicit and low implicit, or vice versa) than for participants with congruent attitudes.
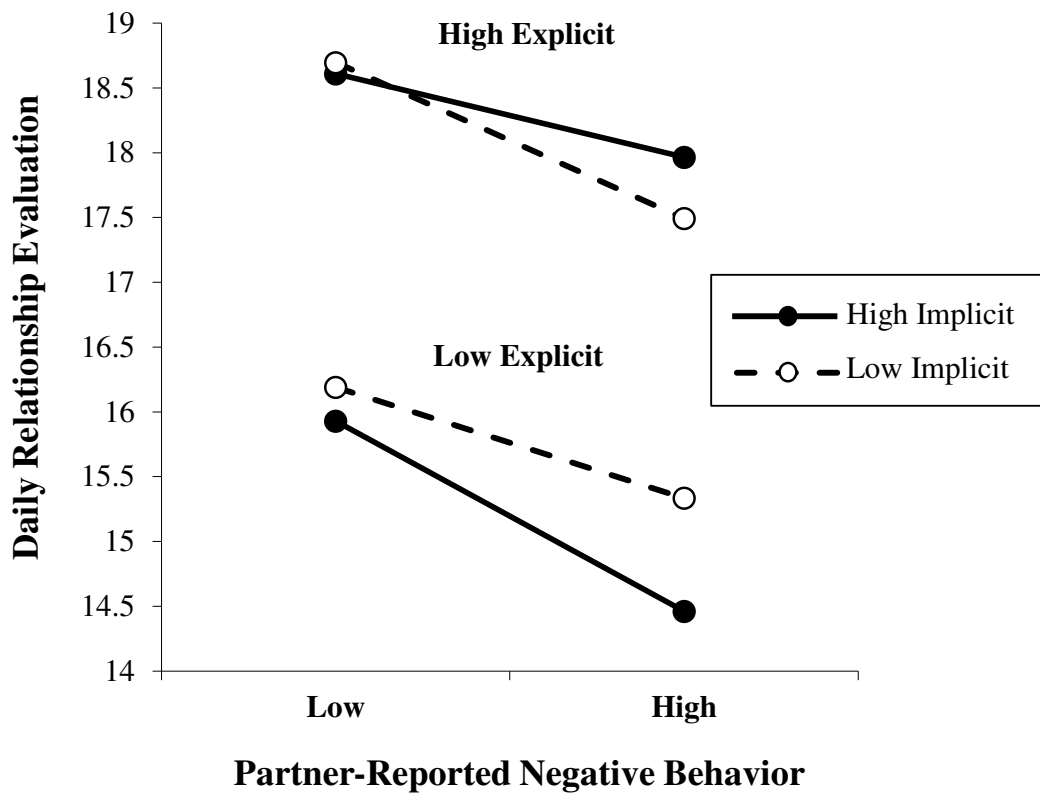
Figure 12. Three-way interaction between implicit partner evaluations, explicit relationship satisfaction, and partner negative behavior. Simple slopes are graphed at low (-1 *SD*) and high (+1 *SD*) values of implicit partner evaluations and explicit relationship satisfaction.

The significant three-way interaction was decomposed by examining simple slopes and regions of significance for the association between partner negative behavior and daily relationship satisfaction (representing reactivity to daily negative behavior). Simple slopes were examined at one *SD* above and one *SD* below the mean for each predictor (for both implicit partner evaluations and explicit relationship satisfaction). Furthermore, differences in the size of these simple slopes were tested for significance using the approach described by Dawson and Richter (2006). The simple slopes were negative and significant for all combinations of these predictors (all *p*s < .001),

suggesting that participants were generally reactive to their partner's negative behavior (higher negative behavior was associated with more negative relationship evaluations on the same day).

For individuals low (one *SD* below the mean) on explicit relationship satisfaction, reactivity to daily negative partner behavior was stronger (as evidenced by a more negative slope) if they were high on implicit partner evaluations (i.e., if their attitudes were discrepant), $b = -1.47$, $t(332) = -7.89$, $p < .001$, than if they were low on implicit partner evaluations (i.e., if their attitudes were congruent), $b = -0.86$, $t(332) = -5.25$, $p < .001$. The difference between these two slopes was significant, $t(332) = 2.65$, $p = .009$. For participants with high explicit relationship satisfaction, the negative slope representing reactivity to partner negative behavior was stronger if they were low on implicit partner evaluations (i.e., discrepant attitudes), $b = -1.20$, $t(332) = -6.42$, $p < .001$, than if they were high on implicit partner evaluations (i.e., congruent attitudes), $b = -0.64$, $t(332) = -3.41$, $p < .001$, and the difference between these two slopes was significant, $t(332) = 2.18$, $p = .030$. In summary, participants were more reactive to their partner's daily negative behavior when their own attitudes were discrepant rather than congruent, regardless of the direction of their discrepancy (e.g., high explicit combined with low implicit or vice versa).
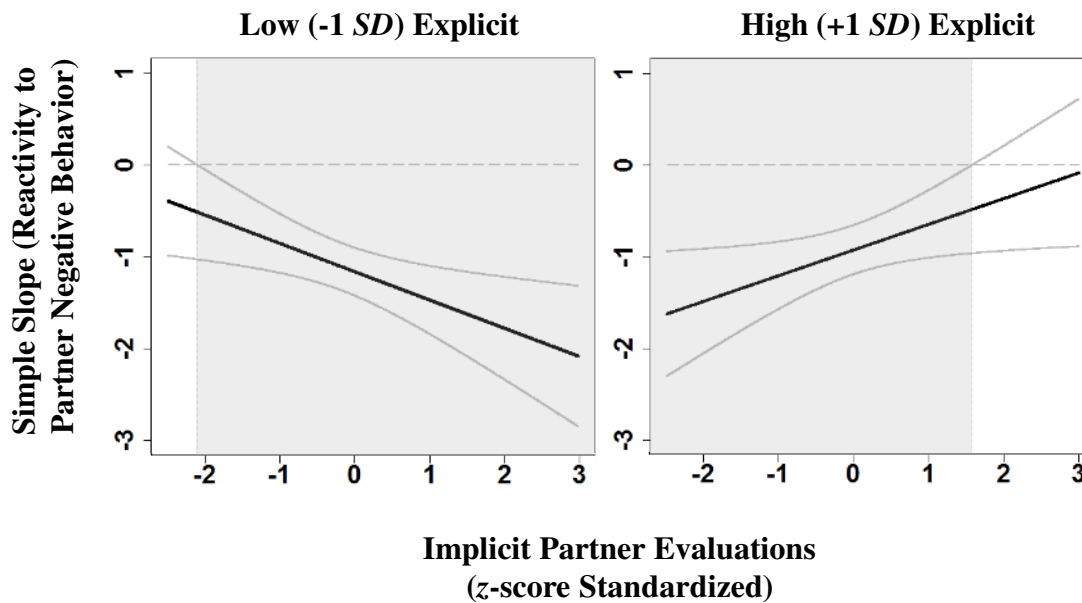
Figure 13. Regions of significance for reactivity to partner negative behavior by levels of explicit and implicit partner evaluations. The *X*-axis depicts standardized scores for implicit partner evaluations to aid interpretation. The shaded areas show regions of significance for which the slope representing reactivity to partner negative behavior is significant. The curved gray lines represent 95% confidence bands.

This 3-way interaction was also examined by calculating regions of significance to identify the levels of implicit and explicit evaluations that are associated with significant reactivity to daily negative behavior. The slopes depicted on the *Y*-axis in Figure 13 represent the reactivity effect (the strength of association between a partner's negative behavior and one's daily relationship evaluations). Regions of significance were calculated separately for individuals low (1 *SD* below the mean, shown on the left panel) and high (1 *SD* above the mean, shown on the right panel) on explicit relationship satisfaction. The *X*-axis displays the entire range of values for implicit partner evaluations observed in the current study. As shown in Figure 13, for individuals low (-1 *SD*) on explicit relationship satisfaction, the effect of same day reactivity was significant for

those with implicit partner evaluations higher (more positive) than 2.11 *SD*s below the mean. For individuals with low explicit evaluations combined with implicit partner evaluations further than 2.11 *SD*s below the mean (i.e., congruent negative attitudes), the reactivity effect was not significant. However, this latter region of nonsignificance should be interpreted with caution as there were no participants in the dataset with this specific pattern (< -1 *SD* on explicit combined with > +2.11 *SD* on implicit) and so this region of nonsignificance extrapolates beyond the observed data.

As shown on the right panel of Figure 13, for individuals high (+1 *SD*) on explicit relationship satisfaction, the effect of same day reactivity was significant for those with implicit partner evaluations lower than 1.58 *SD*s above the mean. For individuals with high explicit evaluations combined with implicit partner evaluations further than 1.58 *SD*s above the mean (i.e., congruent positive attitudes), the reactivity effect was not significant.

These regions of significance suggest that participants with highly congruent attitudes (either high on both or low on both explicit and implicit evaluations) did not demonstrate significant same-day reactivity (their satisfaction did not shift in response to their partner's self-reported negative behavior). For other participants, the strength of the association between daily relationship evaluations and partner negative behavior became relatively stronger as attitudes became more discrepant (high on explicit and low on implicit, or vice versa). These results are consistent with Hypothesis 6.

Examining next-day reactivity to negative behavior. A more rigorous test of these reactivity effects involves examining lagged effects (the degree to which a partner's

negative behavior affects satisfaction reported *on the next day*). Examining lagged effects helps to establish temporal order and rule out various confounds that could influence associations between variables measured on the same day. More specifically, this lagged model used the partner's report of negative behavior each day to predict relationship evaluations on the *next day*, while controlling for same-day relationship evaluations. This model represents reactivity as the degree to which a partner's report of negative behavior on one day predicts shifts in daily relationship evaluations reported the following day.

As with the prior analysis, the effect of implicit evaluations on daily relationship evaluations differed significantly across husbands and wives, $\chi^2(1) = 4.07$, $p = .044$, and so was estimated separately for each spouse. No other gender differences were significant, $\chi^2\text{s}(1) < 2.48$, $ps > .11$, so all other coefficients were pooled across husbands and wives. Results of this model are summarized in Table 9.

As shown in Table 9, partner reports of negative behavior were not significantly associated with relationship evaluations reported the next day, $b = -0.10$, $p = .33$, suggesting that reactivity to partner negative behavior generally did not spill over into the next day. However, the predicted 3-way interaction between implicit partner evaluations, explicit relationship satisfaction, and partner negative behavior was significant, $b = 0.03$, $p = .002$. As shown in Figure 14, the slopes for next-day reactivity were relatively steeper for participants with discrepant attitudes (high explicit and low implicit, or vice versa) than for participants with congruent attitudes (high or low on both).

Table 9

Predicting Lagged Effects on Next-Day Reactivity to Partner Negative Behavior from

Implicit-Explicit Congruence

| | Next-Day Relationship Evaluation | | | | | |
| | | | | | 95% CI | |
Fixed effects	*b*	(*SE*)	*t*	*p*	Lower	Upper
Intercept	17.094	(.125)	136.67***	<.001	16.847	17.341
Explicit (CSI)	0.141	(.012)	12.15***	<.001	0.118	0.164
Implicit (GNAT; wives)	0.016	(.138)	0.99	.326	-0.136	0.408
Implicit (GNAT; husbands)	-0.284	(.157)	-1.81†	.072	-0.594	0.025
Explicit × Implicit	0.003	(.010)	0.30	.765	-0.017	0.023
Partner Negative Behavior (PNB)	-0.097	(.100)	-0.97	.331	-0.293	0.099
PNB × Explicit	-0.006	(.010)	-0.59	.558	-0.025	0.013
PNB × Implicit	0.067	(.092)	0.73	.468	-0.114	0.247
PNB × Explicit × Implicit	0.028	(.009)	3.04**	.002	0.010	0.046
Control Variables						
Linear trend of time	0.004	(.014)	0.28	.776	-0.023	0.031
Hours spent with partner today	0.044	(.013)	3.32***	<.001	0.018	0.070
Relationship evaluation today	0.086	(.017)	4.96***	<.001	0.052	0.120

Note: CI = confidence interval. PNB = Partner's Negative Behavior.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.
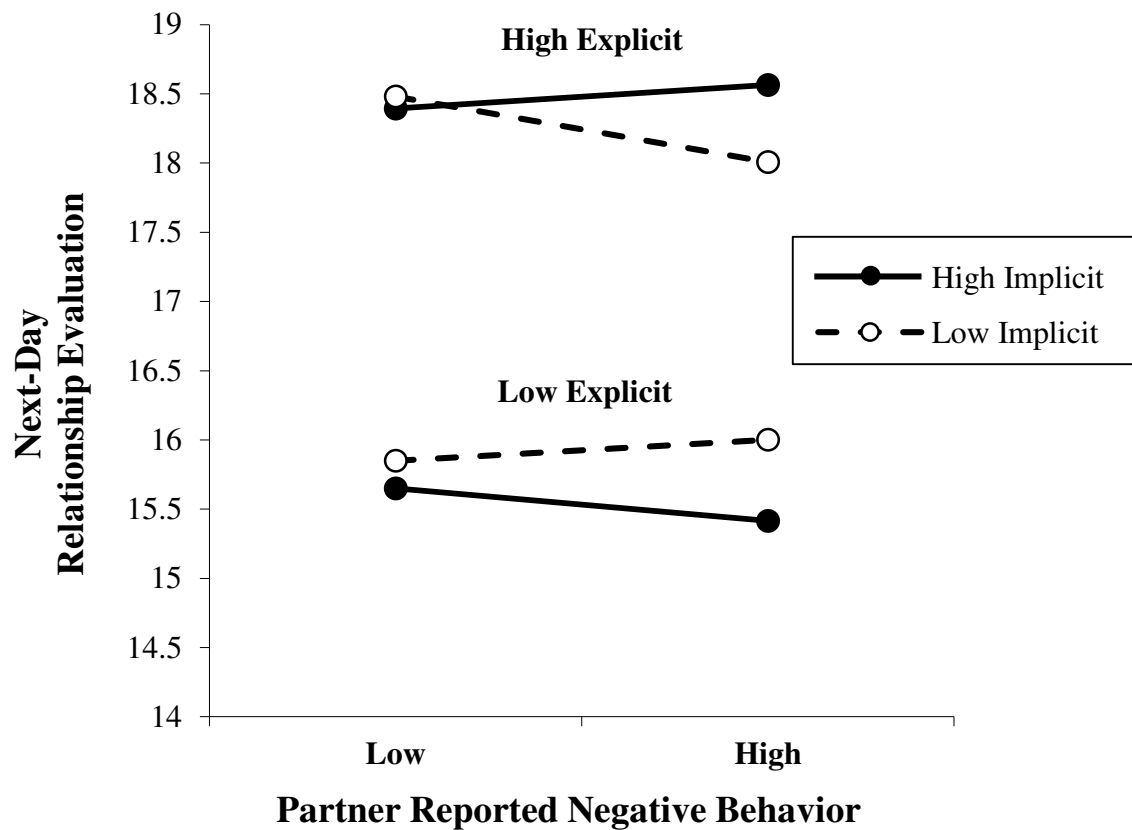
Figure 14. Predicting next-day relationship evaluation from the three-way interaction between implicit partner evaluations, explicit relationship satisfaction, and partner-reported negative behavior. Simple slopes are graphed at low (-1 *SD*) and high (+1 *SD*) values of implicit partner evaluations and explicit relationship satisfaction.

The significant 3-way interaction was decomposed as before by examining simple slopes for the association between partner negative behavior and next-day relationship evaluations (i.e., next day reactivity). Simple slopes were once again examined at one *SD* above and one *SD* below the mean for implicit partner evaluations and explicit relationship satisfaction. For individuals high +1 *SD*) on explicit relationship satisfaction, the negative slope representing next-day reactivity to partner negative behavior was

significant only when they were low on implicit partner evaluations (i.e., discrepant attitudes), $b = -0.47$, $t(332) = -2.53$, $p = .012$, but not when they were also high on implicit partner evaluations (i.e., congruent attitudes), $b = 0.17$, $t(332) = 0.90$, $p = .37$. The difference between these two slopes was significant, $t(332) = 2.54$, $p = .012$. For individuals with low explicit relationship satisfaction, next-day reactivity to partner negative behavior appeared to be relatively stronger (though nonsignificant) when they were high on implicit partner evaluations (i.e., discrepant attitudes), $b = -0.24$, $t(332) = -1.24$, $p = .22$, than when they were also low on implicit partner evaluations (i.e., congruent attitudes), $b = 0.15$, $t(332) = 0.91$, $p = .36$. However, neither the slopes nor the difference between them reached statistical significance, $t(332) = -1.65$, $p = .10$.
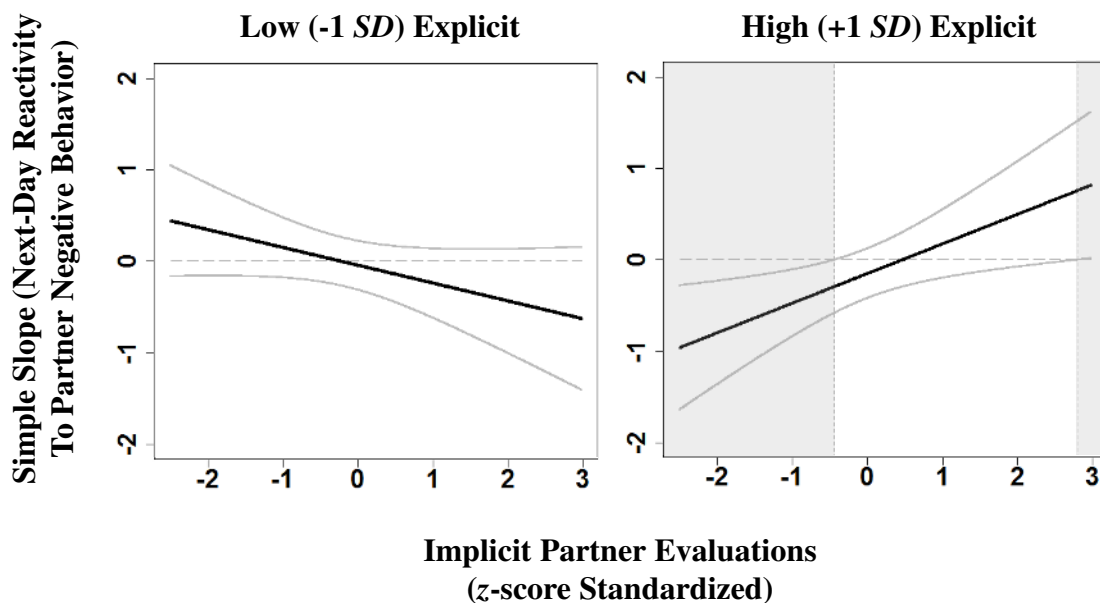
Figure 15. Regions of significance for next-day reactivity to partner negative behavior by levels of explicit and implicit partner evaluations. The *X*-axis depicts standardized scores for implicit partner evaluations to aid interpretation. The shaded areas show regions of significance for which the slope representing reactivity to partner negative behavior is significant. The curved gray lines represent 95% confidence bands.

Figure 15 shows the regions of significance for this 3-way interaction. As before, the left panel depicts individuals low (-1 *SD*) on explicit relationship satisfaction, while the right panel depicts individuals high (+1 *SD*) on explicit relationship satisfaction. The *X*-axis depicts the entire range of implicit partner evaluations observed in the current study. As shown in the left panel of Figure 15, next-day reactivity (the slope representing the strength of association between partner negative behavior and next-day relationship evaluations) was not significant for participants low (-1 *SD*) on explicit relationship satisfaction, regardless of their levels of implicit partner evaluations. For individuals high (+1 *SD*) on explicit relationship satisfaction (depicted on the right panel of Figure 15), the next-day reactivity effect was significant and negative (indicating that participants reported lower satisfaction the day after their partner reported behaving negatively) for those with implicit partner evaluations 0.44 *SD*s below the mean or lower. For individuals who were highly congruent (+1 *SD* on explicit relationships satisfaction combined with an implicit partner evaluation greater than 2.82 *SD*s above the mean), the slope representing reactivity became significant and *positive*. A positive slope means that for these highly congruent satisfied individuals, they reported relatively *more positive* evaluations of their relationship the day after their partner reported behaving negatively. However, this region of significance should be interpreted with caution, as there were no participants in the dataset exhibiting this specific combination of scores on the CSI (> +1 *SD*) and GNAT (> +2.82 *SD*s), so this region extrapolates beyond the observed data.

In summary, these results suggest that participants were more reactive to their partner's daily negative behavior (on the same day and the next day) when their attitudes

were discrepant rather than congruent. For same-day reactivity, this effect was observed regardless of the direction of their discrepancy. That is, regardless of whether participants' explicit attitudes were positive or negative, they were relatively more reactive if their implicit and explicit attitudes diverged. These results are consistent with Hypothesis 6.

Hypothesis 7: Bias in perceiving a partner's behavior. Hypothesis 7 predicted that discrepancies between implicit partner evaluations and explicit relationship satisfaction would be associated with greater bias in perceiving a partner's daily negative behavior. Accuracy and bias in perceptions of the partner's daily behavior were examined using West and Kenny's (2011) truth and bias model, which enables the simultaneous estimation of *directional* or *mean-level bias* (e.g., the tendency to generally perceive the partner as enacting less negative behavior than the partner self-reports) and *tracking accuracy* (e.g., the tendency for perceptions of the partner's negative behavior to covary with the partner's own self-reports, independent of directional bias).

In order to estimate directional bias and tracking accuracy, the current model included reports from both partners regarding their own and their partner's daily negative behavior. In contrast to the previous analyses examining reactivity, the current analyses omitted the item asking if participants had a fight or argument (since arguments involve both partners) and instead focused on self-reported and perceived partner responses for the four other negative behavior items asking about being mean, inattentive or insensitive, moody or critical, and doing something that might make the partner worry about the relationship. Responses to these four items were summed within days to create

an index of each participant's self-reported negative behavior and an index of their perceptions of the other partner's negative behavior. Directional bias and tracking accuracy were estimated for each partner using the following simplified model:

Level 1 (within-couple) model:

Perception of partner's negative behavior = b_{0j} + b_{1j}(partner's self-reported negative behavior) + e_{ij}

Level 2 (between-couple) model:

$b_{0j} = \gamma_{00} + \gamma_{01}(\text{explicit}) + \gamma_{02}(\text{implicit}) + \gamma_{03}(\text{implicit} \times \text{explicit}) + u_{0j}$

$b_{1j} = \gamma_{10} + \gamma_{11}(\text{explicit}) + \gamma_{12}(\text{implicit}) + \gamma_{13}(\text{implicit} \times \text{explicit})$

In this model, tracking accuracy is estimated at level 1 as the slope, b_{1j}, which measures the degree to which perceptions of the partner's negative behavior are associated with the partner's actual self-reported negative behavior. West and Kenny refer to this as the "truth" effect, implying that the partner's self-report is an accurate indicator of their actual behavior.

Modeling directional bias requires a specific strategy of centering variables. First, the partner's self-reported negative behavior was grand-mean centered using the grand mean across husbands and wives. Next, following West and Kenny (2011), perceived partner negative behavior was centered by subtracting the grand mean for the partner's actual self-reported behavior; that is, both variables were centered by subtracting the same grand mean for the partner's self-reported behavior. With this centering strategy, a positive intercept demonstrates positive directional bias (perceiving more negative behavior than the partner reports), while a negative intercept demonstrates negative

directional bias (underreporting partner negative behavior). Other predictors were centered using the grand mean across husbands and wives, as in prior analyses.

The key coefficient for testing Hypothesis 7 is γ_{03}, which models the interaction between implicit and explicit evaluations predicting directional bias. This coefficient tests the prediction that relative to individuals with congruent high relationship satisfaction, individuals with discrepant relationship satisfaction would have more directional bias, perceiving less negative behavior than the partner reports.

Model tests revealed that husbands and wives differed in the association between explicit relationship satisfaction and tracking accuracy, $\chi^2(1) = 3.76$, $p = .052$, so this coefficient was allowed to vary across husbands and wives. There were no significant gender differences for any other coefficients, χ^2s(1)s < 1.61, $ps > .20$, so other coefficients were pooled across husbands and wives. The results of this model are summarized in Table 10.

The intercept of this model, representing average levels of directional bias, was not significant, $b = -0.005$, $p = .80$, suggesting that couples did not have a general tendency to over-report or under-report their partner's negative behavior. However, this coefficient was significantly moderated by explicit relationship satisfaction, $b = -0.012$, $p < .001$, such that individuals relatively high in explicit relationship satisfaction tended to perceive less partner negative behavior than the partners self-reported. The hypothesized interaction between implicit and explicit evaluations predicting directional bias was not statistically significant, $b = 0.003$, $p = .11$, suggesting that implicit-explicit discrepancies did not affect directional bias.

Table 10

Predicting Bias and Accuracy in Perceptions of Negative Behavior from Implicit-Explicit

Congruence

Fixed effects	b	(SE)	t	p	95% CI	
					Lower	Upper
Directional Bias	-0.005	(.019)	-0.26	.796	-0.043	0.033
Predictors of Directional Bias						
Explicit (CSI)	-0.012	(.002)	-5.83***	<.001	-0.016	-0.008
Implicit (GNAT)	0.000	(.021)	-0.01	.994	-0.041	0.041
Explicit × Implicit	0.003	(.002)	1.59	.112	-0.001	0.007
Tracking Accuracy	0.496	(.014)	36.55***	<.001	0.469	0.522
Predictors of Tracking Accuracy						
Explicit (CSI; wife)	-0.006	(.002)	-2.75**	.006	-0.010	-0.002
Explicit (CSI; husband)	0.000	(.002)	-0.01	.990	-0.004	0.004
Implicit (GNAT)	-0.020	(.015)	-1.36	.175	-0.049	0.009
Explicit × Implicit	-0.004	(.002)	-2.47*	.014	-0.007	-0.001

The columns "Bias and Accuracy in Perceiving Partner Negative Behavior" span b, (SE), t, p, and "95% CI" spans Lower, Upper.

Note: CI = confidence interval.
* $p < .05$. ** $p < .01$. *** $p < .001$.

The bottom half of Table 10 shows that spouses had significant levels of tracking

accuracy, $b = .496$, $p < .001$, suggesting that they were relatively accurate in perceiving

negative behavior that was reported by their partners. These baseline levels of tracking

accuracy were moderated by explicit relationship satisfaction for wives, $b = -0.006$, $p =$

.006, but not for husbands, $b = .000$, $p = .99$, suggesting that more satisfied wives were

relatively less accurate at perceiving and reporting their partner's negative behavior

(independent of directional bias). Tracking accuracy was also predicted by a significant

interaction between implicit and explicit evaluations, $b = -0.004$, $p = .014$. This interaction was decomposed by examining simple slopes at 1 SD above and below the mean for both implicit and explicit evaluations. All of these simple slopes were positive and significant, all ts(335) > 14.10, all ps < .001, suggesting that tracking accuracy was significant at all combinations of implicit and explicit evaluations. The simple slope representing tracking accuracy was smallest (indicating relatively lower levels of tracking accuracy) for participants high on both implicit and explicit evaluations, $b = 0.413$, and this slope was significantly smaller than the other 3 simple slopes, all ts(335) > 2.39, all ps < .018. The other 3 simple slopes (bs = .510 to .540) did not significantly differ from one another, all ts(335) < 0.83, all ps > .41.

In summary, these results did not confirm Hypothesis 7 in that discrepant attitudes were not associated with greater directional bias. However, several other interesting patterns emerged. Although not hypothesized, high explicit relationship satisfaction was associated with negative directional bias (underreporting partner negative behavior) and wives with high explicit relationship satisfaction tended to be relatively less accurate in reporting partner negative behavior. Furthermore, accuracy was lowest for individuals high on both explicit and implicit evaluations.

Hypothesis 8: Change over time in explicit relationship satisfaction.

Hypothesis 8 predicted that discrepant relationship satisfaction would be associated with relatively steeper declines in explicit satisfaction over time. This hypothesis was evaluated using a growth model in a multilevel modeling framework. Change in explicit satisfaction was modeled as the slope in explicit satisfaction over assessment points

collected every 6 months over a period of approximately 1.5 years. This slope was predicted from implicit evaluations, explicit evaluations (measured at the initial assessment), and the implicit-explicit interaction term. Because one of the moderating variables (initial explicit satisfaction) uses the same measure as the outcome (CSI), the growth curve was estimated based on the remaining time points (excluding the initial assessment). That is, explicit relationship satisfaction and implicit partner evaluations at the initial assessment were used to predict change in explicit satisfaction over the 6, 12, and 18 month follow-up assessments. A simplified version of this model (excluding gender differences) is presented below.

Level 1 (within-couple) model:

$$\text{Explicit satisfaction} = b_{0j} + b_{1j}(\text{time}) + e_{ij}$$

Level 2 (between-couple) model:

$$b_{0j} = \gamma_{00} + \gamma_{01}(\text{explicit}) + \gamma_{02}(\text{implicit}) + \gamma_{03}(\text{implicit} \times \text{explicit}) + u_{0j}$$

$$b_{1j} = \gamma_{10} + \gamma_{11}(\text{explicit}) + \gamma_{12}(\text{implicit}) + \gamma_{13}(\text{implicit} \times \text{explicit})$$

Predictor variables at level 2 were grand mean centered by subtracting the mean across husbands and wives. Time was coded by month and centered so that 0 represented the 6-month follow-up assessment. The key coefficient in this model is γ_{13}, which, after controlling for the main effects of implicit and explicit evaluations, represents the interaction between implicit and explicit evaluations predicting the slope of change in explicit satisfaction over the course of the study.

Although not depicted in the simplified version of the model presented above, the individual difference variables that were used to predict implicit-explicit congruence (i.e.,

mindfulness, attachment anxiety, attachment avoidance, and self-esteem) were also included as control variables in these analyses. These variables moderated implicit-explicit congruence in the current study and may independently predict change in satisfaction over time. Therefore, it is important to rule out the possibility that any effects observed for implicit-explicit congruence predicting change over time simply represent the effects of these individual difference variables (with implicit-explicit congruence serving as a proxy indicator). To eliminate this possibility, the model controlled for the effects of mindfulness, attachment anxiety, attachment avoidance, and self-esteem in predicting both initial status and change over time.

Model tests revealed that model fit was significantly improved when accounting for three statistically significant gender differences: average change over time, $\chi^2(1) = 5.05$, $p = .025$, the effect of mindfulness on change over time, $\chi^2(1) = 13.28$, $p < .001$, and, notably, the hypothesized interaction between implicit and explicit evaluations predicting change over time, $\chi^2(1) = 5.86$, $p = .015$. These three variables were allowed to vary across husbands and wives. After accounting for these gender differences, no other coefficients differed significantly across husbands and wives, $\chi^2 s(1) < 3.55$, $ps > .059$, so all other coefficients were constrained to be equal across spouses. Results are summarized in Table 11, which shows effects predicting "initial status" (at the 6-month follow-up) and, in the lower half of the table, effects predicting change over time.

Table 11

Predicting Change in Relationship Satisfaction over 1.5 Years from Implicit-Explicit

Congruence

					95% CI	
Fixed effects	*b*	(*SE*)	*t*	*p*	Lower	Upper
Predicting Initial Status at 6-month Follow-up						
Initial Status (Intercept)	67.807	(.631)	107.41***	<.001	66.565	59.050
Explicit (CSI)	0.686	(.060)	11.47***	<.001	0.568	0.803
Implicit (GNAT)	0.136	(.519)	0.263	.793	-0.883	1.156
Explicit × Implicit	-0.022	(.052)	-0.42	.672	-0.125	0.081
Control Variables Predicting Initial Status						
Mindfulness	0.079	(.685)	0.12	.908	-1.266	1.424
Attachment Anxiety	-0.739	(.445)	-1.66†	.097	-1.613	0.134
Attachment Avoidance	0.157	(.526)	0.30	.765	-0.875	1.190
Self-Esteem	1.018	(1.170)	0.87	.384	-1.279	3.316
Predicting Change over Time through 18-month Follow-Up						
Change over Time (wife)	-0.266	(.071)	-3.73***	<.001	-0.406	-0.125
Change over Time (husband)	-0.102	(.066)	-1.55	.123	-0.232	0.028
Explicit (CSI)	0.008	(.006)	1.47	.142	-0.003	0.019
Implicit (GNAT)	-0.027	(.048)	-0.57	.566	-0.121	0.066
Explicit × Implicit (wife)	0.018	(.006)	3.04**	.002	.007	.030
Explicit × Implicit (husband)	-0.005	(.007)	-0.74	.462	-0.019	0.009
Control Variables Predicting Change over Time						
Mindfulness (wife)	0.319	(.082)	3.90***	<.001	0.158	0.480
Mindfulness (husband)	-0.039	(.075)	-0.52	.602	-0.186	0.108
Attachment Anxiety	-0.022	(.042)	-0.53	.599	-0.104	0.060
Attachment Avoidance	0.016	(.051)	0.03	.751	-0.083	.115
Self-Esteem	0.077	(.112)	0.69	.492	-0.142	0.296

Note: CI = confidence interval.
* *p* < .05. ** *p* < .01. *** *p* < .001.

The top section of Table 11 displays associations between relationship evaluations measured at the first assessment and initial status in the growth model (relationship satisfaction at the 6-month follow-up, which serves as the baseline in this growth curve model). Not surprisingly, explicit relationship satisfaction at the first assessment predicted relationship satisfaction at the 6-month follow-up, $b = 0.69$, $p < .001$.

Of more interest are the results shown on the bottom half of Table 11 representing predictors of change over time (over 6, 12, and 18 months). On average (and at average levels of other variables), wives' satisfaction dropped by 0.27 points on the CSI each month during this period, $b = -0.27$, $p < .001$. Husbands' satisfaction did not decline significantly over the same period, $b = -0.10$, $p = .12$. As noted previously, there was a significant gender difference such that the hypothesized interaction between implicit and explicit evaluations predicting change over time varied significantly across husbands and wives. The hypothesized interaction was significant for wives, $b = 0.02$, $p = .002$, but was not significant for husbands, $b = -0.01$, $p = .46$. This interaction was plotted and simple slopes were examined in wives only. As shown in Figure 16, the slopes representing change in relationship satisfaction over time appeared to be relatively steeper for wives with discrepant attitudes than for wives with congruent attitudes.

The significant three-way interaction was decomposed by examining simple slopes for the association between time and relationship satisfaction for wives at one *SD* above and one *SD* below the mean for each predictor (for both implicit partner evaluations and explicit relationship satisfaction measured at the first assessment).

Furthermore, differences in the size of these simple slopes were tested for significance using the approach described by Dawson and Richter (2006).
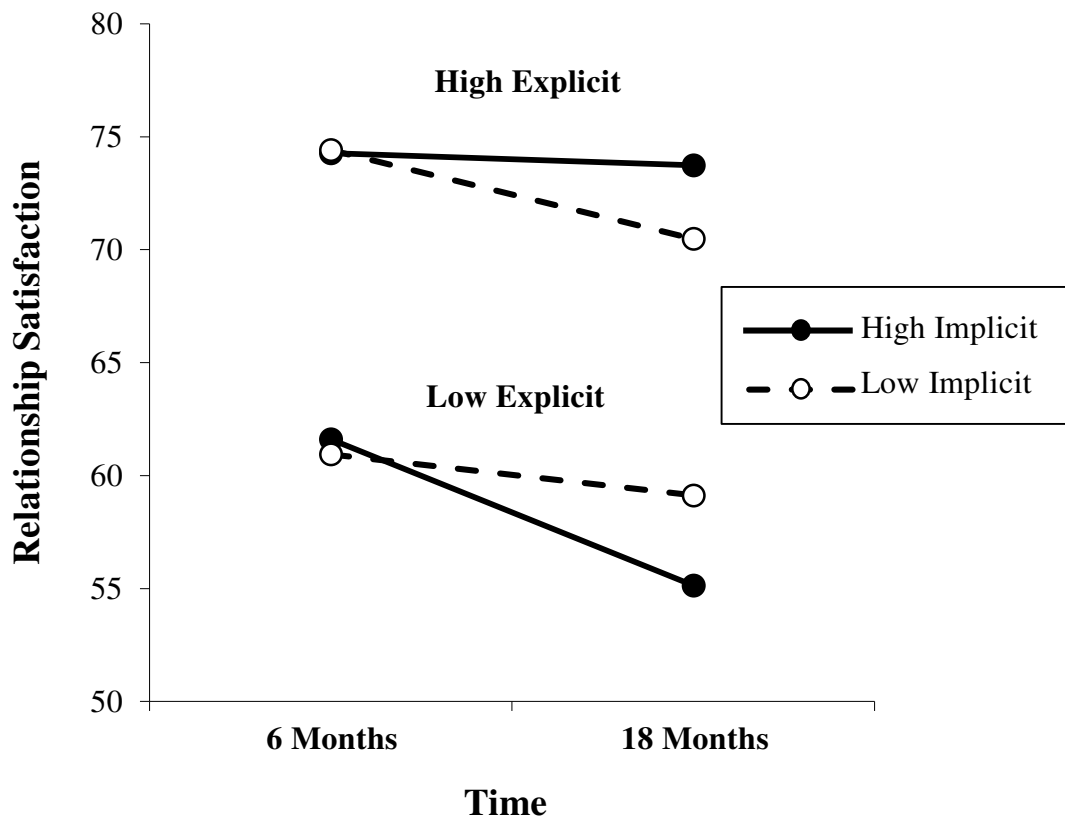
Figure 16. Interaction predicting change over time for wives from implicit partner evaluations and explicit relationship satisfaction. Simple slopes are graphed at low (-1 *SD*) and high (+1 *SD*) values of implicit partner evaluations and explicit relationship satisfaction.

For wives low (-1 *SD*) on explicit relationship satisfaction at the beginning of the study, their relationship satisfaction significantly declined over time only if they were high on implicit partner evaluations (i.e., if their attitudes were discrepant), $b = -0.54$, $t(325) = 4.61$, $p < .001$, but not if they were also low on implicit partner evaluations (i.e.,

if their attitudes were congruent), $b = -0.15$, $t(325) = -1.36$, $p = .18$. The difference

between these two slopes was significant, $t(325) = 2.82$, $p = .005$.

For wives with high (+1 *SD*) explicit relationship satisfaction at the beginning of

the study, they declined significantly between the 6-month and 18-month follow-up

assessments only if they were low on implicit partner evaluations (i.e., discrepant

attitudes), $b = -0.33$, $t(325) = -2.93$, $p = .004$, but not if they were also high on implicit

partner evaluations (i.e., congruent attitudes), $b = -0.05$, $t(325) = -0.38$, $p = .71$, although

the difference between these two slopes was only marginally significant, $t(325) = 1.91$, p

$= .057$. As with prior analyses, this interaction was also decomposed by calculating

regions of significance, shown in Figure 17.
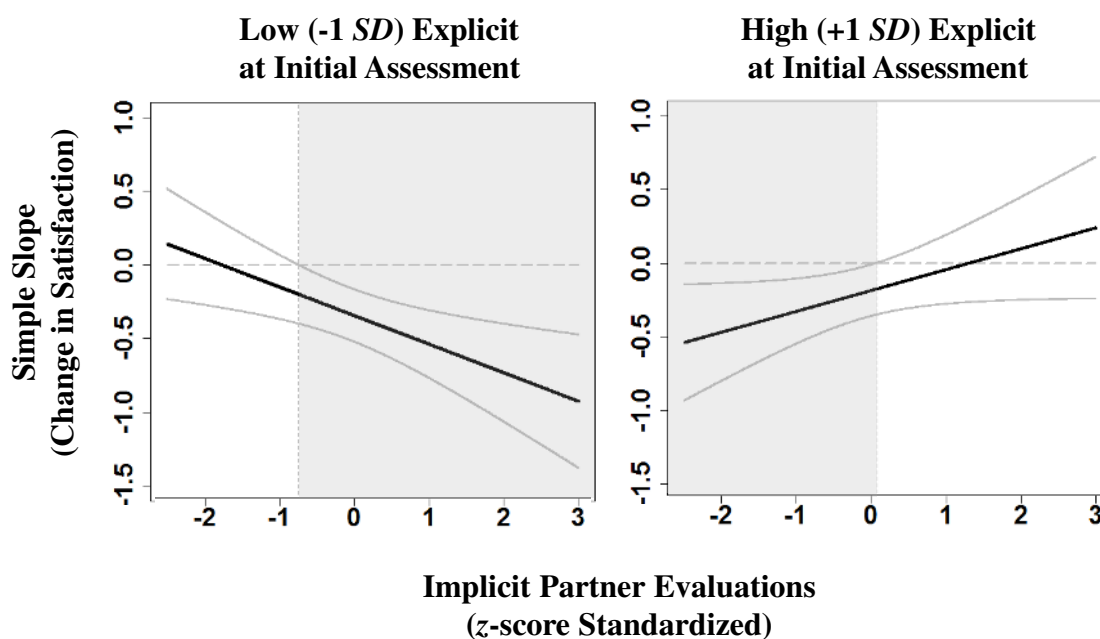
Figure 17. Regions of significance for change in satisfaction over time by levels of initial explicit and implicit partner evaluations. The *X*-axis depicts standardized scores for implicit partner evaluations to aid interpretation. The shaded areas show regions of significance for which the slope representing reactivity to partner negative behavior is significant. The curved gray lines represent 95% confidence bands.

As shown in the left pane of Figure 17, for wives low (-1 *SD*) on explicit relationship satisfaction at the beginning of the study, the slope representing their decline in satisfaction between the 6 and 18 month follow-ups was significant only for those with implicit evaluations 0.74 *SD*s below the mean or higher. For wives high (+1 *SD*) on explicit satisfaction at the beginning of the study, the decline in their satisfaction between 6 and 18 month follow-ups was significant only if their implicit evaluations were 0.09 *SD*s above the mean or lower.

In summary, the significant interaction for wives was consistent with Hypothesis 8 in that wives with discrepancies between their implicit and explicit evaluations at the beginning of the study experienced relatively steeper declines in satisfaction over the 18 months of the study. This finding suggests that in addition to the proximate consequences associated with discrepancies between implicit and explicit evaluations (e.g., variability, reactivity), such discrepancies may also have longer-term negative consequences.

Chapter 4: Discussion

The early years of marriage provide a unique context for studying relationship processes, as newlyweds are likely to experience pronounced motivation to suppress or deny nascent doubts in order to justify commitment and maintain a sense of security. These motivational factors provide an ideal context in which to examine the nature of discrepancies between implicit and explicit evaluations. Past research has examined the independent effects of implicit and explicit attitudes in various types of romantic relationships. The goal of the current research, however, was to explore the *interactive* effects of implicit and explicit evaluations in the context of newlywed marriage, with a focus on the antecedents and consequences of implicit-explicit discrepancies. Several hypotheses were fully or partially supported by the data. In addition, several unexpected effects emerged that may provide insight into the nature of implicit-explicit discrepancies and other relational processes, as discussed below. Table 12 presents a brief summary of hypotheses and an overview of the broad conclusions reached regarding each hypothesis.

Table 12

Summary of Hypotheses and Results

Hypothesis	Summary of Results
Moderators of Implicit-Explicit Congruence	
Hypothesis 1: Moderation by dispositional mindfulness	**Not supported** – hypothesized interaction was significant, but the direction ran counter to Hypothesis 1. Attitudes were more congruent for those with low dispositional mindfulness.
Hypothesis 2: Moderation by attachment avoidance	**Supported** by significant interaction in the expected direction such that attitudes were more congruent for those with low attachment avoidance
Hypotheses 3a/3b: Moderation by attachment anxiety	**Supported Hypothesis 3b** with significant interaction such that attitudes were more congruent for those with high attachment anxiety.
Hypotheses 4a/4b: Moderation by self-esteem	**Partially supported** Hypothesis **4b** with marginally significant interaction such that attitudes were more congruent for those with low self-esteem.
Proximal and Longitudinal Consequences of Implicit-Explicit Congruence	
Hypothesis 5: Variability in explicit relationship satisfaction	**Partially supported** by significant interaction for husbands (but not wives) examining variability over 1.5 years. Husbands with congruent attitudes were less variable in satisfaction. Interaction was not significant for day-to-day variability.
Hypothesis 6: Reactivity to daily partner negative behavior	**Supported** by significant interaction in the expected direction. Congruent attitudes were associated with lower reactivity to partner negative behavior.
Hypothesis 7: Bias in perceiving partner negative behavior	**Not supported** – hypothesized interaction was not significant for directional bias. Significant interaction with tracking accuracy was in a direction inconsistent with hypotheses (congruent high satisfaction was associated with lesser accuracy).
Hypothesis 8: Change over time in explicit satisfaction	**Partially supported** by significant interaction for wives (but not husbands). Wives declined over time in satisfaction if their attitudes were initially discrepant, but not if their attitudes were initially congruent.

Summary of Results for Moderators of Implicit-Explicit Congruence

Significant or marginally significant results were obtained for each of the moderators of implicit-explicit congruence examined in the current study. Hypotheses were based on the expectation that these individual differences would moderate implicit-explicit congruence due to their associations with the motivation or ability to attend to and openly accept one's evaluative reactions rather than denying or suppressing initial reactions. Although some moderation results were consistent with this general conceptualization, others were not (e.g., the result for mindfulness ran counter to predictions). The results across moderation analyses suggests that the associations between individual differences and implicit-explicit discrepancies are complex and nuanced.

Moderation by dispositional mindfulness. It was hypothesized that high dispositional mindfulness would be associated with greater congruence between implicit and explicit partner evaluations due to highly mindful individuals being better equipped to attend to their internal doubts about their relationship and to evaluate implicit evaluations without judgment or defensive denial. However, the significant interaction observed in the current study was inconsistent with this hypothesis, showing that implicit and explicit attitudes were positively associated only for individuals relatively *low* rather than high in dispositional mindfulness. This finding is inconsistent with research in other domains finding that mindfulness was associated with greater congruence between implicit and explicit affect (Brown & Ryan, 2003) and implicit and explicit self-esteem (Koole et al, 2009).

Analyses looking at the unique effects of two separate facets of mindfulness provide some additional clarification of this result. When the two facets were entered individually into the same analysis, the interaction was observed only for the "acting with awareness" facet and not for the "non-judging of experience" facet. The hypothesized pattern of results was based on the possibly flawed assumption that individuals high on dispositional mindfulness would be more likely to accept their automatically activated implicit partner evaluations due to a more non-judgmental and less defensive stance. The fact that the non-judging of experience facet of mindfulness did not uniquely moderate implicit-explicit congruence (whereas the acting with awareness facet did uniquely moderate congruence) suggests that this was not the aspect of mindfulness most directly responsible for the observed interaction.

The observed pattern of moderation might be explained by considering the nature of acting with awareness in the context of theoretical perspectives on implicit and explicit attitudes. For instance, several perspectives (e.g., the MCM or APE models), assume that explicit evaluations have a basis in automatically activated or implicit evaluative reactions that undergo additional cognitive processing (e.g., propositional reasoning). Individuals high on acting with awareness may engage in greater cognitive processing of their automatic implicit evaluations (e.g., considering their accuracy in light of broader considerations) before selecting responses on self-report questionnaires. This conscious deliberation may contribute to a decoupling of implicit and explicit evaluations for highly mindful individuals. In contrast, individuals low in acting with awareness may respond relatively impulsively and with less cognitive processing, yielding self-reported attitudes

that are more congruent with implicit evaluations. Consistent with this potential explanation, Gawronski and LeBel (2008) found that the association between implicit and explicit attitudes was significantly weaker when participants were asked to consider the reasons why they held a certain attitude rather than when participants were asked to simply consider their feelings.

Of course, this is a post-hoc explanation and this finding should be replicated before drawing any broad conclusions regarding its generalizability. Future research should also examine additional facets of mindfulness. In addition to the two facets examined in the current study, Baer et al. (2006) also identified facets representing nonreactivity to inner experience, observing, and describing experience. These alternative facets could potentially yield results more consistent with Hypothesis 1.

Moderation by attachment avoidance and anxiety. Results for attachment avoidance were consistent with Hypothesis 2 in that implicit and explicit partner evaluations were positively associated for those low in avoidance, but were significantly *negatively* associated for those high in avoidance. This pattern of results is consistent with the broader conceptualization of implicit-explicit discrepancies as reflecting motivational processes that affect the likelihood of accepting rather than defensively denying or suppressing initial evaluative reactions that may threaten one's sense of security in a relationship. The finding that implicit and explicit attitudes became significantly negatively associated for those very high in attachment avoidance is particularly noteworthy – such individuals reported being *less* satisfied with their relationships if their implicit partner evaluations were relatively positive. Again, this

pattern suggests that this reaction may be defensive in nature, as highly avoidant individuals may be motivated to suppress or deny strong evaluative reactions, whether those automatic evaluative reactions are positive or negative.

Results for attachment anxiety were consistent with Hypothesis 3b (and inconsistent with competing Hypothesis 3a) in that implicit and explicit evaluations were positively associated only for individuals relatively high in attachment anxiety. It is worth emphasizing that although attachment anxiety and attachment avoidance are typically positively correlated (and often discussed as though they reflect different facets of attachment security), they yielded *opposite* patterns of results in the current study. This suggests that the pattern of results was not simply due to a broader dimension of attachment security, but rather due to processes more specific to these two dimensions of attachment. Mikulincer and Shaver (2005; 2007) argue that attachment security in either form (low anxiety or low avoidance) should be associated with decreased defensiveness. From this perspective, one might expect that individuals low on attachment anxiety would be better able to acknowledge rather than defensively deny internal doubts or other threatening information. In contrast to this prediction, the current results are more consistent with the expectation that individuals high on attachment anxiety are vigilant to their own distress and therefore more aware of their implicit evaluations.

Moderation by self-esteem. Results for moderation by self-esteem were partially consistent with Hypothesis 4b (and inconsistent with Hypothesis 4a) in that a marginally significant interaction suggested that attitudes were marginally more congruent for individuals with relatively low self-esteem. The competing hypothesis was based on the

notion that individuals with high self-esteem may be better able to acknowledge threatening information (e.g., internal doubts or acknowledging a partner's negative behavior). As was the case with attachment anxiety, the data were not consistent with this hypothesis.

Why, then, might low self-esteem promote greater congruence between implicit and explicit attitudes? DeHart et al. (2004) argued that implicit partner evaluations and explicit relationship satisfaction are both governed by risk or dependency regulation processes by which people regulate their dependence on others in a self-protective manner, allowing dependence only when risk of rejection is perceived to be low. For people with low self-esteem (who are likely to chronically perceive high risk of rejection), dependency regulation processes may result in implicit evaluations fluctuating in response to how well things are currently going in a relationship. Such covariability may increase the correspondence between implicit and explicit evaluations for low self-esteem individuals. The current results are consistent with this possibility and with DeHart et al.'s finding that self-reported romantic relationship quality was only correlated with a measure of implicit evaluations (preferences for the partner's initials) among low self-esteem individuals. However, neither the current study nor DeHart et al. examined the mechanisms underlying these effects. Future research should examine the degree to which the implicit evaluations of low self-esteem individuals fluctuate in response to relationship threats and other factors that may increase perceptions of the risk of rejection.

Are implicit-explicit discrepancies defensive? Taken together, these moderation results suggest that an interesting combination of individual difference factors are associated with congruence between implicit and explicit relationship evaluations. The current results suggest that implicit-explicit congruence should be highest for individuals with relatively low attachment avoidance, dispositional mindfulness, and self-esteem, and relatively high attachment anxiety. These results are not uniformly consistent with the generalization that implicit-explicit discrepancies represent defensive processing (e.g., defensive denial or suppression of one's inner doubts). Although this explanation is consistent with the results observed for attachment avoidance, other results suggest that the antecedents of discrepancies between explicit and implicit partner evaluations may represent multiple processes (and not simply defensive denial of negativity). For instance, discrepancies may represent impulsive responding on self-report scales (in the case of mindfulness), greater attentiveness to one's own distress (in the case of attachment anxiety), or the functioning of risk or dependency regulation processes at the implicit level (in the case of self-esteem).

With the sole exception of low attachment avoidance, the individual difference factors associated with implicit-explicit congruence in the current study have also been associated with negative personal and interpersonal outcomes in past research, as discussed previously. Thus, the current results are generally not consistent with the conclusion that congruence of explicit and implicit relationship evaluations is uniformly indicative of broader personal and psychological well-being. As discussed previously, various theoretical perspectives argue that it is adaptive to hold congruent attitudes that

are consistent with one's experience (e.g. Deci & Ryan, 2000; Epstein, 1998; Rogers, 1961). The pattern of individual differences that moderated implicit-explicit congruence in the current study suggests that attitudinal congruence in marriage may arise from various processes that could differ in the degree to which they are adaptive (e.g., congruence that results from low attachment avoidance may differ from congruence that results from high attachment anxiety, low self-esteem, and low dispositional mindfulness). It might be worthwhile in future research to consider the degree to which implicit-explicit discrepancies may arise for multiple reasons and whether those underlying causes may moderate the effects of congruence.

Summary of Results for Proximal and Longitudinal Consequences of Implicit-Explicit Congruence

In addition to examining individual differences associated with implicit-explicit congruence, another broad goal of the current research was to examine proximal and longitudinal consequences of attitudinal congruence. Although not all hypotheses were fully supported, the broad pattern of results suggests that discrepancies between implicit and explicit evaluations is associated with various maladaptive consequences.

Variability in explicit relationship satisfaction. Hypothesis 5 (predicting variability in relationship evaluations over time) received partial support. Although the interaction between implicit and explicit evaluations did not predict variability in relationship evaluations across days in the 2-week daily diary period, it did significantly predict variability in relationship satisfaction reported over 1.5 years in bi-yearly assessments for husbands (but not for wives). Specifically, husbands high in explicit but

low in implicit evaluations reported the most variability in satisfaction across assessments.

Reactivity to daily partner negative behavior. Results supported Hypothesis 6 regarding implicit-explicit congruence predicting reactivity to partner negative behavior, with the predicted interaction emerging as significant for reactivity both within and across days. Within days, reactivity was strongest for those with discrepant attitudes, regardless of the direction of discrepancy. That is, reactivity was relatively stronger for those high on explicit and low on implicit as well as for those low on explicit and high on implicit evaluations. Looking across days, only participants with discrepant satisfaction (high explicit combined with low implicit) reported decreased satisfaction on days following partner negative behavior.

Furthermore, although this finding extrapolated beyond the observed range of the data, the model predicted that for individuals with the highest levels of congruence (high explicit and very high implicit), there would be a significant *positive* slope indicating that satisfaction would *increase* on the day after a partner reported a negative behavior. This is somewhat similar to a finding reported by Murray et al. (1998) that participants with high self-esteem responded to a threat to their self-worth by reporting greater confidence in their partner's acceptance (in contrast to those with low self-esteem, who derogated partners after a threat to their self-worth). It may be that individuals with congruent high satisfaction are so secure in their positive evaluations that they respond proactively to potential threats, leading to increased satisfaction the next day. This finding needs to be replicated, however, as the extremely high levels of explicit and implicit evaluations at

which the slope was estimated to become positive were not represented in the current sample.

Bias in perceiving a partner's negative behavior. Hypothesis 7 was not supported in that there was no significant interaction between implicit and explicit evaluations predicting directional bias (i.e., the tendency to under-report or over-report a partner's negative behavior relative to the partner's self-report). Although not relevant to hypotheses regarding implicit-explicit discrepancies, directional bias was significantly associated with explicit relationship satisfaction, such that those high on explicit satisfaction tended to report less negative behavior than the partner self-reported. This result is consistent with the argument that idealization and positive illusions may be adaptive in close relationships (e.g., Murray & Holmes, 1993; Murray et al, 1996).

There was also a significant interaction between implicit and explicit evaluations predicting tracking accuracy, suggesting that tracking accuracy was lowest for individuals with congruent high relationship satisfaction. This result is somewhat consistent with the reactivity findings in that individuals with congruent high relationship satisfaction are both less accurate in reporting their partner's negative behavior and less reactive to that behavior both within and across days. It may be that individuals with congruent high relationship satisfaction are so secure in their evaluations that they do not feel the need to attend to their partner's day-to-day negative behavior (resulting in both decreased tracking accuracy and decreased reactivity).

Change over time in explicit satisfaction. Finally, results were partially consistent with Hypothesis 8 in that implicit-explicit discrepancies predicted change over

time in satisfaction for wives, but not for husbands. Examining regions of significance for simple slopes involved in this interaction revealed that wives with congruent attitudes (high on both or low on both implicit and explicit evaluations) did not decline significantly in their satisfaction over the 1.5-year period examined. In contrast, wives with both patterns of discrepancy (high on explicit and low on implicit, or vice versa) declined significantly in satisfaction. Importantly, these results were significant after controlling for the moderators of implicit-explicit congruence identified earlier, so these associations cannot be explained by discrepancy serving as a proxy variable for these individual differences. These longitudinal effects may reflect the long-term consequences of other processes examined in this study. For instance, the greater reactivity to negative behavior observed for participants with highly discrepant attitudes may promote conflict and other problems that threaten the long-term health of the relationship. In contrast, the decreased reactivity and decreased attention to negative behavior (as evidenced by lower tracking accuracy) for individuals with congruent high relationship satisfaction may help buffer against factors that would otherwise affect their satisfaction.

Gender Differences

The gender differences for the key hypothesis tests examined in the current study were generally not significant, suggesting that these effects did not differ significantly across husbands and wives. Two exceptions, however, should be highlighted. As noted above, implicit-explicit congruence predicted variability in satisfaction over the 1.5-year follow-up period for husbands, but not wives, such that husbands with more discrepant attitudes tended to report more variability in their explicit satisfaction over biannual

follow-up assessments. Also, as noted above, implicit-explicit congruence predicted declines in satisfaction over time for wives, but not husbands. Although these gender differences were not predicted, they suggest that implicit-explicit discrepancies may be relatively more harmful for wives than husbands when examined longitudinally. In contrast, husbands with discrepant attitudes exhibited greater variability but did not exhibit steeper declines in satisfaction over time.

Directionality of Discrepancy

Another consideration that merits some discussion is the directionality of effects, particularly in regard to consequences of implicit-explicit discrepancies. In general, hypotheses compared congruent and discrepant attitudes; however, discrepant attitudes can take two forms: high explicit combined with low implicit or low explicit combined with high implicit. To the extent that effects are significant regardless of the direction of discrepancy, this suggests that the effects represent discrepancy per se. Consistent with this possibility, several results were significant regardless of the direction of discrepancy. For instance, wives with discrepant attitudes declined significantly in their satisfaction over time, regardless of whether they were high or low on explicit satisfaction. Similarly, the regions of significance for the interaction predicting same-day reactivity demonstrated that individuals with discrepant attitudes reacted more strongly to their partner's reports of negative behavior, regardless of the direction of discrepancy.

Two other interaction results yielded patterns that are more directional in nature. For instance, implicit-explicit discrepancy predicted next-day reactivity to partner negative behavior (e.g., reporting relatively more negative relationship evaluations the

day after a partner behaved negatively) only for those with high explicit satisfaction combined with low implicit satisfaction. For those with low explicit evaluations, implicit-explicit discrepancy was not associated with greater reactivity. Similarly, the significant interaction between implicit and explicit attitudes predicting variability in satisfaction for husbands yielded a result that was partially directional. While implicit-explicit discrepancy was significantly associated with variability for husbands with high explicit satisfaction, the effect of discrepancy was only marginally significant for husbands with low explicit satisfaction.

In both of these cases, the consequences of implicit-explicit discrepancies were relatively stronger for those with *high* explicit satisfaction. This is consistent with a theme from the introduction—that implicit-explicit discrepancies may reflect newlyweds' motivation to defensively deny internal doubts in order to maintain a sense of security in their marriage. These motivational forces are likely more relevant to the combination of high explicit and low implicit satisfaction than to the reverse pattern (low explicit and high implicit satisfaction). Nonetheless, individuals with this latter form of discrepancy still demonstrated significantly stronger same-day reactivity to negative behavior and (for wives) steeper declines in satisfaction over time

In the current study, the association between implicit and explicit evaluations was significantly negative for individuals very high in attachment avoidance. This suggests that the combination of high implicit and low explicit evaluations could reflect motivational factors driven by attachment avoidance. However, it seems unlikely that this would provide a general explanation for this pattern of discrepant attitudes and,

admittedly, this pattern of discrepancy is not well-explained by the current conceptual framework. Another possibility that was not examined in the current study is that individuals with high implicit but low explicit satisfaction have experienced a relatively recent change in their relationship that has affected their explicit but not implicit evaluations. This possibility is consistent with research suggesting that explicit attitudes change relatively more rapidly that implicit evaluations in response to new information (e.g., Gregg et al., 2006; Rydell & McConnell, 2006). Understanding the nature of implicit-explicit discrepancies for individuals with relatively low explicit satisfaction may require a more nuanced theoretical framework and will certainly require further study.

Limitations and Future Research

These results should be interpreted in light of several limitations that should be addressed in future research. First, the participants represented a convenience sample and consisted primarily of individuals who expressed interest in participating in a study regarding their marriage. Because the study collected data exclusively over the Internet, the sample also functionally excluded individuals without Internet access. As a result, the sample was relatively well-educated. The sample also included more Caucasian participants than are represented in the general population. Therefore, it is unknown if these results would generalize to more diverse or representative samples, or if these processes may be moderated by sample characteristics.

In addition to examining these processes in samples with greater demographic diversity, future research might also examine clinically relevant subgroups. In the current

study, participants were excluded for reporting certain problematic behavior patterns, such as domestic violence. Banse and Kowalick (2007) found that implicit and explicit partner evaluations were significantly and strongly positive correlated ($r = .62$) in a sample of women who had experienced domestic violence, but were not significantly correlated in samples of pregnant women or women who had recently fallen in love. Beyond some threshold of negativity, spouses might accept that their earlier idealization of their partner does not reflect the less rosy reality of their daily interactions—a possibility that could be examined in future research with more diverse samples.

Furthermore, the current study focused on implicit and explicit evaluations in the context of newlywed marriage—a time when couples may be particularly motivated to maintain a sense of security in their relationship. Because newlyweds tend to be relatively high on explicit relationship satisfaction, there may have been some restriction of range on explicit relationship satisfaction in the current sample. These results may therefore underestimate the effects that might be observed in samples with more variability in explicit relationship satisfaction. The current study also only examined a relatively brief window of time from the first year of marriage through 1.5 years of follow-up. Longer-term longitudinal research could not only examine whether the processes examined here are moderated by relationship stage, but could also examine how implicit and explicit evaluations shift over time in response to other time-varying relationship processes.

Another limitation is that the current study did not establish the specific relationship processes or mechanisms by which implicit-explicit discrepancies influence relationship functioning. The current results suggest that implicit-explicit discrepancies in

relationship evaluations are associated with greater reactivity, greater variability, and steeper declines in satisfaction over time. However, future research should more closely examine mechanisms that account for these effects. For instance, observational research could help identify mechanisms by which implicit-explicit discrepancies affect reactivity to daily behavior.

Similarly, future research should more carefully examine causality. As the current research used correlational methods, it is not possible to determine whether implicit-explicit discrepancies cause the effects observed here, or whether such discrepancies are simply indicators of other unmeasured processes. One possibility for establishing causality would be to use priming methods to manipulate the accessibility of positive or negative implicit evaluations. For instance, Dijksterhuis (2004) experimentally manipulated implicit self-esteem using a subliminal evaluative conditioning paradigm in which the word "I" was repeatedly subliminally paired with positive trait terms. This manipulation influenced how participants responded to negative intelligence feedback. Murray et al. (2011) used a similar evaluative conditioning procedure to temporarily activate implicit partner evaluations. Experimentally priming implicit evaluations could help to clarify the causal associations for implicit-explicit congruence and other variables examined in the current study. For instance, the effects of implicit-explicit discrepancies on reactivity could be examined by temporarily activating congruent or discrepant attitudes and examining behavior relevant to reactivity in a conflict discussion.

Finally, future research might examine these processes using different measures of implicit and explicit evaluations. For instance, the current study measured implicit

evaluations as relatively broad positive and negative associations with a partner, and these associations were compared to explicit evaluations of the *relationship* rather than the *partner*. These two types of measures were selected because they have been widely used in past research. However, the current results could partially represent the effects of discrepancies between different targets of evaluation (the relationship vs. the partner) in addition to discrepancies between implicit and explicit evaluations. Greater implicit-explicit congruence might be obtained by selecting measures that are more structurally similar (e.g., using an explicit measure that asks participants to report the degree to which they associate specific words with their partner, then using the same words across implicit and explicit measures; Payne et al., 2008). In addition to increasing implicit-explicit congruence, more closely matched measures may also be more sensitive to meaningful variability in implicit-explicit congruence. More nuanced results might also be obtained by using implicit measures that assess more specific aspects of relationship functioning, such as commitment or satisfaction with specific relationship domains.

Implications and Conclusion

Although the current research should be interpreted in light of the discussed limitations, the findings have broader implications for both research and practice. The current results suggest that positive implicit evaluations are not necessarily uniformly beneficial. Rather, the consequences of high implicit evaluations may depend on the level of explicit relationship satisfaction (and vice versa). For those with relatively low explicit relationship satisfaction, high implicit partner evaluations may be detrimental, promoting greater variability and reactivity. If the negative consequences of implicit-explicit

discrepancies observed in the current study are replicated in more diverse samples, these results could also potentially be applied to couples therapy. For instance, to the extent that discrepancies between implicit and explicit attitudes are more harmful than congruent patterns, therapy could focus on acknowledging and addressing discrepancies and helping couples identify and ameliorate the negative consequences of discrepant attitudes (e.g., greater reactivity to partner negative behavior).

In conclusion, the results of the current study suggest that divergence between implicit and explicit evaluations does not simply reflect measurement error, but is associated with individual differences relevant to the ability or motivation to attend to and accept rather than defensively deny one's automatically activated implicit evaluations. The form of ambivalence represented by discrepancies between implicit and explicit evaluations was associated with various maladaptive outcomes, including greater reactivity to partner negative behavior, greater variability in satisfaction, and steeper declines in satisfaction over time. Exploring the nature and consequences of discrepancies between implicit and explicit evaluations provides a unique perspective on motivational and relational processes by which newlywed couples evaluate their relationships and respond to the challenges inherent in early marriage.

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Footnotes

[1] The phrase "implicit ambivalence" (which Petty & Briñol, 2006, use to refer to discrepancies between implicit and explicit attitudes) should not be confused with the possibility of ambivalence existing purely at the level of implicit evaluations (i.e., simultaneously holding strong positive and negative automatic or implicit evaluations of the same attitude object). Rudman (2004) argued that implicit attitudes are strongly influenced by cognitive consistency principles (i.e., the tendency to maintain consonant evaluations of related objects), which might minimize ambivalence at the implicit level. Epstein (1998) similarly argued that ambivalence at the implicit level is rare in psychologically healthy individuals. Consistent with these arguments, Greenwald et al. (2002) found stronger support for consistency among sets of evaluations at the implicit than at the explicit level (see also Cvencek, Greenwald, & Meltzoff, 2012). Therefore, ambivalence (simultaneous positivity and negativity) might be less common at the implicit level than at the explicit level or across these two levels. The current research focused exclusively on the latter form of ambivalence that crosses the implicit and explicit levels.

[2] It is worth noting that several perspectives on implicit and explicit attitudes (i.e., the APE model and the MCM) do not assume that implicit attitudes operate completely outside of conscious awareness. Rather, the associative system underlying implicit attitudes likely operates *preconsciously*, and its output may occasionally be experienced as intuition (Jordan, Whitfield, & Zeigler-Hill, 2007), a vague sense of doubt or uncertainty (Briñol, Petty, & Wheeler, 2006), or a consciously accessible affective state

(Gawronski & Bodenhausen, 2006). As a result, implicit attitudes that conflict with explicit attitudes might occasionally enter awareness.

[3] Although these studies demonstrate that social desirability is less likely to influence implicit than explicit evaluations, prior work also suggests that the minimal congruence typically observed between implicit partner evaluations and explicit relationship satisfaction is not completely due to socially desirable responding. Banse et al. (2013) found that social desirability did not significantly moderate the association between implicit and explicit partner evaluations. Thus, participants who report more positive explicit relationship satisfaction relative to their implicit partner evaluations are not necessarily doing so because of impression management.

[4] Other patterns of implicit and explicit evaluations are possible—this model simply represents a subset of patterns that seem particularly relevant to the nature and time course of implicit-explicit discrepancies in newlywed marriage. These four patterns all represent a situation in which one set of implicit evaluations (positive or negative) is primary. Although it is theoretically possible for individuals to have strong automatic associations with both positive and negative concepts (representing ambivalence at the implicit level), one valence is likely to be primary (Petty & Briñol, 2006) due to the nature of spreading activation and cognitive consistency principles. Another potential pattern is one of indifference at the implicit level, with weak positive and weak negative implicit evaluations. However, this pattern also seems rare in the context of newlywed marriage, given that highly interdependent relationships are likely to elicit strong emotional reactions (Fitness, 2006). In addition to the pattern of explicit ambivalence

depicted in Figure 1c, an individual might deny the validity of their positive and negative

implicit evaluations of a romantic partner (that is, deny that the partner is either good or

bad), yielding a pattern of indifference at the explicit level. Although this pattern might

be common in marriage, it is not discussed here as it is not particularly relevant to the

current focus on implicit-explicit congruence. Finally, it should be noted that some

couples may exhibit a pattern of discrepancy such that explicit dissatisfaction is

combined with positive implicit partner evaluations. This form of discrepancy may occur

if a sudden change in the relationship causes explicit attitudes to become negative before

implicit evaluations can "catch up" to changing patterns of interaction. In the current

work, the term "discrepant relationship satisfaction" refers primarily to the combination

of positive explicit and negative implicit attitudes rather than the inverse pattern.

[5] A careful inspection of the methods used by DeHart et al. (2004) reveals a

fundamental flaw that calls this interpretation of the results into question. In Study 1 of

this paper (the only study of two that focused on romantic relationships), the majority of

the sample (88%) was married. To measure implicit partner evaluations, DeHart et al.

used a name-letter task (see LeBel & Campbell, 2009) to assess the degree to which

participants rated their partner's initials more positively than those initials were rated by

other participants. Because they averaged scores across ratings for the partners' first and

last initials (despite the fact that the majority of the sample, being married, would likely

share the second initial), this measure was likely confounded with implicit self-esteem.

Furthermore, the authors state that their findings "were stronger for romantic partners'

last name initials" (DeHart et al., 2004, p. 143). Therefore, this finding may actually

represent the effects of implicit-explicit self-esteem discrepancies on current relationship satisfaction, and their meaning for the potential moderating role of self-esteem on correspondence between implicit and explicit partner evaluations is unclear.

[6] The sole exception may be Murray et al. (2013, Study 3) who found significant 3-way interactions between self-regulatory capacity, implicit partner evaluations (which they call "impulsive trust") and an explicit measure of "reflective trust" (self-reports of feeling loved, accepted, and viewed positively by one's partner, which were aggregated across 14 daily diary surveys). Although their specific pattern of results is complex, one finding was that for women with low self-regulatory capacity (for whom implicit evaluations should be particularly influential), impulsive trust buffered against the negative effects of low reflective (explicit) trust on change in commitment over time. Given their focus on trust, self-regulatory resources, and commitment, these findings are not directly applicable to the current hypotheses and so are not discussed further. Nonetheless, this work demonstrates the utility of examining implicit-explicit interactions.

[7] This scoring approach differs from Lee et al. (2010), who calculated separate indices for *partner-good* and *partner-bad*, entering their main effects and interaction in all analyses. I followed the scoring procedure used by Nosek & Banaji, 2001, yielding a single implicit partner evaluation score. This approach simplifies analyses, using fewer degrees of freedom. By focusing on a single implicit evaluation score (rather than modeling implicit positivity and negativity separately), the current analyses did not take into account the possibility of ambivalence at the implicit level (i.e., simultaneously

holding strong positive and negative automatic or implicit evaluations of the same attitude object). As noted previously (see footnote 1), there is reason to believe that cognitive consistency principles might minimize the tendency to hold ambivalent attitudes purely at the implicit level. Additionally, the *partner-good* and *partner-bad* scores on the GNAT share substantial method variance (Lee et al., 2010, reported *positive* correlations of .45-.46 between them, despite their opposing valence), and this method variance cannot be easily distinguished from ambivalence. More to the point, the focus of the current research is on discrepancies across implicit and explicit evaluations and not on ambivalence at either the implicit level or the explicit level.

[8] In another model, the three-way interaction was examined between attachment anxiety, attachment avoidance, and implicit evaluations. The three-way interaction was not significant ($b = 0.02$, $p = .95$).