Journal of Personality and Social Psychology
2014, Vol. 107, No. 4, 638–656

0022-3514/14/$12.00 http://dx.doi.org/10.1037/a0037298

Accuracy and Bias in Self-Perceptions of Responsive Behavior: Implications for Security in Romantic Relationships

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The current research examined self-perception of responsive behavior as a process through which perceivers who highly value romantic partners generate security that they are valued by those partners. People hold naive theories that their responsive behavior elicits positive sentiments from others, such as satisfaction, positive regard, and commitment, and they believe their unresponsive behavior elicits negative sentiments. Accordingly, 2 dyadic behavioral observation studies, one involving conflict interactions (Study 1) and one involving support interactions (Study 2), suggested that people who value partners achieve security that they are valued by their partners through both accurate and biased self-perceptions of responsive behavior. Perceivers who valued partners accurately perceived their more responsive behavior enacted toward partners, which bolstered their confidence that they were valued by partners (*accurate self-perception*). In addition, perceivers who valued partners had biased and exaggerated perceptions of their own responsive behavior, which also bolstered their perceptions of being valued by partners (*biased self-perception*). Examination of memories of responsive behavior 2 weeks and 6 months following interactions (Study 2) suggested that perceivers' memories of their own responsive behavior derived from a mix of accuracy and bias, which predicted changes in relationship security over time. These findings underscore the importance of perceivers' representations of their responsive behavior, both accurate and biased, as determinants of their own relationship security.

Keywords: responsiveness, security, self-perception, interpersonal behavior, romantic relationships

When people want a close, communal relationship with a particular partner and have strong pro-relationship motivations, as suggested by their strong relationship commitment (Rusbult & Buunk, 1993), care for the partner's welfare (Mills, Clark, Ford, & Johnson, 2004), or positive regard for the partner (Murray, Holmes, & Griffin, 2000), they usually want the partner to reciprocate these sentiments (Clark, Dubash, & Mills, 1998; Holmes & Rempel, 1989; Lemay, Clark, & Feeney, 2007; Wieselquist, Rusbult, Foster, & Agnew, 1999). This reciprocation facilitates goals to maintain the relationship and satisfies evolved needs to forge stable and caring bonds (Baumeister & Leary, 1995). When partners do not reciprocate, these positive sentiments toward partners can exacerbate pain and loss (Lemay, Overall, & Clark, 2012; Murray, Holmes, & Collins, 2006; Wieselquist et al., 1999), leading many people to feel increasingly vulnerable as they become more attached (Murray et al., 2006). Hence, people must manage the vulnerability that co-occurs with their attachments and achieve a sense that these valued partners reciprocate their positive sentiments, and they often adopt a variety of cognitive and behavioral strategies to meet these goals. The current research examines novel intrapersonal processes that routinely assist people who value partners in generating confidence that they are valued in return. These processes involve the perception that one has enacted responsive behavior toward partners. One of the strongest predictors of relationship closeness, satisfaction, and longevity is the perception that partners are responsive to one's needs, including feeling understood, valued, and cared for by partners (Gable, Gonzaga, & Strachman, 2006; Lemay et al., 2007; Murray et al., 2000; Reis, Clark, & Holmes, 2004). Hence, perceivers may feel more secure that they are valued by partners when they enact (and believe they enact) responsive behavior toward partners. A guiding model is presented in Figure 1, and the model paths are described in detail below.

Paths A and B: Accuracy in Perceptions of Own Responsive Behavior

Perceivers who highly value relationships with partners (i.e., perceivers with positive regard for partners, satisfaction with partners, commitment to relationships with partners, or care for partners' welfare) may believe that they enact responsive behaviors toward partners during social interaction. They may believe this, in part, because they actually do enact these behaviors. Indeed, a number of investigations using relatively objective indicators of behavior suggest that perceivers with these positive sentiments

This article was published Online First August 18, 2014.

This research was supported by National Science Foundation Research Grant BCS 1145349. I thank members of the Interpersonal Processes Lab, University of New Hampshire, for their assistance with data collection and coding. Other findings from Study 2 have been published elsewhere (Lemay & Melville, 2014; Lemay & Neal, 2013, 2014), but all of the findings reported in the current article have not been previously reported. These other articles examined predictors and consequences of support-seekers' perceptions, whereas the current article examines predictors and consequences of support-providers' perceptions.

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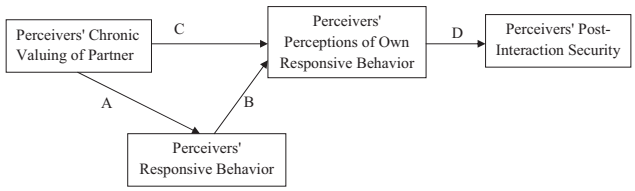

Figure 1. Guiding conceptual model of accurate and biased self-perceptions of behavior and implications for relationship security. Letters indicate model paths.

toward their partners do behave in more responsive ways toward their partners (e.g., Collins & Feeney, 2000; Feeney & Collins, 2001; Gill, Christensen, & Fincham, 1999; Mills et al., 2004; Weiss & Heyman, 1990). This effect of perceivers' valuing of partners on their actual responsive behavior toward partners is represented by Path A in Figure 1. In turn, with some self-awareness, perceivers who behave in a responsive manner toward their partners are likely to be aware that they behaved in this way. In other words, perceivers' perceptions of their own responsive behavior may be partially accurate. The effect of perceivers' responsive behavior on their perceptions of that behavior is represented as Path B in Figure 1. Consistent with this hypothesized path, a number of studies on accuracy of self-assessments suggest that self-perceptions of behavior have a kernel of truth, as demonstrated by significant associations of self-perceived behavior with judgments made by acquaintances, experts, and objective observers (Gosling, John, Craik, & Robins, 1998; Hall, Murphy, & Mast, 2007; John & Robins, 1994; Kolar, Funder, & Colvin, 1996; Vazire & Mehl, 2008; for a review, see Vazire & Carlson, 2010). The current research extends this work, most of which has examined accuracy with regard to self-perceptions of personality, to examine accuracy of self-perceptions of interpersonal responsiveness within interactions with romantic partners.

Taken together, these two paths constitute an indirect effect of perceivers' chronic valuing of their partners on their perceptions of their own responsive behavior via their actual behavior (Path A $\times$ B). In other words, perceivers who value relationships with partners perceive that they enacted responsive behavior partially because these perceivers do, in fact, enact responsive behavior and, to some extent, accurately perceive that they have done so. When Jack has strong feelings of satisfaction, care, or commitment toward Jill, he may treat Jill in a warm or supportive manner and accurately recognize that he behaved in this way.

Path C: Bias in Perceptions of Own Responsive Behavior

Although perceptions of own responsive behavior may be partially accurate, perceivers' self-perceptions of enacting responsive behavior toward partners also may be biased by their sentiments toward partners. This effect is represented as Path C in Figure 1. Independently of how they actually behaved, perceivers with positive thoughts and feelings about partners may believe that they behaved in a responsive manner toward partners, whereas perceivers with negative thoughts and feelings may believe that they behaved in an unresponsive manner toward partners. In other words, perceivers with pro-relationship thoughts, feelings, or motivations may give themselves "extra credit" for having these sentiments when evaluating their own behavior. Given that outsiders lack insight into perceivers' motivations or feelings, perceivers may not get this bonus when their behavior is evaluated by outsiders. As a result, this bias may lead perceivers to exaggerate their own responsive behavior relative to how it is perceived by others. Similar processes have been demonstrated in other domains. For example, self-perceptions of morality and achievement are biased by perceivers' aspirations and intentions, leading perceivers with good intentions and lofty aspirations to evaluate their own behavior more generously relative to how they are perceived by outsiders (see Helzer & Dunning, 2012; Kruger & Gilovich, 2004). The current research tests whether similar biases extend to the domain of interpersonal responsiveness toward romantic partners.

The operation of this bias would suggest that people perceive their own behavior toward partners in a manner that is consistent with their preexisting thoughts and feelings about partners. Hence, this bias is termed a *confirmation bias* in the current research. Confirmation biases occur when perceivers' cognitive processes operate in ways that produce conclusions that are consistent with perceivers' existing beliefs (Nickerson, 1998). Perceivers may have confirmation-biased perceptions of their own behavior for both cognitive and motivational reasons. In general, people have richer, more accessible, and more distinctive representations of their own subjective thoughts, feelings, and motivations relative to their own observable behavior (Andersen, Glassman, & Gold, 1998; Jones & Nisbett, 1971). As a result, perceivers' sentiments may act as a powerful anchor when they try to discern their behavior, such that perceptions of their own responsive behavior toward partners conform to their sentiments toward partners. That is, when Jack infers how he behaved toward Jill, he may assume he treated her with warmth and kindness because his own positive feelings about Jill are very clear to him, whereas the data he has on his own behavior are relatively impoverished, and therefore his behavior is easily confused with his sentiments. However, other people do not have access to Jack's internal experiences. Therefore, Jack's behavior is unlikely to be perceived as positively through others' eyes.

These biased perceptions of behavior also may arise as a result of motivations to maintain consistency in beliefs about the self (see Aronson, 1999; Swann, Griffin, Predmore, & Gaines, 1987; Swann & Read, 1981). People with well-defined and importantly held self-perceptions readily generate behavioral evidence that supports their self-perceptions, and they tend to resist contradictory information (Greenwald, 1980; Markus, 1977; Swann & Ely, 1984). They also selectively attend to information that confirms existing self-beliefs, recall information that is consistent with these beliefs, and interpret information in a manner that maintains these beliefs (Beyer, 1990; Beyer & Bowden, 1997; Greenwald & Pratkanis, 1984; Nickerson, 1998; Shrauger, 1975; Swann, 1987). These processes may occur with regard to perceptions of enacting responsive behavior in romantic relationships. When perceivers perceive themselves as caring for their partner, having positive regard or feelings for the partner, or being committed to the partner, they may strive to see their behavior as consistent with this relational sense of self (see Andersen & Chen, 2002).

Moreover, perceivers who highly value partners may perceive that they behaved in a responsive manner toward partners as a way

of bolstering their perception that they have contributed to maintaining a high-quality and stable relationship. Indeed, the operation of other biases in perceiving relationships suggests that perceivers are motivated to hold positive perceptions of relationships they care about (Lemay et al., 2007; Lemay & Neal, 2013; Murray, Holmes, & Griffin, 1996; Rusbult, Lange, Wildschut, Yovetich, & Verette, 2000; Simpson, Ickes, & Blackstone, 1995). That is, when a caring and committed Jack infers how he behaved toward Jill, he may assume he treated her with warmth and kindness because this conclusion contributes to desired experiences of self-consistency and relationship maintenance.

How could this bias exist if research suggests that self-perceptions are accurate, as described above? Research on accuracy of self-knowledge suggests that accuracy accounts for only modest amounts of variance in self-perceptions of behavior (Hall et al., 2007; Vazire & Carlson, 2010), and many studies suggest that self-perceptions of behavior or personality can be less accurate than judgments made by other people (e.g., Gosling et al., 1998; John & Robins, 1994; Kolar et al., 1996; Vazire & Mehl, 2008). Self-perceptions of behavior seem especially low in accuracy when the behaviors are related to the domain of agreeableness (Gosling et al., 1998), which involves qualities such as kind, sympathetic, warm, compassionate, and helpful. This domain overlaps with interpersonal responsiveness, suggesting that self-perceptions of responsive behavior may also be low in accuracy. Hence, accuracy effects may be sufficiently modest to allow for the coexistence of bias. Notably, the large body of work on accuracy and bias in self-perceptions of behavior has tended to ignore the context of close interpersonal relationships, and it has overlooked the possibly important role of perceivers' sentiments toward partners and pro-relationship motivations in shaping their perception of enacting interpersonally important behaviors, such as responsiveness. The current research fills these gaps.

Path D: Implications of Perceptions of Responsive Behavior for Perceivers' Relationship Security

Perceivers' perceptions of their responsive behavior may shape their security in partners' sentiments (see Path D in Figure 1). Perceivers may have naive theories that their responsive behavior elicits positive sentiments in their partners, whereas their unresponsive behavior elicits negative sentiments. Consistent with this argument, a preliminary study found that people strongly believe that their responsive behavior elicits satisfaction, commitment, and positive regard from others, whereas their unresponsive behavior elicits reduced satisfaction, reduced commitment, and negative regard from others. These theories may be rooted in actual experience, as responsiveness does tend to elicit more positive sentiments in others (Clark & Lemay, 2010; Reis et al., 2004). Given the existence of such theories, perceivers who judge their own behavior as responsive may infer their partners' high satisfaction, positive regard, and commitment, and perceivers who judge their own behavior as unresponsive may believe that partners now harbor more negative sentiments. This may be the case even when partners do not actually have these reactions, as perceivers' perception that they enacted particular behaviors may be sufficient for them to infer a corresponding response in their partner. Perceivers may focus too much on their own behavior and neglect other pertinent information (see Gilovich, Medvec, & Savitsky, 2000; Savitsky, Epley, & Gilovich, 2001). For example, overly focused on his own generosity, Jack may assume that Jill feels satisfied with him after he buys her a gift.

This prediction is consistent with self-perception theory, which posits that people reflect on their own behavior to infer their qualities (Bem, 1972). Similarly, perceivers may reflect on their own behavior to discern how their partners feel about them (see Kenny & DePaulo, 1993), and such inferences should be most proximally driven by perceivers' perceptions of their behavior, whether accurate or biased. Prior research has not examined whether accurate and biased self-perceptions of behavior have implications for relationship security. However, some studies are consistent with this view. Studies that have manipulated perceivers' behavior toward targets have demonstrated that perceivers feel more secure in targets' positive regard and attraction when perceivers were instructed to behave in a prosocial manner toward targets than when they were instructed to behave in neutral or cold ways (Albright, Forest, & Reiseter, 2001; Lemay & Clark, 2008). In addition, Clark and Grote (1998) argued that, when people enact behaviors to meet the needs of their partner, they should feel that they have strengthened their relationship, which should make them feel more secure in their partner's future responsiveness. In other words, people perceive their own responsive behavior, which then gives them reason to believe that they bolstered their partner's care. The current research is the first to test such a process, and it adds that the perceptions of responsive behavior that drive this inference may be accurate or biased.

The hypothesized effect of perceivers' self-perceptions of behavior on their relationship security implies two indirect pathways, one via accurate self-perception and one via biased self-perception, through which perceivers who value partners foster their own relationship security. First, perceivers' who value partners may actually enact responsive behaviors. These behaviors may bolster their relationship security because, to some extent, perceivers accurately perceive that they were responsive, which gives them confidence that they are valued by partners (the A $\times$ B $\times$ D indirect effect in Figure 1). This effect depends on perceivers accurately perceiving their own behavior and then making an inference about how this behavior affected their partners. Second, perceivers who value partners may overestimate their responsive behavior through the confirmation bias described earlier, and these biased perceptions of responsive behavior may then give perceivers reason to feel confident that partners value them (the C $\times$ D indirect effect in Figure 1). This effect depends on perceivers having biased perceptions of their own behavior and then, again, inferring how this perceived behavior affected their partners. An objective of the current research was to test for the operation of these security-maintenance processes. Prior research has not demonstrated that perceivers who value partners bolster their relationship security through such processes.

Extending the Model to Memory

In addition to examining self-perceptions of responsive behavior immediately following social interaction, the current research examined subsequent memories of responsive behavior. Several findings suggest that perceivers tend to remember their pasts in ways that are consistent with their current motives, knowledge, or attitudes (e.g., Greenwald, 1980; Ross, 1989; Sanitioso, Kunda, & Fong, 1990).

Especially relevant to the current research are findings suggesting that people exhibit a consistency effect when recalling their sentiments about their romantic partner, exaggerating the extent to which their prior feelings of liking and love for their partner were consistent with their current sentiments (McFarland & Ross, 1987). Similarly, perceivers may have biased memories regarding their own responsive behavior. Perceivers may remember their behavior as being consistent with their sentiments about their partner. In turn, memories of being responsive to partners may give them confidence that they are valued by their partners.

Current Research

The current research included two behavioral observation studies that tested the model depicted in Figure 1 within the context of romantic relationships. This model was examined in the context of conflict interactions in Study 1 and that of social support interactions in Study 2. Both contexts are relevant to feelings of relationship security and have the capacity of evoking responsive behavior. In Study 2, the model was extended to memory.

Perceiver's chronic valuing of partners was assessed with several indicators, including positive regard for partners, satisfaction with partners, commitment to relationships with partners, and care for partners' welfare. Each of these constructs reflects positive evaluations or motivations regarding maintaining close bonds with partners, and these constructs have been associated with other security-enhancing processes in prior research (e.g., Johnson & Rusbult, 1989; Lemay et al., 2007; Lemay & Melville, 2014; Lemay & Neal, 2013; Rusbult et al., 2000; Wieselquist et al., 1999; Yoo, Clark, Lemay, Salovey, & Monin, 2011).

Testing the model described above requires the separate measurement of perceivers' perceptions of their behavior and perceivers' actual behavior. There is no single perfect method of measuring actual behavior, especially with regard to complex behaviors such as interpersonal responsiveness. Hence, two indicators were used to measure perceivers' actual behavior, including romantic partners' reports of perceivers' behavior and judgments of perceivers' behavior made by a team of objective observers. These two indicators have distinct advantages. Partners' perceptions of perceivers' behavior may capture perceivers' responsiveness that is understood only between the two partners, given their unique relationship history and shared understanding, which cannot be detected by outsider observers (Collins & Feeney, 2000). However, judgments by objective observers have the advantage of being relatively immune to the positivity biases that may pervade partners' judgments of their relationships (Lemay et al., 2007; Murray et al., 1996). Moreover, both of these indicators have a history of being used as accuracy benchmarks in research on accuracy of self-assessments (e.g., Gosling et al., 1998; Hall et al., 2007; John & Robins, 1994; Kolar et al., 1996; Robins & Beer, 2001; Vazire & Mehl, 2008).

The current research focuses on cognitive processes that bolster perceivers' relationship security. However, relationship security also may be bolstered by interpersonal processes involving reactions from partners. When perceivers enact responsive behaviors toward partners, partners may respond with more positive relationship sentiments. In turn, perceivers may detect that partners have these positive sentiments. Consistent with this theorized process, a number of studies suggest that responsive behavior elicits partners' positive relationship sentiments, which are detected (e.g., Feeney & Collins, 2003; Gable, Reis, Impett, & Asher, 2004; Lemay et al., 2007; Reis et al., 2004; Wieselquist et al., 1999). Given that it could serve as an alternative explanation for some of the predicted effects, statistical analyses controlled for partners' actual sentiments after the interaction.

Prior research suggests that people with high trait self-esteem are especially likely to exhibit self-enhancement biases (Brown, Collins, & Schmidt, 1988; Brown, Dutton, & Cook, 2001; Campbell, 1986; Tice, 1991). In contrast, the model tested in the current research proposes that positive sentiments toward the partner, rather than toward the self, drive exaggeration of one's responsive behavior. To test this notion and to be sure that self-esteem does not function as a third variable, self-esteem was measured and controlled in both studies.

Study 1

In Study 1, the model depicted in Figure 1 was tested within the context of conflict interactions with romantic partners. Participants completed pretest questionnaires, engaged in an observed interaction with their partners in which they discussed a significant conflict in their relationships, and then completed additional questionnaires.

Method

Participants. Participants included both members of 116 heterosexual romantic couples (M_{age} = 22.11 years; SD = 5.99). Participants were recruited from a psychology participant pool as well as through advertisements placed in local newspapers, on a university campus, and on local in-person and Internet bulletin boards. Relationships were predominantly described as dating relationships (78%) or engaged and marital relationships (17.8%). Participants received financial compensation or partial fulfillment of course requirements in their psychology course in exchange for participation. Participants were predominantly Caucasian (83.7%), but some participants were Asian (5%), African American (5.9%), or Hispanic (1.8%).

Procedure. Participants arrived at the laboratory with their romantic partners. They were separated to complete the preinteraction measures described below (in addition to measures not relevant to this article).[1] Then, participants completed the conflict task. The procedures were adapted from prior research on observed conflict interactions (Gottman, 1979; Simpson, Rholes, & Phillips, 1996). Participants were asked to independently generate three to five issues that were a source of significant and unresolved conflict in their relationship with their partner. Using the lists generated by both couple members, the couple members jointly identified the most significant unresolved problem. The researcher then instructed the couples to discuss this issue, giving them the following instructions: "Remember what you were arguing about and why you were upset with your partner. Remember what you were

[1] The additional measures included measures of self-control, need to belong, attachment insecurity, individual differences in interpersonal value and desire to be valued, relationship-specific attachment insecurity, implicit theories of relationships, compassionate and self-image goals, perceptions of the partner's insecurity, and tendencies to monitor the partner's sentiments. These constructs are not directly related to the current research.

thinking about and how you felt during the argument. After remembering these things, we would like each of you to tell the other what is it about his or her attitudes, habits, or behaviors that bothers you." Participants were given 10 minutes to discuss the issue with their partner while being recorded. After the interaction, participants returned to separate rooms and completed an additional questionnaire containing the post-interaction measures described below. They were then fully debriefed.

Preinteraction measures.

Chronic valuing of partners and chronic perception of the partner's valuing. Participants completed several measures of their chronic sentiments toward partners, including relationship satisfaction (e.g., "I feel satisfied with our relationship"; four items; Cronbach's $\alpha = .95$), relationship commitment (e.g., "I am committed to maintaining my relationship with him/her"; five items; Cronbach's $\alpha = .86$), care for the partner (e.g., "I care for his/her needs"; five items; Cronbach's $\alpha = .77$), and regard for the partner (e.g., "He/she has a number of good qualities"; five items; Cronbach's $\alpha = .83$). These items were adapted from other measures of care, satisfaction, and self-evaluation (Mills et al., 2004; Rosenberg, 1965; Rusbult, Martz, & Agnew, 1998). Items were completed on 9-point response scales (1 = *extremely disagree*; 9 = *extremely agree*). Scores on the four measures were strongly correlated (Cronbach's $\alpha = .88$), and they were averaged to create a composite index of chronic valuing of partners for use in the primary analyses.

Participants completed analogous items to assess chronic perceptions of the partner's satisfaction (e.g., "He/she feels satisfied with our relationship"; Cronbach's $\alpha = .94$), commitment (e.g., "He/she is committed to maintaining our relationship"; Cronbach's $\alpha = .83$), and regard (e.g., "He/she thinks I have a number of good qualities"; Cronbach's $\alpha = .83$). Items were completed on the same response scales. Once again, scores on these measures were strongly correlated (Cronbach's $\alpha = .85$), and they were averaged to create a composite index of chronic security in the partner's valuing.

Self-esteem. Participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965) using 9-point response scales (1 = *extremely disagree*; 9 = *extremely agree*; Cronbach's $\alpha = .92$).

Post-interaction measures.

Perceptions of partner's and own responsive behavior. After the conflict interaction, participants completed six items assessing perceptions of the partner's responsive behavior during the interaction (e.g., "How considerate and respectful was he/she"; "How warm and affectionate was he/she"; "How concerned about your needs and feelings was he/she"; "To what extent did he/she express positive views of you or your relationship"; "To what extent did he/she ask about your point of view"; "To what extent was he/she listening attentively to your view of things"). Responses were made on 9-point response scales (1 = *not at all*; 9 = *extremely*) and were averaged to create an index of perceptions of the partner's responsive behavior (Cronbach's $\alpha = .86$). In addition, participants completed an analogous set of six items to assess perceptions of their own responsive behavior during the interaction (e.g., "How considerate and respectful were you"; Cronbach's $\alpha = .82$) using the same response scales.

Post-interaction security and valuing of partners. After the interaction, participants completed four measures assessing their security in their partner's sentiments, including perceptions of the partner's satisfaction (e.g., "He/she feels satisfied with our relationship"; four items; Cronbach's $\alpha = .96$), perceptions of the partner's regard (e.g., "He/she feels that I have a number of good qualities"; five items; Cronbach's $\alpha = .89$), and perceptions of the partner's commitment (e.g., "He/she wants our relationship to last for a very long time"; Cronbach's $\alpha = .86$). Participants were instructed to complete these items with regard to their perceptions "right now." Items were completed on 9-point response scales (1 = *extremely disagree*; 9 = *extremely agree*). In addition, participants completed three items assessing their perceptions of being valued by the partner during the interaction ("loved," "accepted," "valued") using 9-point response scales (1 = *not at all*; 9 = *extremely*). Scores on these four measures were highly correlated (Cronbach's $\alpha = .88$), and so they were averaged to create a composite index of post-interaction relationship security for use in primary analyses.

Participants also completed analogous measures of their own satisfaction (e.g., "I feel satisfied with our relationship"; four items; Cronbach's $\alpha = .96$), regard for the partner (e.g., "He/she has a number of good qualities"; five items; Cronbach's $\alpha = .90$), and commitment (e.g., "I want our relationship to last for a very long time"; five items; Cronbach's $\alpha = .89$) following the interaction. Items were completed on identical response scales. Again, scores on these measures were highly correlated (Cronbach's $\alpha = .92$), and so they were averaged to create a composite index of post-interaction valuing of partners.

Observers' ratings of interactions. A panel of 10 coders viewed the recorded interactions and rated each participant's behavior using the same items and response scales that participants completed to measure perceptions of their own and partner's responsive behavior (e.g., "How considerate and respectful was the participant"). Intercoder reliability was high for each item (Cronbach's αs ranged from .80 to .87; $M_{\alpha} = .84$). Ratings on the same item by the multiple coders were averaged across the coders. In turn, ratings were averaged across the six items assessing responsive behavior to create an objective index of participants' responsive behavior during the interaction (Cronbach's $\alpha = .95$). To minimize potential carryover effects of the partner's behavior, each video displayed only one of the dyad members and coders rated individual participants in a random order. Observers' ratings of participants' behavior were strongly correlated with their partners' ratings of participants' behavior, $r(224) = .40$, $p < .001$, and so these scores were averaged to create a composite index of participants' behavior for use in most analyses.

Results

In describing the results, we will use the term *perceivers* to refer to participants who make judgments of their own responsive behavior. The term *partners* will be used to refer to their romantic partners. However, this data set involved interchangeable dyads (as described below, gender did not play a strong moderating role), and so all participants provided data for both "perceiver" and "partner" variables. These labels are used only to clarify the nature of the effects being modeled. Data analysis proceeded in the following manner: First, analyses were conducted to examine whether perceivers who valued partners exaggerated their own responsive behavior relative to the index of their actual behavior

(the aggregate perception of perceivers' behavior by partners and observers). Second, a path model examined accuracy and bias in perceivers' perceptions of their own responsive behavior, as well as implications of accuracy and bias for change in perceivers' relationship security. Finally, alternative explanations for these effects were examined.

Exaggerated perceptions of responsive behavior. Did perceivers who highly valued their partners exaggerate their own responsive behavior? To answer this question, we tested simultaneous linear equations using the AMOS program (see Murray et al., 2000). The model estimated two equations, one examining the effects of perceivers' valuing of partners on their own responsive behavior (as perceived by partners and observers) and one examining the effect of perceivers' valuing of partners on their perceptions of their own responsive behavior. Slopes and intercepts were estimated for each equation and were constrained to be equal across male and female partners.[2] Figure 2 presents both regression equations. As indicated in this figure, perceivers' valuing of partners predicted perceivers' perceptions of their own responsive behavior ($b = .64$) more strongly than it predicted the index of perceivers' actual responsive behavior ($b = .32$). A nested chi-square test confirmed that constraining these two regression slopes to be equal resulted in a significant decrement in model fit, $\chi^2(1) = 14.04$, $p < .001$, suggesting that these associations are indeed different. Hence, perceivers' sentiments did seem to predict their subjective perceptions of their behavior more than it predicted their actual behavior (as outsiders perceived it). As demonstrated in Figure 2, the gap between perceivers' perceptions of their responsive behavior and the index of their actual behavior increased along with increases in perceivers' valuing of partners, suggesting that perceivers who valued partners were more likely to exaggerate their responsive behavior. In other words, perceivers seemed to give themselves more "credit" for their positive sentiments when evaluating their own behavior than did outsiders.

Path analysis. A path model (using the AMOS program) was constructed to examine the processes through which perceivers' chronic valuing of partners predicted perceivers' perceptions of their own responsive behavior, as well as implications of these perceptions for change in perceivers' feelings of relationship security. Given that gender differences were not significant, coefficients were pooled across male and female partners through the use of equality constraints. A residual approach was used to create an index of perceivers' post-discussion relationship security that was independent of their chronic security and partners' actual sentiments, although all effects described below were replicated when raw relationship security scores were used instead of residual scores. Perceivers' post-discussion relationship security was regressed on perceivers' chronic relationship security measured before the interaction and partners' post-discussion sentiments toward perceivers. The unstandardized residuals from this analysis were saved and used as an index of change in perceivers' relationship security. Positive residuals suggest that perceivers felt more secure following the interaction than what could be predicted on the basis of their preinteraction security or on the basis of partners' actual sentiments following the interaction.

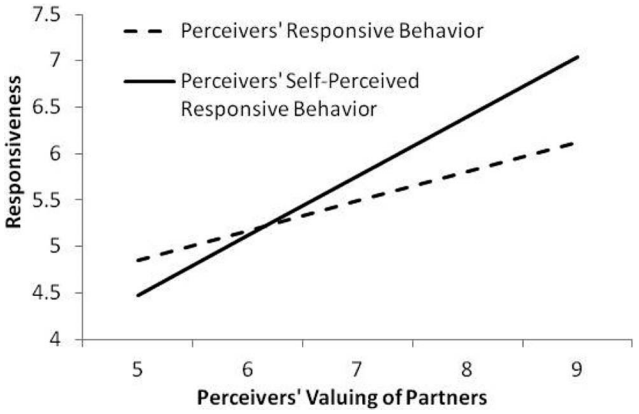

Figure 2. Effects of perceivers' valuing of partners on perceivers' responsive behavior and perceptions of responsive behavior (Study 1).

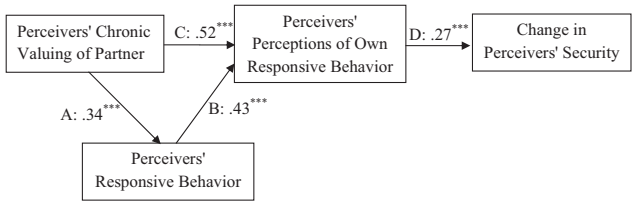

Figure 3. Results of path analysis (Study 1). Coefficients are unstandardized; letters indicate model paths. *** $p < .001$.

The model paths and unstandardized coefficients are presented in Figure 3.[3] Path A represents an effect of perceivers' chronic valuing of partners on the index of perceivers' responsive behavior. The significant positive coefficient indicates that perceivers behaved in a more responsive manner, as judged by partners and observers, when they valued their partners, consistent with expectations. In turn, Path B represents an effect of perceivers' responsive behavior on perceiver's perceptions of that behavior. The significant positive coefficient for this path indicates accuracy: Perceivers perceived that they enacted responsive behavior when they did, in fact, enact responsive behavior (according to partners and observers). Path C represents the direct effect of perceivers' valuing of partners on perceivers' perceptions of their own behavior, which was significant. Independently of perceivers' behavior as observers and partners saw it, perceivers who valued partners believed that they enacted more responsive behavior. This effect supports predictions of a confirmation bias in perceivers' judgments of their own responsive behavior.

Path D, the link from perceivers' perceptions of their own responsive behavior to the residual index of change in their relationship security, was also significant, suggesting that perceivers who believed they enacted responsive behavior felt more confident

[2] Correlations of variables across the two partners were modeled to account for potential dyadic interdependence. As a result, the only sources of model misfit were the equality constraints placed across male and female participants. This model fit the data well, $\chi^2(4) = 5.46$, *ns*; RMSEA = .057; NNFI = .98; suggesting similar results for men and women.

[3] Correlations of variables across the two partners were modeled to account for potential dyadic interdependence. These correlations are not presented in the path diagram to maintain simplicity. This model was a good fit to the data, $\chi^2(8) = 6.67$, RMSEA = 0, NNFI = 1.

that they were valued by partners following the interaction. Given that this analysis used a residual index of change in relationship security, this effect cannot be explained by perceivers' chronic levels of security or their partners' actual sentiments following the interaction.

Additional analyses were conducted to examine the consistency of the findings. Consistent findings were produced in analyses that modeled the two indicators of perceivers' behavior (observers' perceptions and partners' perceptions) as separate predictors. Perceivers' perceptions of their behavior were independently predicted by both of these accuracy benchmarks (Path B); observers' perceptions ($b = .20$, $p < .05$), partners' perceptions ($b = .28$, $p < .001$), and the confirmation bias effect (Path C) remained strong and significant in this model ($b = .50$, $p < .001$). Path D, the effect of perceivers' perceptions of their behavior on their relationship security, also remained significant when the two accuracy benchmarks were used as independent predictors ($b = .26$, $p < .001$). In addition, consistent findings were produced in analyses that examined only one of the indicators of perceivers' chronic valuing of their partners. Evidence that perceivers' valuing of partners biased perceivers' perceptions of their own behavior (Path C) was found when valuing of partners was operationalized as care for partners ($b = .40$, $p < .001$), commitment to partners ($b = .29$, $p < .001$), satisfaction with partners ($b = .37$, $p < .001$), and positive regard for partners ($b = .44$, $p < .001$). Likewise, evidence that perceivers' perceptions of their own behavior predicted change in their relationship security (Path D) was found when the composite index of change in perceivers' relationship security was replaced with one of its constituents. Evidence was sound predicting post-interaction perceived partner satisfaction ($b = .19$, $p < .001$), post-interaction perceived regard ($b = .16$, $p < .001$), post-interaction perceived partner commitment ($b = .09$, $p < .05$), and post-interaction felt acceptance ($b = .53$, $p < .001$). Hence, the findings were consistent across individual components of the composites described in the primary analyses above.

Indirect effects. The upper portion of Table 1 presents the decomposition of the effect of perceivers' valuing of partners on perceivers' perceptions of their own behavior. The total (i.e., direct + indirect), direct, and indirect effects are presented. We constructed bias-corrected 95% confidence intervals for these effects using 3,000 bootstrap samples. As indicated in Table 1, the total effect was significant, indicating that perceivers' valuing of partners had a significant overall association with their perceptions of their responsive behavior, a sum of direct and indirect effects. Replicating the result reported in Figure 3, the direct effect also was significant, suggesting confirmation bias in perceivers' perceptions of their behavior. The indirect effect of perceivers' valuing of partners on their self-perceived behavior via their actual behavior (the combination of Paths A and B) also was significant. This indicates that perceivers who valued partners saw themselves as enacting more responsive behavior toward those partners partly because these perceivers actually did enact responsive behavior, which they accurately perceived. In other words, accurate self-perception of behavior was one mechanism that explained why perceivers who valued partners saw themselves as more responsive toward those partners. Taken together with the confirmation bias direct effect, these results suggest that both accurate and biased self-perception can explain why perceivers who value partners see themselves as more responsive. Approximately 78% of the total effect of perceivers' chronic valuing on perceivers' perceptions of their own behavior was direct, which suggests confirmation bias, whereas 22% of the total effect was indirect, via accurate assessment of their own behavior.

The lower portion of Table 1 presents effect decomposition and bootstrapping analyses for the effect of perceivers' valuing of partners on perceivers' change in relationship security. The significant total effect suggests that, via a combination of the indirect effects, perceivers who valued partners felt significantly more secure that they were valued by partners following the interaction. The indirect effect involving a combination of Paths C and D is central to whether confirmation-biased self-perceptions of behavior predict perceivers' security. As indicated in Table 1, this C × D indirect path was significant. This indirect path suggests that perceivers who valued partners tended to perceive that they engaged in responsive behavior toward those partners, which made them feel more confident that they were valued by partners, and this process occurred independently of perceivers' actual behavior (as indexed by observers and partners) and partners' actual sentiments. This process accounted for 78% of the overall effect of perceivers' valuing of partners on changes in their relationship security. The indirect effect involving a combination of Paths A, B, and D suggests that perceivers who valued partners enacted responsive behavior and, after recognizing their own behavior as responsive, they felt more secure in partners' sentiments. As

Table 1
Decomposition of Effects of Perceivers' Valuing of Partners on Perceivers' Perceptions of Own Responsive Behavior and Perceivers' Post-Interaction Relationship Security (Study 1)

Effect	Conceptual meaning	Estimate	95% CI	Significance
	Predicting perceivers' perceptions of own behavior			
Total effect	Sum of effects below	.663	.468 to .841	$p < .001$
Direct effect (Path C)	Biased self-perception	.519 (78%)	.321 to .699	$p < .001$
Indirect effect (Path A × B)	Accurate self-perception	.145 (22%)	.080 to .233	$p < .001$
	Predicting perceivers' post-interaction relationship security			
Total effect	Sum of effects below	.178	.112 to .255	$p < .001$
Indirect effect (Path C × D)	Biased self-perception	.139 (78%)	.079 to .211	$p < .001$
Indirect effect (Path A × B × D)	Accurate self-perception	.039 (22%)	.020 to .068	$p < .001$

Note. 95% confidence intervals and significance levels were computed based on 3,000 bootstrap samples. Paths refer to paths displayed in Figure 3.

indicated in Table 1, this indirect effect also was significant.[4] This process suggests that perceivers' accurate self-perception of their responsive behavior bolstered their relationship security, and it accounted for 22% of the overall effect of perceivers' valuing of partners on changes in their relationship security. Hence, these two indirect effects suggest that both biased and accurate perceptions of own responsive behavior predict perceivers' relationship security.

Alternative models. Several alternative models were tested to address potential limitations of the analysis described above and to test alternative explanations. To examine whether individual differences in trait self-esteem served as a third variable that explained the evidence for bias in perceivers' self-perceptions of behavior, self-esteem was entered as an additional predictor. This model continued to reveal evidence for both accuracy (Path B; $b = .44$, $p < .001$) and confirmation bias (Path C; $b = .52$, $p < .001$), and self-esteem did not predict self-perceptions of responsive behavior ($p = .44$).

In addition, the effect of perceivers' perceptions of their own behavior on change in their relationship security—Path D in Figure 3—remained significant after controlling for partners' responsive behavior as judged by observers ($b = .26$, $p < .001$), which independently predicted change in perceivers' security ($b = .09$, $p = .05$). These findings demonstrate that the link between perceivers' perceptions of their own behavior and perceivers' change in relationship security cannot be explained by partners' behavior.

An alternative model was tested that controlled for post-interaction change in perceivers' valuing of partners. This alternative model tests whether perceivers' state feelings of valuing the partner account for the effect of their self-perceived behavior on changes in their feelings of relationship security. This model continued to reveal evidence for an effect of perceivers' self-perceived behavior on change in their relationship security (Path D; $b = .21$, $p < .001$). Independently of this effect, perceivers' change in their valuing of partners strongly predicted change in relationship security ($b = .48$, $p < .001$).

Finally, an alternative model was tested that switched the order of the model variables. The original model proposed that self-perceptions of responsive behavior fully mediated effects of perceivers' valuing of partners and perceivers' behavior on perceivers' change in felt security. The alternative model switched the mediator and outcome, positing that perceivers' change in felt security fully mediated effects of perceivers' valuing of partners and perceivers' behavior on perceivers' perceptions of their behavior. This model was not a good fit to the data, $\chi^2(8) = 69.10$, root-mean-square error of approximation (RMSEA) = .26, non-normed fit index (NNFI) = .27. Additional analyses revealed the cause of poor model fit. Even after controlling for perceivers' change in felt security, perceivers' valuing of partners and perceivers' responsive behavior continued to predict their perceptions of responsive behavior ($b = .45$ and $b = .31$, respectively, $p < .001$). In summary, then, evidence for full mediation was found in the original model but not in an alternative model that switched the status of the mediator and outcome variables.[5]

Summary

This study provided support for the model presented in Figure 1. Perceivers who valued partners enacted more responsive behavior, as judged by outsiders. Perceivers' judgments of their own responsive behavior were both accurate (based on their actual behavior) and biased (predicted by their sentiments toward partners). Perceivers who valued partners seemed to give themselves extra credit for having pro-relationship sentiments toward partners when they judged their own responsive behavior, resulting in exaggeration of their responsive behavior. In turn, accurate self-perception of behavior and biased self-perception of behavior had independent effects on perceivers' security following the interaction, revealing new processes by which perceivers who value partners generate relationship security. These processes appeared to operate independently of perceivers' chronic feelings of relationship security and partners' actual sentiments following the interaction.

Study 2

The second study served as a replication and extension of Study 1. Once again, the model depicted in Figure 1 was tested. However, the model was tested in the context of an observed social support interaction rather than a conflict interaction, potentially expanding the applicability of the model. In each dyad, a randomly selected individual ("partner") was asked to describe a personal stressor, providing an opportunity for this individual's romantic partner ("perceiver") to provide responsive support. In addition to reporting on their immediate perceptions, perceivers reported on their memories of their behavior 2 weeks and 6 months following the interaction. These data were used to test whether the model could be extended to perceivers' memories of their responsive behavior.

Method

Participants. Participants included both members of 247 heterosexual couples ($M_{age} = 21.11$ years; $SD = 7.76$). Participants were recruited via advertisements in local newspapers and on Internet bulletin boards, flyers, and through an undergraduate psychology subject pool. Relationships were predominantly described as dating relationships (73.7%) or engaged and marital relationships (15.4%). Participants received financial compensation or partial fulfillment of course requirements in their psychology course in exchange for participation. Participants were predominantly Caucasian (93.6%), but some participants were Asian (3.3%), African American (1.9%), or Hispanic (1%).

Procedure. Dyad members were escorted to separate laboratory rooms to complete the preinteraction measures described below (T1) in addition to other measures that are not related to this investigation.[6] After completion of these measures, a randomly

[4] This indirect effect includes the nested B × D indirect effect. This captures whether enacting responsive behavior had an indirect effect on perceivers' security via perceivers' accurate self-perception of that behavior, which was significant (estimate = .115, 95% CI = .071 to .174, $p < .001$).

[5] A model adding gender as a moderator revealed no gender differences in any of the model paths ($ps > .15$).

[6] The additional measures included measures of attachment insecurity, inauthentic behavior, coping, emotional state, perceptions of the partner's insecurity, tendencies to monitor the partner's sentiments, implicit/unconscious self-esteem and partner attitudes, and vigilance about upsetting the partner. These constructs are not directly related to the current research.

selected member of each dyad was assigned the role of "partner." Partners were asked to identify a personal problem (not related to their relationship) to be discussed with their romantic partner (assigned the role of "perceiver"). Participants were then reunited for the recorded interaction. To assist participants with feeling comfortable in the presence of the video cameras, the researcher had them play a game for five minutes. Then, the researcher asked partners to discuss the problem they identified earlier. The researcher then left the room for 7 minutes, or until one of the participants notified the researcher that the discussion was over. Participants then returned to individual rooms to complete the post-interaction measures described below.

Preinteraction measures.

Chronic valuing of partners. Perceivers completed four measures assessing their valuing of partners. These included a six-item measure of relationship commitment (e.g., "I want our relationship to last for a very long time"; Cronbach's $\alpha = .92$), a 10-item measure of care for the partner (e.g., "Helping him/her is a high priority for me"; Cronbach's $\alpha = .82$), an eight-item measure of regard for the partner (e.g., "He/she has a number of good qualities"; Cronbach's $\alpha = .85$), and a four-item measure of relationship satisfaction (e.g., "I feel satisfied with our relationship"; Cronbach's $\alpha = .89$). Items were completed on 9-point response scales (1 = *extremely disagree*; 9 = *extremely agree*). Responses to these four scales were highly correlated (Cronbach's $\alpha = .83$) and were averaged to create an index of perceivers' valuing of partners.

Chronic relationship security. Participants also completed analogous measures of their perceptions of their partner's commitment, regard, and satisfaction. The measures were identical to those described above, except items were reworded to assess perceptions of the partner's sentiments (e.g., "He/she wants our relationship to last for a very long time"). Items were completed on the same 9-point response scales, and all of the individual measures were internally consistent (Cronbach's $\alpha > .88$). Participants also indicated whether they felt loved, accepted, and rejected by their partner on 9-point response scales (1 = *not at all*; 9 = *extremely*; Cronbach's $\alpha = .70$).

Self-esteem. Perceivers completed the measure of self-esteem described in Study 1 using the same 9-point response scales (Cronbach's $\alpha = .89$).

Post-interaction measures.

Perceptions of perceivers' responsive behavior. Immediately after the interaction, perceivers completed a 19-item measure assessing perceptions of the responsive behaviors they enacted during the interaction. Items were based on measures used in prior research on responsive behaviors in interactions with romantic partners (Collins & Feeney, 2000; Maisel, Gable, & Strachman, 2008). Items assessed attentiveness (e.g., "To what extent did you change the subject while he/she was discussing his/her problem?"), provision of emotional support (e.g., "To what extent did you give him/her reassurance to help him/her feel better about his/her problem?"), instrumental or problem-focused support (e.g., " To what extent did you give him/her advice or suggest a plan for him/her to follow to resolve his/her problem?"), understanding (e.g., "How much did you understand the nature of his/her problem?"), negative behavior (e.g., "How critical or blaming were you while he/she was discussing his/her problem?"), and overall responsiveness (e.g., "Overall, how supportive were you while your partner was discussing his/her problem during the lab conversation?"). Items were completed on 9-point response scales (1 = *not at all*; 9 = *extremely*). After reverse-scoring negative behaviors, we averaged scores on the six subscales to create an index of perceivers' perceptions of their own responsive behavior during the interaction (Cronbach's $\alpha = .83$).

Immediately after the interaction, partners completed an analogous 19-item measure of their perceptions of perceivers' behavior using the same response scales. Items were identical except they were reworded to assess partners' perceptions of perceivers' responsive behavior (e.g., "Overall, how supportive was he/she while you were discussing your problem?"; Cronbach's $\alpha = .88$).

Perceivers' post-interaction relationship security and partners' post-interaction valuing. After the interaction, perceivers completed a four-item measure assessing current perceptions of their partner's satisfaction (e.g., "Right now, he/she feels satisfied with our relationship"; Cronbach's $\alpha = .93$) and a five-item measure assessing current perceptions of their partner's commitment (e.g., "Right now, he/she is committed to maintaining our relationship"; Cronbach's $\alpha = .95$). Items were completed on 9-point response scales (1 = *extremely disagree*; 9 = *extremely agree*). Perceivers also competed a three-item measure of acceptance-related emotions, including "loved," "accepted," and "rejected" (reverse-scored), using 9-point response scales (1 = *not at all*; 9 = *extremely*; Cronbach's $\alpha = .76$). Scores on these three measures were highly correlated (Cronbach's $\alpha = .86$), and so they were averaged to create an index of perceivers' post-interaction relationship security.

After the interaction, partners completed an analogous four-item measure of their current satisfaction (e.g., "Right now, I feel satisfied with our relationship; Cronbach's $\alpha = .95$) and an analogous five-item measure of their current relationship commitment (e.g., "Right now, I am committed to maintaining our relationship"; Cronbach's $\alpha = .95$). Once again, scores on these measures were highly correlated (Cronbach's $\alpha = .90$), and so they were averaged to create an index of partners' post-interaction valuing of perceivers.

Follow-up measures. Approximately two weeks following the interaction (T2; $N = 238$) and again approximately six months following the interaction (T3; $N = 196$), perceivers completed measures of their memories of the responsive behavior they enacted during the laboratory interaction. The items were identical to the items used to assess their immediate perceptions of their responsive behavior described above and were completed using the same rating scales (T2 Cronbach's $\alpha = .84$; T3 Cronbach's $\alpha = .83$).[7] In addition, participants completed measures of their perceptions of their partner's satisfaction, regard, and commitment, as well as measures of their own satisfaction, regard, and commitment. These measures were identical to the measures described above and used the same response scales (1 = *extremely disagree*; 9 = *extremely agree;* Cronbach's $\alpha > .89$).

Observers' ratings of interactions. A panel of 11 coders watched the recorded interactions and rated perceivers' behavior

[7] Participants who completed the 6-month memory follow-up did not significantly differ from participants who did not complete the follow-up on any of the T1 measures.

using the same 19 items that perceivers and partners completed to measure their perceptions of perceivers' behavior. Coders also used the same 9-point response scales. Intercoder agreement was high for each item (Cronbach's alphas ranged from .82 to .94, $M_{\alpha} = .89$). Individual item ratings were averaged across the coders. In turn, these item averages were averaged across items (after reverse-scoring of negative behavior) to create an index of perceivers' responsive behavior as observed by objective coders (Cronbach's $\alpha = .89$). To minimize potential carryover effects of the partner's behavior, each video displayed only one of the dyad members and coders rated individual participants in a random order. Observers' ratings of perceivers' behavior were strongly correlated with partners' ratings of perceivers' behavior, $r(242) = .50$, $p < .001$. Observers' and partners' ratings were averaged to create a composite index of perceivers' actual behavior for use in the primary analyses.

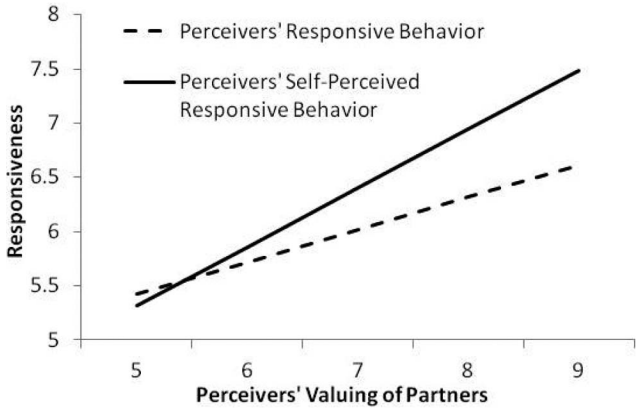

Figure 4. Effects of perceivers' valuing of partners on perceivers' responsive behavior and perceptions of responsive behavior (Study 2).

Results

In describing the results, we will use the term *perceivers* to refer to participants who were in the support-provider role (i.e., listening to a partner talk about a problem) and who made judgments of their own responsive behavior. The term *partners* will be used to refer to their romantic partners, who were in a support-seeker role (i.e., describing their problem). Data analysis was analogous to the analysis presented in Study 1, and all analyses were path analyses conducted with the AMOS program. First, analyses were conducted to examine whether perceivers who value partners exaggerate their own responsive behavior relative to the index of their actual behavior (the aggregate perception of perceivers' behavior by partners and observers). Second, path analysis tested the model displayed in Figure 1, and alternative explanations of these effects were addressed. Finally, extensions of the model to memory and long-term changes in relationship security were tested.

Exaggerated perceptions of responsive behavior. Simultaneous linear equations were tested with the AMOS program to examine whether perceivers who highly valued their partners exaggerated their own responsive behavior. The model estimated the effects of perceivers' valuing of partners on perceivers' own responsive behavior toward partners (as perceived by partners and observers) and on perceivers' perceptions of their own responsive behavior. The model estimated a slope and intercept for each of these equations. Figure 4 presents predicted values from both regression equations. Consistent with predictions, the slope linking perceivers' valuing of partners to their perceptions of their responsive behavior was stronger ($b = .54$) than the slope linking perceivers' valuing of partners to the index of perceivers' actual responsive behavior ($b = .30$). A nested chi-square test indicated that these slopes were significantly different, $\chi^2(1) = 9.91$, $p < .001$. As demonstrated in Figure 4, the gap between perceivers' perceptions of their responsive behavior and the index of their actual behavior increased along with increases in perceivers' valuing of partners, suggesting greater exaggeration of responsive behavior for perceivers who highly valued partners. Consistent with findings from Study 1, these results suggest that perceivers gave themselves more "credit" for their positive sentiments when evaluating their behavior than did outsiders or that perceivers tended to confuse their behavior with their positive sentiments.

Path model examining immediate changes in perceivers' relationship security. The next model addressed the processes through which perceivers construct perceptions of their own responsive behavior and implications of these perceptions for their immediate relationship security following the interaction. As was the case in Study 1, a residual approach was used to create an index of perceivers' post-discussion relationship security that was independent of their chronic security and partners' actual sentiments, although all effects described below were replicated when raw scores were used in place of the residual index. Perceivers' post-discussion relationship security (i.e., average of perceived partner satisfaction, commitment, and acceptance following the interaction) was regressed on perceivers' chronic relationship security measured before the interaction (i.e., average of perceived partner satisfaction, commitment, and acceptance; Cronbach's $\alpha = .72$) and partners' post-discussion sentiments toward perceivers (average of partners' satisfaction and commitment; Cronbach's $\alpha = .90$). The unstandardized residuals from this analysis were used as an index of change in perceivers' relationship security. Positive residuals suggest that perceivers felt more secure following the interaction than what could be predicted on the basis of their preinteraction security or on the basis of their partner's actual sentiments following the interaction.

The model paths and unstandardized coefficients are presented in Figure 5. Path A was significant, which indicates that perceivers who valued partners engaged in more responsive behavior toward those partners, as judged by partners and observers. Path B also was significant, which indicates that perceivers who engaged in responsive behavior accurately perceived, to some extent, that they engaged in responsive behavior. The direct effect of perceivers' chronic valuing on their perceptions of responsive behavior, Path C, also was significant. Suggesting a confirmation bias in perceptions of behavior, perceivers who valued partners believed that they enacted more responsive behavior, and this effect was independent of what observers and partners perceived. Once again, these results suggest a blend of both accuracy and bias in perceivers' perceptions of their own responsive behavior. Perceptions of behavior were tied to the indicator of perceivers' actual behavior,

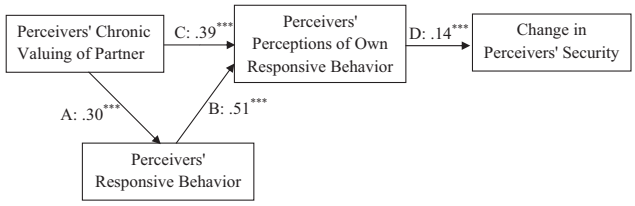

Figure 5. Results of path model predicting perceivers' post-interaction security (Study 2). Coefficients are unstandardized; letters indicate model paths. *** $p < .001$.

but they were also predicted by perceivers' sentiments about partners. Path D was significant, which suggests that perceivers who believed they enacted responsive behavior felt more secure regarding partners' sentiments.[8] Given that the residual index of change in perceivers' security was used in this analysis, this effect cannot be explained by perceiver's chronic relationship security or the partner's actual sentiments following the interaction.[9]

Additional analyses examined the consistency of these findings. The results were consistent when the two accuracy benchmarks (observers' and partners' perceptions of perceivers' behavior) were modeled as separate predictors. Perceivers' perceptions of their own behavior were independently predicted by both accuracy benchmarks (Path B), observers' perceptions of perceivers' behavior ($b = .29$, $p < .001$), partners' perceptions of perceivers' behavior ($b = .24$, $p < .001$), and perceivers' valuing of partners (Path C; $b = .38$, $p < .001$). The effect of perceivers' perceptions of their own behavior on change in their relationship security (Path D) also remained significant when the two accuracy benchmarks were used as independent predictors ($b = .16$, $p < .001$). In addition, evidence that perceivers' valuing of partners biased perceivers' perceptions of their own behavior (Path C) was found when valuing of partners was operationalized as care for partners ($b = .36$, $p < .001$), commitment to partners ($b = .18$, $p < .001$), satisfaction with partners ($b = .22$, $p < .001$), and positive regard for partners ($b = .40$, $p < .001$). Evidence that perceivers' perceptions of their own behavior predicted change in their relationship security was found when the composite index of perceivers' change in relationship security was replaced with one of its constituents, instead predicting perceived partner satisfaction ($b = .22$, $p < .001$), perceived partner commitment ($b = .13$, $p = .076$), and felt acceptance ($b = .32$, $p < .001$). Hence, the findings were consistent across models using individual components of the composites described in the primary analyses above.

Indirect effects. The upper portion of Table 2 presents the decomposition of effects of perceivers' valuing on perceivers' perceptions of their own behavior. Bias-corrected 95% confidence intervals for these effects were constructed using 3,000 bootstrap samples. The total effect represents the sum of direct and indirect effect. That it was significant suggests that perceivers' valuing of partners had a significant overall effect, summed across all possible pathways, on perceivers' perceptions of their own behavior. The significant direct effect, as described above, indicates confirmation-bias: Independently of perceivers' actual behavior, perceivers who valued partners seemed biased to perceive that they were responsive toward partners. This effect accounted for 72% of the overall effect of perceivers' valuing of partners on their self-perceptions of responsive behavior. The indirect effect involving the combination of Paths A and B was significant, which reflects a tendency for perceivers who valued partners to perceive that they enacted responsive behavior because they did, in fact, enact responsive behavior. In other words, accurate self-perception partly accounted for why perceivers who valued partners perceived that they behaved in a responsive manner. Approximately 28% of the overall effect was indirect, via perceivers' accurate assessment of their own behavior.

The lower portion of Table 2 presents effect decomposition and bootstrapping analyses for the effect of perceivers' valuing of partners on change in perceivers' relationship security immediately following the interaction. The significant total effect indicates that perceivers' valuing of partners had a significant overall effect on change in their post-interaction security, summing across all mediating pathways. The indirect effect involving the combination of Paths C and D was significant, which suggests that confirmation-biased self-perceptions of behavior predicted change in perceivers' security. That is, this indirect path suggests that perceivers who valued partners assumed that they engaged in responsive behavior toward those partners (independently of their actual behavior), which bolstered their confidence that they were valued by partners following the interaction. This process accounted for approximately 71% of the overall effect of perceivers' valuing of partners on change in their security. The indirect effect involving a combination of Paths A, B, and D also was significant, indicating that perceivers who valued targets enacted responsive behavior and that they felt more secure in partners' sentiments because they correctly perceived that they had enacted this behavior.[10] This process suggests that perceivers' accurate self-perception of their responsive behavior can bolster their relationship security. This process accounted for approximately 29% of the overall effect of perceivers' valuing of partners on change in their security. These two indirect effects suggest that valuing perceivers may feel more secure in partners' sentiments through both accurate and biased perceptions of their own responsive behavior, both of which predicted perceivers' security.

Alternative models. Several alternative models were tested to address potential limitations of the analysis described above and to test alternative explanations. A model controlling for self-esteem continued to reveal evidence for both accuracy ($b = .51$, $p < .001$) and confirmation bias ($b = .37$, $p < .001$), and self-esteem did not predict self-perceptions of behavior ($p = .20$).

In addition, an alternative model was tested that switched the order of the model variables. Instead of a model proposing that self-perceptions of responsive behavior fully mediate effects of perceivers' valuing of partners and perceivers' behavior on perceivers' change in felt security, this alternative model switched the mediator and outcome, positing that perceivers' change in felt security fully mediated effects of perceivers' valuing of partners

[8] Analyses including gender as a moderator revealed that Path D did not vary across gender ($p = .64$).

[9] This model was a good fit to the data, $\chi^2(8) = 2.99$, RMSEA = 0, NNFI = 1.

[10] This indirect effect includes the nested B × D indirect effect. This captures whether enacting responsive behavior had an indirect effect on perceivers' security via perceivers' perception of that behavior, which was significant (estimate = .072, 95% CI = .045 to .107, $p < .001$).

Table 2
Decomposition of Effects of Perceivers' Valuing of Partners on Perceivers' Perceptions of Own Responsive Behavior and Perceivers' Post-Interaction Relationship Security (Study 2)

Effect	Conceptual meaning	Estimate	95% CI	Significance
	Predicting perceivers' perceptions of own behavior			
Total effect	Sum of effects below	.542	.434 to .659	$p < .001$
Direct effect (Path C)	Biased self-perception	.389 (72%)	.302 to .480	$p < .001$
Indirect effect (Path A × B)	Accurate self-perception	.153 (28%)	.089 to .228	$p < .001$
	Predicting perceivers' post-interaction relationship security			
Total effect	Sum of effects below	.076	.048 to .110	$p < .001$
Indirect effect (Path C × D)	Biased self-perception	.055 (71%)	.034 to .081	$p < .001$
Indirect effect (Path A × B × D)	Accurate self-perception	.022 (29%)	.012 to .036	$p < .001$

Note. 95% confidence intervals and significance levels were computed based on 3,000 bootstrap samples. Paths refer to paths displayed in Figure 5.

and perceivers' behavior on perceivers' perceptions of their behavior. This model was a poor fit to the data, $\chi^2(8) = 29.60$, RMSEA = .24, NNFI = 0. A saturated model revealed why: Even after we controlled for perceivers' change in felt security, perceivers' valuing of partners and perceivers' responsive behavior continued to predict their perceptions of responsive behavior ($b = .36$ and $b = .50$, respectively, $p < .001$). Hence, evidence for full mediation was found in the original model but not in an alternative model that switched the status of the mediator and outcome variables.

Accurate and biased memories. Next, a path model was constructed to extend the model described above to memory. The model is depicted in Figure 6. One model was constructed to predict T2 (2 weeks later) memories, and another was constructed to predict T3 (6 months later) memories. Paths A, B, and C are conceptually identical to the paths described in Figure 5. Perceivers' T2 or T3 memories of their responsive behavior was added as an endogenous variable that was predicted by other variables in the model. Path E represents a link between perceivers' responsive behavior during the interaction and perceivers' subsequent memories of their behavior, which was significant in the model predicting T2 memories and marginal in the model predicting T3 memories. This path indicates that perceivers remembered some of their responsive behavior during the subsequent follow-up assessments that they did not recall immediately following the interaction (because this path was independent of perceivers' perceptions of their behavior), suggesting some accuracy that emerged at the time of retrieval. Path F represents a link between perceivers' immediate perceptions of their own responsive behavior following the interaction and perceivers' memories of their responsive behavior during the follow-up assessments, which also was significant. This effect indicates stability (or storage) of perceivers' perceptions over time; perceivers who initially encoded that they were responsive immediately after the interaction recalled being responsive during the follow-up assessments. Path G represents the effect of perceivers' valuing of partners on their subsequent memories, which also was significant. This effect is central to the prediction that confirmation biases operate on memory, as it suggests that, independently of perceivers' behavior and perceivers' initial perceptions of their own behavior, perceivers who highly valued partners remembered their behavior as more responsive during the follow-up assessments. This effect suggests confirmation-biased memories that are independent of the confirmation-biased perceptions described earlier, suggesting a bias at the retrieval stage. This effect provides especially compelling evidence that perceivers' representations of their own behavior are biased by their sentiments toward partners because, in this analysis, perceivers' initial perceptions, which were already biased, were partialed from the effect.

Indirect effects. Decomposition of the effect of perceivers' chronic valuing of partners on perceivers' memories of their own responsive behavior and results of bootstrapping analyses are presented in Table 3. The total effect was significant, indicating

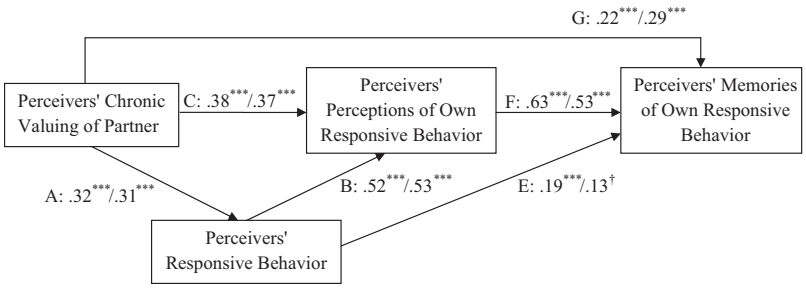

Figure 6. Results of model examining accuracy and bias in perceivers' memories of their responsive behavior (Study 2). Values on the left of the slash are from the model predicting memories assessed during the 2-week follow-up (T2). Values on the right of the slash are from the model predicting memories assessed during the 6-month follow-up (T3). Coefficients are unstandardized; letters indicate model paths. † $p = .07$. *** $p < .001$.

Table 3
Decomposition of Effects of Perceivers' Valuing of Partners on Perceivers' Memories of Own Responsive Behavior (Study 2)

Effect	Conceptual meaning	Predicting 2-week (T2) memories			Predicting 6-month (T3) memories		
		Estimate	95% CI	Significance	Estimate	95% CI	Significance
Total effect	Sum of effects below	.622	.457 to .803	$p < .001$	.614	.460 to .774	$p < .001$
Indirect effect (Path C × F)	Biased encoding	.243 (39%)	.153 to .340	$p < .001$	.193 (31%)	.104 to .301	$p < .001$
Indirect effect (Path A × B × F)	Accurate encoding	.104 (17%)	.050 to .182	$p < .001$	.087 (14%)	.037 to .166	$p < .001$
Indirect effect (Path A × E)	Accurate retrieval	.060 (10%)	.022 to .120	$p < .001$	.041 (7%)	.002 to .119	$p < .05$
Direct effect (Path G)	Biased retrieval	.215 (35%)	.099 to .347	$p < .001$	.294 (48%)	.154 to .452	$p < .001$

Note. 95% confidence intervals and significance levels were computed based on 3,000 bootstrap samples. Paths refer to paths displayed in Figure 6.

that perceivers' who valued their partners remembered behaving in a more responsive manner via a combination of the direct and indirect effects.

The C × F indirect effect was significant, indicating that perceivers who valued partners had more positively biased immediate perceptions of their own responsive behavior, which were then incorporated into subsequent memories of their behavior. This suggests that perceivers who valued partners remembered behaving in a responsive manner because they incorporated their biased immediate perceptions (or biased encoding) into memory.

The A × B × F indirect effect, which also was significant, suggests that perceivers who valued partners behaved in a more responsive manner, which they encoded during the interaction, and this encoded information remained in memory. This suggests that perceivers who valued partners remembered behaving in a responsive manner due to accurate encoding. Their memories incorporated partially accurate initial perceptions of responsive behavior.

The A × E indirect effect was significant, which indicates that perceivers' who valued their partners remembered their behavior as more responsive during the follow-up assessments in part because they actually enacted responsive behavior, which was later remembered. However, this effect was independent of perceivers' perceptions of their responsive behavior immediately following the interaction, suggesting perceivers recalled some of their responsive behavior during the follow-up assessments that they did not report immediately after the interaction.

Bootstrapping analyses also replicated Path G, the direct effect of perceivers' valuing of partners on their memories. This effect suggests that perceivers who valued their partners remembered behaving in a responsive manner independently of their behavior and independently of their initial perceptions.

These results suggest multiple pathways through which perceivers who value partners develop memories of having behaved in a responsive way toward partners. These perceivers (a) have accurate perceptions of their more responsive behavior immediately following the interaction, which are then encoded into memories (accurate encoding); (b) later remember some of their more responsive behavior even when it was not initially perceived (accurate retrieval); (c) have biased perceptions of their behavior immediately following the interaction, which are then encoded into memories (biased encoding); and (d) exhibit biased retrieval processes in which they remember their behavior as being consistent with their positive sentiments (biased retrieval).

Implications for future relationship security. The final model examined implications of perceivers' perceptions and memories of responsive behavior for their subsequent relationship security assessed during the 2-week and 6-month follow-up assessments. Once again, residual indices of change in relationship security were constructed, although effects were replicated when raw scores were used. Two-week and 6-month relationship security (average of perceived partner satisfaction, regard, and commitment; Cronbach's αs > .88) were regressed on baseline relationship security (also an average of perceived partner satisfaction, regard, and commitment; Cronbach's $\alpha = .78$) and the partner's concurrent actual sentiments (an average of their satisfaction, regard, and commitment; Cronbach's $\alpha > .88$). The unstandardized residuals from this analysis were saved. Positive residuals indicate that participants felt more secure about their relationship during the follow-up assessments than what could be predicted on the basis of their baseline levels of security or of partners' concurrent feelings about them.

The model of change in relationship security, which is depicted in Figure 7, extended the memory path model described above by adding change in relationship security as an endogenous variable and adding two paths. Path H represented the effect of perceivers' perceptions of their own responsive behavior immediately following the interaction on their subsequent relationship security. This effect was significant in the model predicting 2-week relationship security but not in the model predicting 6-month relationship security. Path I represented the effect of perceivers' subsequent memories of their behavior on their concurrent relationship security. This effect was significant in the model predicting 6-month relationship security but not the model predicting 2-week relationship security.

These results suggest that change in relationship security over the follow-up sessions was predicted by immediate perceptions of responsive behavior (predicting change over 2 weeks) and memories of responsive behavior (predicting change over 6 months). Given that the residual index of change in relationship security was used, these results cannot be explained by baseline relationship security or change in the partner's actual sentiments.

Summary

This study provided additional support for the model outlined in Figure 1 and extended the model to the domain of support interactions. Once again, perceivers' who valued partners perceived that they enacted more responsive behavior toward their partners, and these judgments were partially accurate (based on actual enactment of responsive behavior) and partially biased (predicted by their sentiments toward partners). Perceivers who valued partners seemed to give themselves extra credit for having pro-

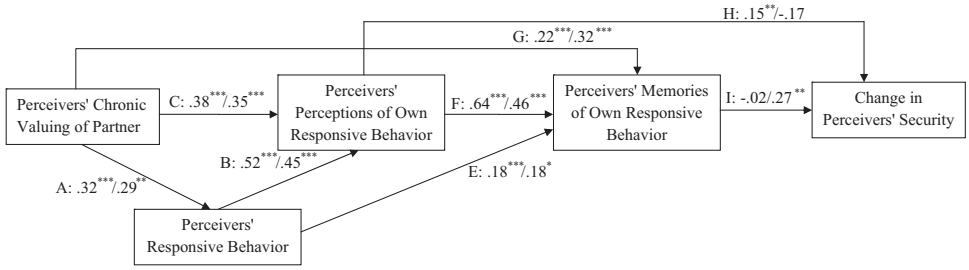

Figure 7. Results of model examining change in relationship security over 2 weeks and 6 months (Study 2). Values on the left of the slash are from the model predicting memories and security assessed during the 2-week follow-up (T2). Values on the right of the slash are from the model predicting memories and security assessed during the 6-month follow-up (T3). Coefficients are unstandardized; letters indicate model paths. † $p = .07$. * $p < .05$. ** $p < .01$. *** $p < .001$.

relationship sentiments toward partners when they judged their own responsive behavior, producing an exaggeration of their responsive behavior and replicating results from Study 1. Once again, accurate and biased self-perception of responsive behavior had independent effects on perceivers' security immediately following the interaction. Self-perceptions of responsive behavior also predicted security 2 weeks later. Hence, this study provided additional support for novel processes through which perceivers who value partners sustain relationship security. In addition, this study extended the model to memory. Independently of perceivers' behavior and even their initial perceptions of their behavior (which were already positively biased), perceivers who valued partners remembered behaving in a more responsive manner 2 weeks and 6 months following the laboratory interaction. Six months following the interaction, perceivers' memories of their responsive behavior predicted change in their relationship security.

General Discussion

When perceivers highly value relationships with partners, they usually want to be valued in return by those partners. Indeed, feeling secure in the partner's reciprocation bolsters the perceiver's psychological well-being and enhances the quality of relationships (Clark & Lemay, 2010; Murray et al., 2006; Reis et al., 2004). Hence, individuals who value partners may have developed several strategies, conscious and unconscious, to sustain a sense of security that they are valued in return.

What processes contribute to a sense that these valued partners reciprocate positive sentiments? Research and theorizing on security in interpersonal relationships tends to ignore the influence of perceivers' own behavior in shaping the inferences perceivers make regarding how much they are valued by their partners. However, the current research illustrates the importance of perceivers' representations of their own behavior in shaping these inferences. People tend to strongly believe that responsive behavior elicits positive sentiments from others, such as their satisfaction, commitment, and positive regard, whereas unresponsive behavior results in dissatisfaction, reduced commitment, devaluation, and ultimately rejection. The existence of such theories suggests that perceivers' own behavior—or at least their cognitive representations of their own behavior—should be an important contributor to their perceptions of being valued by their partners. Accordingly, two studies revealed two novel mechanisms—accurate and biased self-perception—that seem to bolster relationship security for perceivers who strongly value their partners.

Achieving Security Through Accurate Self-Perception

Self-perception theory predicts that people learn about themselves by observing their own behavior and then making inferences about their qualities (Bem, 1972). An analogous process may occur in relationships in which people acquire knowledge about how their partner feels about them by observing their own behavior and then making inferences regarding how this behavior impacted the partner's sentiments. When perceivers highly value partners, their more responsive behavior may create feelings of security. That is, Jack may behave in an especially kind or supportive manner toward Jill. After accurately reflecting on this behavior, Jack may believe he was especially kind or supportive, and this belief may lead him to assume that Jill is satisfied or thinks well of him. This may occur even if Jill did not actually have this response, as Jack may be overly focused on his own behavior and the consequences he expects. Both of the current studies provided support for this process. Perceivers who valued partners engaged in more responsive behavior in conflict and support interactions. Those who enacted responsive behavior, in turn, tended to perceive that they had done so following the interaction, suggesting some accuracy to perceivers' perceptions of their own behavior. In turn, those who believed that they enacted responsive behaviors were more confident that they were valued by their partners following the interaction, and this was independent of partners' reports of their sentiments toward perceivers. The indirect effect traversing each of these steps was significant, suggesting that accurate self-perception of responsive behavior was a significant explanation for why perceivers who valued partners felt secure following the interaction. Furthermore, Study 2 demonstrated a lagged effect; self-perceptions of responsive behavior following the interaction predicted improvements in relationship security 2 weeks later.

Study 2 extended the accurate self-perception process to memory and suggested two distinct routes to accurate memories. First, perceivers' initial perceptions of their more responsive behavior was accurate, and these initial perceptions were stored for later recall. Second, perceivers remembered some aspects of their responsive behavior that they did not report immediately following the interaction. Both processes partially explained why perceivers

who valued their partners remembered behaving in a more responsive manner during the follow-up sessions. In turn, memories of own responsive behavior predicted improvements in relationship security over time.

This self-perception process underscores the importance of behavior and self-awareness for perceivers' relationship security, as it suggests that perceivers' responsive behavior bolsters security because perceivers are aware of their own responsive behavior, which creates beliefs regarding partners' reactions. This process underscores that partners are not the only observers of perceivers' behavior. Perceivers witness their own behavior, which has important implications for the inferences they draw regarding how their partners feel about them. This is an understudied source of interpersonal security. However, this view is consistent with arguments advanced by Clark and Grote (1998), who proposed that behaving in a responsive manner may cause people to feel more confident that partners will care for them.

Achieving Security Through Biased Self-Perception

Confirmation biases—the operation of cognitive processes that produce conclusions that support existing beliefs—are pervasive (Nickerson, 1998) and were examined in the current research. The current research tested the prediction that perceivers exhibit a confirmation bias in their perceptions of their own responsive behavior, overestimating the degree to which their behavior toward partners is consistent with their existing sentiments toward partners. Moreover, perceivers who value partners may give themselves "extra credit" for these positive feelings when they evaluate their own behavior, credit that is not granted by outsiders, which would produce exaggeration of their responsive behavior relative to what outsiders see. Both studies supported these predictions. Perceivers saw their behavior as more consistent with their sentiments than did other people (partners or observers), and perceivers who valued partners were especially likely to exaggerate the responsiveness of their behavior relative to what other people perceived. Hence, perceivers' self-perceptions of responsive behavior were derived from a blend of accuracy (the accurate self-perception process described above) and bias.

The process described above, in which perceivers infer partners' sentiments on the basis of their perceptions of their own behavior toward partners, may occur even when perceivers have a biased and inaccurate understanding of their own behavior. Perceivers who highly value partners may be biased to perceive that their behavior was especially responsive, which could lead them to infer that their behavior elicited positive sentiments in their partners. Both of the current studies suggested the existence of this process. Perceivers who valued partners perceived that their behavior was responsive (independently of their actual behavior) and those who perceived that their behavior was responsive felt more secure that they were valued by partners following the interaction. The indirect effect linking these two paths was significant, suggesting that this process was a significant contributor to relationship security for perceivers who valued partners. In other words, as a result of his positive feelings toward Jill, Jack exaggerated the responsiveness of his own behavior, and these inflated self-assessments gave him confidence that Jill was happy with him. This process could happen often in light of (a) the difficulty of observing one's own behavior; (b) the confirmation biases in judging own behavior described above; and (c) tendencies for people to consider how they (think they) behaved when inferring the partner's sentiments, as described above. Indeed, this process was the strongest of the indirect processes investigated in this research. In addition, Study 2 demonstrated that this process predicts longitudinal changes in relationship security over 2 weeks.

Study 2 also extended the examination of bias to memory. Perceivers who valued partners had positively biased memories of their own responsive behavior, and this bias was due to two processes. In part, these memories were biased because the initial encoding of the information was biased, which was retained in memory. However, this study also indicated that perceivers' memories of their behavior were biased above and beyond the bias that operated on their immediate perceptions. In other words, independently of whether perceivers had accurate immediate perceptions of their own behavior, their subsequent memories of that behavior were biased by their sentiments toward partners. This suggests that confirmation bias infiltrated both encoding and retrieval. In turn, as discussed above, memories of responsive behavior predicted improvements in relationship security over 6 months.

Like the accurate self-perception process described above, this process is entirely intrapersonal: Perceivers who value partners seem to bolster their own relationship security through processes that do not appear to depend on partners' responses. Both processes underscore that perceivers make judgments about their own behavior and that these judgments can shape their security in the partner's sentiments. However, accurate self-perception involves action combined with cognition (i.e., perceivers make inferences regarding how the partner feels about them based on their actual behavior toward the partner), whereas the biased self-perception process appears to unfold entirely in the head of perceivers (i.e., perceivers make inferences regarding how the partner feels about them based on their biased perceptions of their behavior toward the partner).

It is important to understand the distinction between accurate and biased self-perceptions of responsive behavior, because these processes suggest both avenues and potential roadblocks to the experience of being responsive to partners and feeling valued by partners. People may believe that they have been responsive to their partners because they actually were responsive and/or because they were biased into perceiving their behavior as consistent with their positive sentiments. When behavior and sentiments are both positive, accuracy and bias may converge to produce an especially compelling experience of having been responsive to partners. In turn, this may generate confidence that the partner is satisfied. In other cases, accuracy and bias may have opposing implications. For example, a person who does not have the ability or opportunity to enact responsive behavior toward a partner may nevertheless perceive that he or she was responsive as a result of having positive feelings toward partners. In this case, positive feelings toward partners may help people maintain positive relationship perceptions despite behavioral or situational realities that afford less positivity. In other words, bias can compensate for action. By the same token, as a result of accuracy, less responsive behavior should contribute to lower self-perceptions of responsiveness even for perceivers who value their partners. This may partially explain why even people who value their partners sometimes feel insecure about how much they are valued by their partners. In other cases, bias, rather than accuracy, may foster negative rela-

tionship perceptions. For instance, perceivers who do not value their partners may underestimate their own responsive behavior through the consistency bias examined in the current research. In turn, this could lead them to infer that they are devalued by their partners.

Relation to Other Theoretical Models

It is important to note that, like every model, the model tested in the current research is situated within a more complex and unexamined network of causal processes. For example, several factors may determine whether people care for their partners, which were not examined in the current research. Risk regulation theory (see Murray et al., 2006) and other interdependence perspectives (Wieselquist et al., 1999) predict that trust determines whether people are willing to depend on their partners and psychologically invest in relationships. Hence, trust may determine how much perceivers value their partners. The current research suggests that, in turn, how much people value their partners can shape their trust in their partners through both accurate and biased self-perception of behavior. Taken together, these findings may suggest cyclical processes: Trust may shape valuing of partners, which may bias subsequent trust-related perceptions. Such dynamics may contribute to the stability of trust and partner valuing over time (see also Lemay & Clark, 2008).

The current model may relate to risk regulation and interdependence perspectives in another way. The current work suggests that people feel more secure in their partners' satisfaction and commitment when they enact (or believe they enact) responsive behaviors toward their partners. This process likely depends on the existence of naive theories positing that responsive behavior elicits positive sentiments from others, whereas unresponsive behavior elicits negative sentiments. These naive theories likely exist because, as predicted by interdependence and risk regulation perspectives, others actually do respond to responsive behavior with pro-relationship sentiments and unresponsive behavior with negative sentiments. Thus, the operation of risk-regulation dynamics in which people approach responsive partners and distance themselves from unresponsive partners likely gives rise to belief structures that cause people to feel more secure when they enact responsive, relative to unresponsive, behaviors.

The current research also coheres with other research on biases in trust-related perceptions. People who strongly value relationships with their partners tend to see their partners as caring for them in return (Lemay et al., 2007), have positively biased memories of the partner's behavior (Lemay & Neal, 2013), and interpret situations in biased ways that preserve trust in the partner's care (Lemay & Melville, 2014). The current research adds to this literature by suggesting that people who value partners may think they behave in more responsive ways toward those partners, through both accuracy and bias, and these representations of their own behavior serve as an independent source of security in relationships.

Strengths, Limitations, and Future Directions

Several methodological strengths lend credibility to the conclusions described above. The primary findings were replicated across two behavioral observation studies, suggesting that the processes examined in the current research are robust and relevant to both conflict and support interactions. Moreover, both of the studies incorporated multiple accuracy benchmarks to assess perceivers' behavior, including judgments made by their romantic partners and by objective observers. The team of objective observers was large (10 to 11 observers), and each observer rated all of the videos. These methods were highly rigorous and more rigorous than most research on accuracy and bias in self-perception.

In addition, the primary findings were subjected to extensive testing to address alternative explanations and limitations. The findings were not dependent on the particular accuracy benchmark that was used, and they were consistent across various indicators of perceivers' valuing of partners (i.e., care, commitment, satisfaction, positive regard) and across various indicators of perceivers' perceptions of the partner's sentiments (i.e., perceived satisfaction, perceived regard, perceived commitment, perceived acceptance). The findings were not explained by trait self-esteem, which is often examined as a predictor of self-enhancement biases. The findings were independent of perceivers' chronic relationship security, partners' actual sentiments, and partners' behavior. Furthermore, assuming that social desirability biases pervade reports of trait self-esteem and chronic security, social desirability biases do not seem to account for the current findings, given that the effects were still observed when controlling for these other variables. Alternative models that switched mediator and outcome variables were not supported.

The memory findings from Study 2 provide an extended replication of the primary findings and lend validity to a confirmation bias interpretation. A critic might argue that perceivers are in the best position to judge the responsiveness of their own behavior, perhaps because they attend to their behavior more than observers or partners do (an argument that would contradict research on perspective differences in social interaction; see Andersen et al., 1998). Hence, a critic might reject the current arguments regarding perceivers' inaccuracy and bias. The findings regarding memory address these criticisms by demonstrating that perceivers' memories of their responsive behavior deviate from their immediate self-perceptions of behavior and their actual behavior, and in the direction of their sentiments toward perceivers. This inconsistency within perceivers across time suggests that perceivers are not unbiased judges of their own behavior.

This research raises a number of important issues that could provide the basis for future investigations. Each of the processes described above likely depend on person, situation, and relationship factors, and a limitation of the current research is that these factors were not examined. For example, although the findings were not explained by partners' behavior in the current research, more nuanced consideration of partners' behavior may reveal moderation effects. For instance, partners may provide feedback that alters perceivers' judgments of their own behavior, which could alter self-perception processes. Partners' expressions of gratitude, for instance, may amplify perceivers' judgments that they behaved in a responsive manner, which could then help them feel more secure that they are valued by partners. The processes also may increase or decrease in strength as a function of perceivers' focus of attention. When perceivers are inordinately focused on their own behavior rather than partners' reactions, self-perception processes may dominate.

As described in the introduction, perspective differences in social interaction may provide leeway for perceivers to have biased perceptions of their own behavior. People are more aware and have clearer representations of their own subjective experiences relative to their own behaviors, whereas the opposite is true with regard to knowledge of other people. Perhaps person or situational factors that increase the accessibility or quality of information regarding own behavior would be accompanied by reductions in confirmation bias. Moreover, perhaps some aspects of responsiveness are less prone to bias because they are inherently subjective and, therefore, more accessible to perceivers. For example, paying attention to partners' needs and having unconditional positive regard for partners may be components of responsiveness. These components are subjective, and so perceivers may have a more accurate understanding of these aspects of responsiveness relative to more behavioral facets.

Future research should examine specific mediators of the confirmation bias examined in the current research. Relative to judging others, when judging their own qualities, people are more likely to consider their intentions (Koehler & Poon, 2006; Kruger & Gilovich, 2004), future potential (Williams, Gilovich, & Dunning, 2012), and aspirations (Helzer & Dunning, 2012), and these biases contribute to self-enhancing perceptions. For example, people see themselves as kind if they intended to be kind (Kruger & Gilovich, 2004). Perhaps perceivers who have positive sentiments toward partners often intend and aspire to behave in responsive ways toward partners, and perhaps these intentions and aspirations then spill over and contaminate judgments of their own behavior. That is, perceivers who value partners may intend and hope to be a responsive partner and, therefore, they see their behavior in a more responsive light. Moreover, motivational mechanisms should be examined, such as the motivation to maintain existing perceptions of the self as caring for a particular partner. Finally, the current findings are correlational. Experimental manipulations of model variables would provide more compelling support for causal effects.

Conclusion

The current research suggests novel processes that may help people who strongly value relationships with partners sustain a sense of security that they are valued in return by those partners. Perceivers who value partners may accurately reflect on their responsive behavior and assume that it elicited positive responses in partners (accurate self-perception). These perceivers also may have biased perceptions of their own responsive behavior as a result of their positive sentiments toward partners (confirmation bias), and these exaggerated perceptions of responsiveness may bolster confidence that they are valued by partners (biased self-perception). These findings underscore that we both witness and distort our own interpersonal behavior, and these processes are important for understanding whether we feel valued by our partners.

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Received October 29, 2013
Revision received May 27, 2014
Accepted May 29, 2014 ■