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Projection of Responsiveness to Needs and the Construction of Satisfying Communal Relationships

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This research tested a social projection model of perceived partner responsiveness to needs. According to this model, people project their own care and supportiveness for a partner onto their perceptions of their partner's caring and supportiveness. In 2 dyadic marriage studies, participants' self-reported responsiveness to the needs of a spouse predicted perceptions of the spouse's responsiveness to the self more strongly than did the spouse's self-reported responsiveness. These projected perceptions of responsiveness, in turn, appeared to promote perceivers' relationship satisfaction. These effects were independent of individual differences in attachment, self-esteem, depression, and communal orientation. A daily-diary component suggested that people projected their own chronic responsiveness as well as their daily enacted support onto perceptions of the specific benefits received from their spouses. A 3rd study found that experimentally manipulated feelings of difficulty in recalling examples of own support provision reduced perceptions of partner responsiveness. Results suggest that projection of own responsiveness is an important determinant of perceived social support and is a means by which caring perceivers maintain satisfying and subjectively communal relationships.

Keywords: social support, projection of responsiveness, relationship satisfaction, assumed similarity, communal relationships

An essential feature of mutual communal relationships is believing that one's partner cares about one's welfare and will attend and respond to one's desires, needs, and goal strivings (Clark & Mills, 1979, 1993; Mills & Clark, 1982). Indeed, perceived partner responsiveness is a cardinal marker of relationship health and well-being (Reis, Clark, & Holmes, 2004). Identification of the processes guiding the construction of perceptions of responsiveness, then, is crucial for understanding the maintenance and quality of interpersonal relationships. To this end, we present a social projection model of perceived partner responsiveness. According to our model, people project their own supportiveness and motivation to attend to their partner's needs onto perceptions of partners, presuming that their own supportiveness and motivation are more reciprocated by their partners than may be the case. Moreover, we suggest that caring perceivers enhance their own satisfaction through this process, as it constructs perceptions of mutual communal relationships. By the same token, those who are uncaring believe their apathy is reciprocated, which undermines their satisfaction.

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The Subjective Perception of Social Support

The predominant, albeit often implicit, assumption most theories of social support make is that perceptions of partner supportiveness reflect actual partner supportiveness (B. R. Sarason, Sarason, & Pierce, 1990), and not surprisingly, several studies support this perspective. Married individuals' reports of support given do predict spouses' reports of support received (Vinokur, Schul, & Caplan, 1987), and laboratory observations of providers' support are related to recipients' appraisals of receiving support in the observed interactions (Collins & Feeney, 2000).

Two types of evidence, however, suggest there may be just a kernel of truth in overall perceptions of partner responsiveness. First, providers and recipients of support do not show high agreement on amounts of support given. For instance, agreement between providers and recipients regarding enactment of specific supportive behaviors is often weak (Bolger, Zuckerman, & Kessler, 2000; Coriell & Cohen, 1995; see B. R. Sarason et al., 1990, for a review). In addition, people's general perceptions of their partner's supportiveness are only moderately related to partners' reports of their own general supportiveness (Abbey, Andrews, & Halman, 1995; Vinokur et al., 1987). Finally, when predicting recipients' appraisals of support received in a particular interaction, substantial variance remains unexplained after controlling for external indicators of that support (Collins & Feeney, 2000).

Second, general perceptions of a partner's level of supportiveness are only moderately related to perceptions of specific sup-

portive behaviors the partner enacts (Dunkel-Schetter & Bennett, 1990; Lakey & Cassady, 1990; B. R. Sarason, Shearin, Pierce, & Sarason, 1987). That is, people seem to distinguish a partner's general supportiveness from the partner's supportive behavior. Clearly, perceived general responsiveness of relationship partners—a variable known to be more predictive of psychological and physical well-being than specific supportive behaviors (Stroebe & Stroebe, 1996)—is to a large extent subjectively constructed. The processes through which such construction occurs, however, have not received much attention.

The Projection of Communal Responsiveness

We propose that perceptions of partner supportiveness are largely derived through the process of social projection or, in other words, the attribution of one's own characteristics to others (Allport, 1924; D. S. Holmes, 1968). We suggest that those who care for their partners assume (sometimes incorrectly) that their partners care in return and that those who do not care assume (sometimes incorrectly) that their partners, likewise, do not care. The result is relationships perceived as mutually caring or uncaring.

There exists considerable evidence for the operation of projection more generally in relationships. People overestimate the degree to which their own attributes are shared by others (Ross, Greene, & House, 1977; see Marks & Miller, 1987, for a review), and this is the case even for close, well-known others. Thoughts and feelings (Thomas & Fletcher, 2003), interpersonal traits (Murray, Holmes, & Griffin, 1996), values (Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002), and depression (Schul & Vinokur, 2000) appear to be projected. Relationship commitment (Adams & Jones, 1997), attachment characteristics (Ruvolo & Fabin, 1999), and, perhaps most closely related to the present work, feelings of closeness to a partner (Kenny & Acitelli, 2001) also are projected. Here, we propose that people also project their own enacted supportive behaviors onto partner-enacted support, their own general motivation to support their partner onto perceptions of a partner's motivation to care for the self, and self-perceptions of general supportiveness onto the global support made available by one's partner.

What Might Drive the Projection?

The projection of responsiveness may be driven, in part, by cognitive processes. Constructs that are chronically accessible in perceivers' self-schemata tend to be accessible and applied when judging others (Andersen & Chen, 2002; Higgins, King, & Mavin, 1982; Marks & Miller, 1987; Markus, Smith, & Moreland, 1985). In close relationships, own responsiveness may take the form of goal or trait constructs that are linked to representations of specific partners and activated upon activation of the partner representation (cf. Fitzsimons & Bargh, 2003), in turn biasing perceptions of the partner. Construct accessibility need not be chronic or controlled for such a process to occur. Even temporary activation of an interpersonal goal may be unconsciously projected onto a close partner (Kawada, Oettingen, Gollwitzer, & Bargh, 2004). Moreover, because many communal relationships (e.g., friendships, romantic relationships) are known to be typically mutual, one's own responsiveness to the needs of a partner may be especially likely to generate expectancies that one's partner is also responsive. In turn, such expectancies of responsiveness may bias attention, encoding, and retrieval of relevant evidence in such a manner as to fulfill expectations (Coriell & Cohen, 1995).

Motivation likely also contributes to projection of responsiveness. People desire a sense of security in their close relationships. They want to trust that their relationships are stable, that their partners are committed, and that these partners care for them (J. G. Holmes & Rempel, 1989; Reis, Clark, & Holmes, 2004). They appear to make a variety of cognitive distortions to maintain these perceptions. They have been shown to positively distort images of their partner and to have optimistic perceptions of the future of the relationship and an unrealistic sense of control over it (Murray, 1999; Murray & Holmes, 1997). They diminish the perceptions of alternative partners' attractiveness (Johnson & Rusbult, 1989), fail to perceive partner thoughts accurately (Simpson, Ickes, & Blackstone, 1995), and perceive their relationship as superior to others' relationships (Rusbult, Van Lange, Wildschut, Yovetich, & Verette, 2000). These distortions all appear to be in the service of maintaining relationships. The projection of responsiveness is likely another instance of motivated social cognition in relationships. Projection of high levels of caring would help caring perceivers maintain a sense of security and reduce feelings of vulnerability that might arise by acknowledging a lack of caring on the partner's part (cf. Murray, Holmes, & Griffin, 2000; Murray, Holmes, MacDonald, & Ellsworth, 1998). Thus, people who are strongly attached to their partners, who are more committed, or who fear the loss of the relationship may be especially likely to project their responsiveness to meet their needs for felt security.

Projecting a lack of responsiveness may also be motivated. Projection of low levels of caring would help noncaring partners justify their lack of care, reduce guilt, or avoid committing more care to a partner who, they might fear, could reject them. Moreover, projecting low levels of care may even be a relationship-enhancing process. A relationship other than a strong communal one (e.g., a low-strength communal relationship or an exchange relationship) may be facilitated by both partners not feeling particularly responsive to the other's needs. Those who desire such a relationship may be motivated to see the partner as similarly not responsive. However, this should not suggest that projecting low levels of responsiveness is always congruent with one's motivations. People often fail to behave communally toward partners with whom they desire communal relationships (Clark, Graham, & Grote, 2002). In such cases, the projection of one's own lack of responsiveness, perhaps driven by cognitive mechanisms or an individualistic motivation to reduce guilt, may frustrate interpersonal needs for felt security.

Interpersonal Consequences of Projected Responsiveness.

Beyond predicting that people will project their own communal responsiveness onto their partners, we predict that doing so will affect satisfaction with the relationship. Our reasoning is straightforward. Responsiveness has been shown to be critical for the development of trust and felt security in relationships (Collins & Feeney, 2000), and receipt of responsive caregiving from a partner is known to predict relationship satisfaction (Abbey et al., 1995; Collins & Feeney, 2000; Kaul & Lakey, 2003). Whether one believes that a partner is (or is not) responsive because the partner is objectively responsive (or not) or because one is projecting

one's own responsiveness onto the partner should make little difference in terms of the effects of perceived responsiveness on felt security and relationship satisfaction.

Other Theoretical Perspectives

Prior perspectives regarding the processes underlying subjective construction of partner responsiveness have emphasized biases related to individual differences. People with low self-esteem (Lakey & Cassady, 1990; B. R. Sarason et al., 1991; Vinokur et al., 1987), those who are depressed (Lakey & Cassady, 1990; Vinokur et al., 1987), and those with attachment-related anxiety and avoidance (Collins & Feeney, 2004) appear to have stable biases predisposing them to view partners as unsupportive. Indeed, perception of high or low generalized support from others has itself been construed as a personality trait involving a stable cognitive bias to perceive partners as supportive or not (Lakey & Cassady, 1990; I. G. Sarason, Sarason, & Shearin, 1986).

Akin to this personality perspective, our model posits bias in perceiving support. However, unlike the personality perspective, our model does not assume that the source of this bias must be an individual-differences variable, nor does it assume similar perceptions of all relationship partners by a single individual. Our projection model posits *dyadic effects*. People should themselves have different levels of responsiveness toward different relationship partners, and these different levels of responsiveness should cause, through projection, analogous differences in perceived partner responsiveness.[1]

Whereas personality variables are presumed to be stable over time, the projection model explicitly does not assume that one's own responsiveness (even within the context of a single relationship) is stable. Enactment of supportive behaviors and motivation to provide support covary with changes in recipients' needs, providers' resources, and any number of other factors. Fluctuations in own responsiveness both between and within particular relationships would be expected, according to our model, to be projected onto partners, producing concomitant fluctuations in perceived partner responsiveness. Such fluctuations could not be easily explained from a personality perspective.

Another literature to which our ideas relate is that on positive relationship illusions. That research suggests that positive self-views and positive ideals for close relationships bias perceptions of a partner's traits (Murray et al., 1996). People presumably project the interpersonal traits of their ideal partners and their positive self-images onto the images they hold of partners, seeing their partners as possessing more desirable qualities than their partners claim to possess. In turn, people who idealize partners tend to report greater relationship satisfaction (Murray et al., 1996; Murray & Holmes, 1997), a finding similar to that we posit in the projected responsiveness model. However, the theoretical perspectives are distinct. The positive illusions perspective posits that these positive perceptions enhance satisfaction because they allow perceivers to gain a sense of conviction about investing in their partners by resolving doubts arising from investing in a less than ideal partner. Our model, by contrast, focuses on communal responsiveness and posits that it is satisfying to perceive a partner as caring and that such perceptions largely derive from one's own responsiveness to the partner rather than one's own self-evaluations or ideals.

Our model can also be distinguished from a *satisfaction–benevolence model*, which is also dyadic in nature. A satisfaction–benevolence model assumes that being satisfied with a relationship leads to benevolent perceptions of a partner, including his or her responsiveness (a halo effect specifically driven by satisfaction). In one study, relationship satisfaction predicted recipients' perceptions of support received in a laboratory interaction even after controlling for indicators of the other's actual supportiveness during that interaction (Collins & Feeney, 2000). In other research, even after controlling for recipients' perceptions of a partner's specific supportive behaviors, relationship satisfaction and perceptions of similarity continued to predict generalized perceptions of the partner's supportiveness (Kaul & Lakey, 2003; Lakey et al., 2002). Thus, there is some evidence for this satisfaction–benevolence model. However, we expect that such satisfaction-based distortions are independent of our hypothesized projection process.

Prior Support for Projection of Responsiveness

Our model is new, although some existing findings are consistent with it. Abbey and colleagues (1995), for instance, reported strong positive correlations between people's perceptions of support received from their spouses and perceptions of support they provided to their spouses—a finding that the authors attributed to personality or a bias to perceive equity in close relationships. Brunstein, Dangelmayer, and Schultheiss (1996, Study 2) found that measures of providing goal support to one's spouse and receiving goal support from one's spouse were highly related, as the projection model would predict. Similarly, Kenny and Acitelli (2001) found support for projection bias using a single item assessing the frequency with which a partner was perceived as feeling especially caring in the past month. Their emphasis, however, was on the occurrence of projection generally, in regard to many domains of perception, rather than on projected responsiveness and its effects on satisfaction specifically.

Overview of Research

We present three studies testing our projection of responsiveness model. Two are dyadic marriage studies, used to test the dyadic model presented in Figure 1. In this model, perceived partner responsiveness is largely a function of own responsiveness (Path A) but also may reflect some understanding, or accuracy, indicated by an effect of the other partner's self-reported respon-

[1] Our hypothesized dyadic bias is consistent with findings revealing that perceptions of supportiveness that are idiosyncratic to particular dyads (*relationship effects*) explain more variance in perceived support than do general tendencies to see others as supportive (*perceiver effects*; Lakey, McCabe, Fisicaro, & Drew, 1996) and that perceptions of particular partners' supportiveness can be distinguished from overall perception of support from one's social environment (Pierce, Sarason, & Sarason, 1991). Proponents of the personality view of bias would likely suggest that variation associated with specific pairings of people reflects true variation between dyads in partner responsiveness. We would agree that true responsiveness might account for some of the variation due to dyads but would add that projection of one's own responsiveness also is likely to be an important determinant of perceived partner responsiveness idiosyncratic to particular dyads.

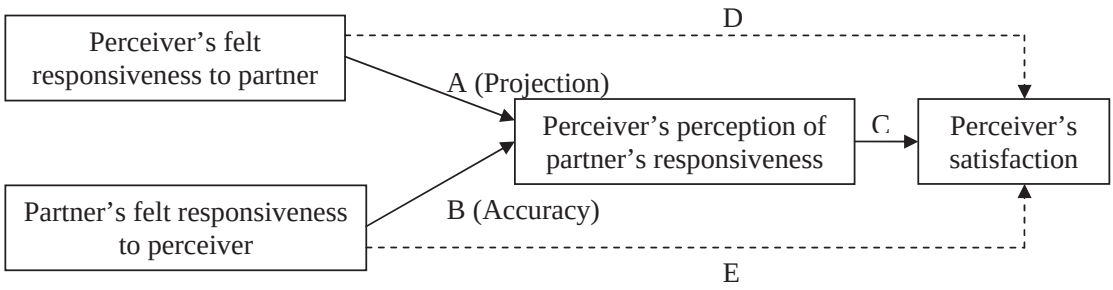

Figure 1. Theoretical model of projection of responsiveness.

siveness (Path B).[2] Also shown in Figure 1, perceptions of partner responsiveness, in turn, should predict perceivers' satisfaction (Path C). To index the extent to which projected responsiveness predicts satisfaction, we compared the effect of own responsiveness on satisfaction (Path D) across models that did and did not control for projected responsiveness (Path A). The reduction of this effect after controlling for projected responsiveness is an index of the effect of projected responsiveness on satisfaction.[3] The indirect effect of own responsiveness on satisfaction, mediated by perceptions of partner responsiveness, was also formally tested. Path E in Figure 1 illustrates that people also may be satisfied when they have a partner who reports responsiveness. This satisfaction, though, may depend on the perceiver detecting that responsiveness (Path B; see Reis et al., 2004). Thus, perceived partner responsiveness may carry the influence of both partners' responsiveness on satisfaction through accurate detection and projection of responsiveness.

Studies 1 and 2 featured analyses that controlled for various variables presumed to predict perceived partner responsiveness according to the other theoretical perspectives described above. To obtain preliminary evidence regarding the role of motivation, Study 1 also tested whether people who are strongly committed to maintaining their relationships are more likely to project their responsiveness. Such findings would suggest that the projection of responsiveness is a motivated, relationship-maintenance mechanism. Study 2 examined effects of projected responsiveness on longitudinal changes in satisfaction as well as projection in perceptions of specific supportive acts. In Study 3, we experimentally manipulated participants' perceptions of own responsiveness to a partner, then measured perceptions of that partner's responsiveness, predicting that manipulated changes in perceptions of own responsiveness would be projected onto perceptions of the partner's responsiveness.

Study 1

Attachment theory (Bowlby, 1969/1982, 1988) identifies the relief of distress and the facilitation of goal pursuit and exploration as two primary functions of caregiving (see also Feeney, 2004; Feeney & Collins, 2004; Trobst, 2000). Caregivers act as a *safe haven* for support recipients by meeting the recipient's needs for felt security, through relieving distress and resolving problems. Caregivers provide a *secure base* for the recipient by supporting the recipient's autonomy, communicating availability of comfort and assistance, and encouraging exploration in the environment and pursuit of goals. In Study 1, we tested the projected responsiveness model in regard to these two broad domains of responsiveness.

To empirically distinguish the projected responsiveness model from the personality perspective on perceived partner responsiveness, we controlled for effects of self-esteem and attachment-related anxiety and avoidance. In addition, to distinguish between projected responsiveness and positive relationship illusions, Study 1 examined projected responsiveness effects after controlling for evaluation of the partner's interpersonal traits, which has been used as an index of general positive illusions in other research (Murray et al., 1996). Although perceptions of partner responsiveness should correlate with perceptions of a partner's interpersonal traits, we expected to find evidence of projected responsiveness and an effect of projected responsiveness on satisfaction even after controlling for positive evaluation of the other's traits.

Study 1 also tested a motivational explanation of projected responsiveness. Relationship commitment reflects one's motivation to maintain a close relationship, as well as emotional attachment to the relationship. Prior research has suggested that highly committed individuals are more likely than those who are less committed to exhibit cognitive biases in perceiving their relationships, including derogation of alternative partners (Johnson & Rusbult, 1989), excessive optimism and unrealistic perceptions of

[2] In making these predictions, we are not arguing that self-reported responsiveness to a partner's needs is always accurate. Indeed, given social desirability and self-enhancement biases, such reports are likely exaggerated. Such exaggeration likely affects mean differences rather than the linear relationships emphasized in our research. In addition, significant accuracy effects in the current research, as well as effects of partner's self-reported responsiveness on the perceiver's satisfaction, would lend validity to the partner's reports of responsiveness. Also, we note that the partner's self-report is a common benchmark for indexing the perceiver's understanding of the partner in studies of perceived social support (e.g., Abbey et al., 1995; Bolger et al., 2000; Collins & Feeney, 2000; Coriell & Cohen, 1995; Vinokur et al., 1987) and interpersonal perception (e.g., Kenny & Acitelli, 2001; Murray et al., 1996; Schul & Vinokur, 2000; Simpson et al., 1995).

[3] Note that this procedure confines the possible estimate of the effect of projected responsiveness on satisfaction such that it cannot be larger than the variance already explained by own responsiveness. This ensures that the effect of projected responsiveness on satisfaction is not confounded with the effect of positive illusions of responsiveness (biased by factors other than own responsiveness).

control (Martz et al., 1998), and perceptions of relationship superiority (Rusbult et al., 2000). Such findings suggest that these cognitive biases are motivated. In the current research, we expected that perceivers who cared for their partners would be more likely to project this responsiveness onto their partners when they also were strongly committed to maintaining their relationship. Such findings would suggest that the projection of responsiveness is motivated by desires for felt security.

Method

Participants and Procedure

Participants were 191 married couples recruited from the Pittsburgh, PA area through local newspaper advertisements. Couples were paid $120 for their participation in a larger study on support processes, of which the questionnaire used in the current investigation was one component. Couples completed the questionnaires in separate laboratory rooms. With the exception of one gay couple and one lesbian couple, the couples were heterosexual. On average, wives and husbands were 38 and 40 years old, respectively, although ages ranged from 18 to 82 years old. Couples had been married for an average of 10 years. Women were varied in terms of education level (18.5% did not attend college, 40.7% attended some college, 21.2% had a bachelor's degree, and 19.6% had postgraduate education), as were men (22.0% did not attend college, 31.9% attended some college, 19.9% had a bachelor's degree, and 26.2% had postgraduate education). Approximately 77% of women and 75% of men were Caucasian; 17% of women and 18% of men were African American.

Measures

Own safe haven responsiveness. Respondents completed an abbreviated (24-item) version of the Caregiving Questionnaire (Kunce & Shaver, 1994). The current study utilized the 18 items assessing proximity (e.g., "When my partner seems to want or need a hug, I'm glad to provide it"), sensitivity (e.g., "I can always tell when my partner needs comforting, even when s/he doesn't ask for it"), and compulsive caregiving (e.g., "I sometimes create problems by taking on my partner's troubles as if they were my own"). Items were answered on 6-point response scales (1 = *disagree strongly*, 6 = *agree strongly*). Compulsive items were reverse scored and then averaged with proximity and sensitivity responses (α = .81).[4]

Perception of partner's safe haven responsiveness. The same set of items was reworded to assess perceptions of partner's safe haven responsiveness (e.g., "When I want or need a hug, my spouse seems glad to provide it"). These items were answered on the same response scales as described above (α = .86).

Respondents completed a second measure of perceived partner safe haven responsiveness (e.g., "My spouse is always there for me whenever I need him/her," "I can count on my spouse to comfort and help me when I need it," "My spouse makes me feel safe and secure"; Feeney, 2004). The 10 items were answered on 5-point response scales (1 = *disagree strongly*, 5 = *agree strongly*; α = .92). These two measures of perceived partner safe haven responsiveness were strongly correlated (r = .77). Consequently, they were standardized and then averaged to create a composite measure of perceived partner safe haven responsiveness.

Own secure base responsiveness. Own secure base responsiveness was assessed using a 17-item measure (Feeney, 2005). Items tapped intrusiveness during spouse's goal pursuit (e.g., "I sometimes interfere with my spouse's activities when he/she is exploring a challenging activity or task," "I sometimes interfere with my spouse's ability to accomplish his/her personal goals") and availability and encouragement during spouse's goal pursuit (e.g., "When my spouse tells me about something new that he/she would like to try, I usually encourage him/her to do it," "When my spouse is facing a challenging or difficult situation, I try to make myself available to him/her in case he/she needs me"). Responses to intrusiveness items were reverse scored and then averaged with encouragement and availability responses (α = .82).

Perceptions of partner's secure base responsiveness. Respondents completed identical items reworded to assess perceptions of partner's secure base responsiveness (e.g., "My spouse sometimes interferes with my activities when I am exploring a challenging activity or task," "When I tell my spouse about something new that I would like to try, he/she usually encourages me to do it"; α = .91).

Marital satisfaction. Respondents completed a six-item measure adapted from prior studies (Collins & Read, 1990; Van Lange et al., 1997) that assessed the degree to which they felt happy and satisfied in their marriage (e.g., "All things considered, how happy are you in your relationship?", "How does your relationship compare to other people's?"). Items were answered on 8-point response scales (α = .95).

Commitment. Respondents completed a six-item measure adapted from prior studies (Johnson & Rusbult, 1989; e.g., "Do you feel committed to maintaining your relationship with your spouse?", "For how much longer do you want your relationship to last?"), answered on 8-point response scales (α = .81).

Self-esteem. Participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The 10 items were answered on 7-point response scales (1 = *strongly disagree*, 7 = *strongly agree*; α = .89).

Attachment-related anxiety and avoidance. Participants completed a modified, 26-item version of the Experiences in Close Relationships Scale (Brennan, Clark, & Shaver, 1998). Instructions and items were reworded to assess attachment-related anxiety and avoidance in the context of important relationships generally. Items were answered on 7-point response scales (1 = *disagree strongly*, 7 = *agree strongly*). Five avoidant items and five anxious items that had the lowest correlations with the respective total scores were eliminated from the questionnaire (anxious α = .90, avoidant α = .88).

Evaluation of partner's interpersonal traits. Respondents indicated the extent to which 37 traits described their spouses generally. These included 21 negative traits (e.g., insulting, rejecting, demanding, argumentative, complaining, angry, conceited, bossy, selfish, critical) and 16 positive traits (e.g., understanding, sup-

[4] The Kunce and Shaver (1994) caregiving measure also includes a set of items assessing controlling caregiving (e.g., "My spouse tends to be too domineering when trying to help me"). These items were not included in the safe haven caregiving measures because they seem more closely related to secure base caregiving. Nevertheless, analyses that included these items produced an identical pattern of results.

portive, caring, sensitive, encouraging, comforting, considerate, sympathetic, respectful, peaceful). Items were answered on 5-point response scales (1 = *not at all,* 5 = *extremely*). Responses to negative items were reverse scored and then averaged with responses to positive items ($\alpha = .96$).

Results and Discussion

Analytic Strategy: Indexing Projected Responsiveness

As discussed previously, accuracy of perceiving partner responsiveness, or the extent to which the perceiver understood the partner's felt responsiveness, was indexed by the effect of the partner's self-reported responsiveness on the perceiver's perceptions of that partner's responsiveness (Path B in Figure 1). Projection bias was indexed by the effect of the perceiver's own responsiveness to the partner on the perceiver's perceptions of the partner's responsiveness after controlling for the accuracy effect (Path A in Figure 1).

Mediation analyses examined the degree to which projected responsiveness predicted satisfaction. An effect of projected responsiveness on satisfaction is indicated by a significant effect of perceivers' own responsiveness on their own satisfaction (controlling for the partner's responsiveness; Path D in Figure 1) and a reduction of that effect after controlling for the overlap between own responsiveness and perceptions of partner responsiveness. That overlap indicates projected responsiveness, and the reduction of the effect of own responsiveness on satisfaction after controlling for the overlap is an index of the effect of projected responsiveness on satisfaction. Sobel tests (Goodman I version; Baron & Kenny, 1986) tested the significance of the indirect path of own responsiveness affecting perceptions of partner responsiveness, in turn affecting satisfaction (combination of Paths A and C in Figure 1).

Two-level multilevel models (cf. Bryk & Raudenbush, 1992; Nezlek, 2001) were tested using the HLM 5.0 program (Raudenbush, Bryk, Cheong, & Congdon, 2000). These analyses modeled individuals (Level 1) as nested within couples (Level 2).[5] Given the limited degrees of freedom at Level 1 (only two individuals per couple), slopes were modeled as fixed across couples, whereas intercepts were modeled as randomly varying (cf. Campbell & Kashy, 2002; Kashy & Kenny, 2000). All variables were standardized across the entire sample to facilitate comparison of the effects of the predictor variables on the outcome variables across measures and studies.

Projection of Own Responsiveness

Two sets of models tested hypotheses regarding projection of own responsiveness. Results of these analyses are presented in Table 1.[6] The first set of models (see Model 1 columns in Table 1) presents effects of own responsiveness (projection) and partner responsiveness (accuracy) on perceptions of partner responsiveness. The second set of models (see Model 2 columns in Table 1) includes the self-esteem and attachment personality variables as additional predictors. Results support predictions regarding projection of responsiveness; in both safe haven and secure base domains, participants' judgments of their partner's responsiveness were more strongly predicted by their own responsiveness (Path A in Figure 1) than by their partner's self-reported responsiveness (Path B in Figure 1). Notably, the partner's self-reported responsiveness also predicted the perceiver's perceptions of that responsiveness, suggesting that these perceptions were largely projected but also held a kernel of truth. Such agreement suggests some validity to the partners' reports of their own responsiveness. That this pattern was observed in Model 2 suggests that projection of own responsiveness had effects on perceived partner responsiveness that were unique from the effects emphasized by the personality perspective on perceived partner responsiveness (at least a personality perspective emphasizing attachment or self-esteem).

Table 1
Effects of Own Responsiveness, Partner Responsiveness, and Personality Control Variables on Perceived Partner Responsiveness (Study 1)

	Safe haven support		Secure base support	
Predictor	Model 1	Model 2	Model 1	Model 2
Own responsiveness	.60***	.49***	.52***	.43***
Partner's responsiveness	.22***	.20***	.17**	.17***
Self-esteem	—	.05	—	.19**
Avoidant attachment	—	−.13*	—	−.16**
Anxious attachment	—	−.08	—	.02

Note. Coefficients are standardized hierarchical linear modeling coefficients. Dashes represent intentional omissions of variables from analyses, to be added in subsequent analyses.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Effects of Projected Responsiveness on Perceivers' Relationship Satisfaction

Having obtained evidence that perceptions of partner responsiveness are, in part, derived from own responsiveness, we next used a series of models to test whether projections of responsiveness would predict perceivers' relationship satisfaction. Results of these analyses, displayed in Table 2, suggest an effect of projected responsiveness on satisfaction. For both safe haven and secure base domains, own responsiveness strongly predicted satisfaction in Model 1 (Path D in Figure 1), and this effect was almost entirely (for safe haven responsiveness) or entirely (for secure base responsiveness) eliminated when the overlap between own responsiveness and perceptions of partner responsiveness was controlled in Model 2. Sobel tests (controlling for all other predictor variables) confirmed that the indirect effects of own responsiveness on satisfaction, mediated by perceptions of partner responsiveness (combination of Paths A and C in Figure 1), were significant. Thus, projected responsiveness predicted increased satisfaction and largely accounted for the effect of own responsiveness on satis-

[5] Separate ordinary least squares regression analyses were also conducted for men and women. As the pattern of results was identical, the presented analyses were simplified by collapsing across gender. The same is the case for results of Study 2.

[6] The sample sizes for models of secure base and safe haven responsiveness differ from the overall sample size because some participants did not complete all measures necessary for analyses within each domain of support (safe haven: Level 2 $N = 151$, Level 1 $N = 302$; secure base: Level 2 $N = 170$, Level 1 $N = 340$).

Table 2
Effects of Own Responsiveness, Partner Responsiveness, and Personality Control Variables on Satisfaction as a Function of Controlling for Perceived Partner Responsiveness (Study 1)

	Safe haven support		Secure base support	
Predictor	Model 1	Model 2	Model 1	Model 2
Own responsiveness	.47***	.14**	.27***	.00
Partner's responsiveness	.19***	.06	.12*	.02
Self-esteem	.18**	.15**	.20**	.08
Avoidant attachment	−.05	.03	−.10	.00
Anxious attachment	−.05	.01	−.08	−.12*
PPR	—	.68***	—	.62***
Own responsiveness → PPR Sobel test	7.63***		7.02***	

Note. Coefficients are standardized hierarchical linear modeling coefficients. Dashes represent intentional omissions of variables from analyses, to be added in subsequent analyses. PPR = perceived partner responsiveness.
* $p < .05$. ** $p < .01$. *** $p < .001$.

faction; responsive caregivers were satisfied primarily because they presumed that their spouses were similarly responsive.

Satisfaction–Benevolence Model

Although these mediation analyses suggest that the path of causation runs from own responsiveness to perceptions of partner responsiveness to relationship satisfaction, perhaps perceptions of partner responsiveness and relationship satisfaction are so highly correlated that either variable could serve as the mediator. However, in models regressing perceived partner responsiveness on own responsiveness (projection), partner responsiveness (accuracy), satisfaction, and the self-esteem and attachment control variables, own safe haven responsiveness continued to predict perceptions of partner safe haven responsiveness ($\beta = .23$, $p < .001$), and own secure base responsiveness continued to predict perceptions of partner secure base responsiveness ($\beta = .30$, $p < .001$). Of course, relationship satisfaction also predicted perceived partner responsiveness in these models (safe haven $\beta = .56$, $p < .001$; secure base $\beta = .48$, $p < .001$), but the pattern of results provides greater support for perceived partner responsiveness as a mediator of effects of own responsiveness on satisfaction than for satisfaction as a mediator of projection effects. These findings also distinguish the projection of responsiveness from the satisfaction-driven halo effects posited by the satisfaction–benevolence model. Own responsiveness appeared to affect perceived partner responsiveness independently of satisfaction.[7]

Evaluation of Partner's Interpersonal Traits

To examine the independence of projected responsiveness and positive illusions models, we retested the above models after controlling for evaluation of the partner's interpersonal traits (as well as the self-esteem and attachment control variables). Own responsiveness (projection) and partner responsiveness (accuracy) continued to predict perceptions of partner responsiveness in the safe haven domain ($\beta = .29$, $p < .001$, and $\beta = .09$, $p < .05$, respectively) and in the secure base domain ($\beta = .28$, $p < .001$, and $\beta = .08$, $p < .05$, respectively). Not surprisingly, given the conceptual overlap, evaluation of the partner's traits also predicted perceptions of partner responsiveness in the safe haven and secure base models (βs = .53 and .55, ps $< .001$, respectively). Furthermore, projected responsiveness predicted satisfaction independently of the effect of trait evaluations. For the safe haven model, own responsiveness continued to predict satisfaction in Model 1 ($\beta = .25$, $p < .001$), and this effect was reduced after including perceptions of partner responsiveness in Model 2 ($\beta = .13$, $p < .05$). Perceived partner responsiveness and trait appraisals had unique effects on satisfaction ($\beta = .44$, $p < .001$, and $\beta = .34$, $p < .001$, respectively). For the secure base model, own responsiveness continued to predict satisfaction in Model 1 ($\beta = .08$, $p = .056$), and this effect was eliminated after including perceptions of partner responsiveness in Model 2 ($p = .84$). Again, perceived partner responsiveness and trait appraisals had unique effects on satisfaction ($\beta = .27$, $p < .001$, and $\beta = .51$, $p < .001$, respectively). Thus, spouses appeared to project their own responsive behavior, and such projections predicted satisfaction, independently of their general evaluation of the partner's traits.

Commitment as Moderator of Projection

If projection of responsiveness is motivated by desires to maintain felt security, then the effect should be especially strong for those who are highly committed to maintaining their marriages. Additional models tested this prediction by including the main effects of commitment, own responsiveness, and partner responsiveness, as well as Commitment × Responsiveness interaction (product) terms. The Own Responsiveness × Commitment interaction approached significance for safe haven responsiveness ($\beta = .08$, $p = .08$) and was significant for secure base responsiveness ($\beta = .12$, $p < .01$), whereas the Partner Responsiveness × Commitment interactions were not significant (ps $> .27$). Conditional effects of own responsiveness on perceived partner responsiveness were examined at low (−1 *SD*) and high (1 *SD*) commitment. Own safe haven responsiveness more strongly predicted perceptions of partner safe haven responsiveness when commitment was high

[7] In addition, although not the focus of the projected responsiveness model, effects of the partner's responsiveness on perceivers' satisfaction (Path E in Figure 1) were mediated by the perceivers' recognition of that responsiveness (see Table 2). That is, the partner's self-reported responsiveness predicted the perceiver's satisfaction in Model 1, and this effect was eliminated after controlling for the overlap between the partner's responsiveness and the perceiver's perceptions of that responsiveness (accuracy) in Model 2. Sobel tests confirmed the significance of the indirect path of partner responsiveness on satisfaction, mediated by perceptions of partner responsiveness (combination of Paths B and C in Figure 1; safe haven $z = 4.16$, $p < .001$; secure base $z = 3.71$, $p < .001$). Thus, recipients reported more satisfaction when their partners reported caring for them but only to the extent that they were able to perceive that caring. Again, these findings suggest validity of the partners' reports of responsiveness. Moreover, controlling for satisfaction did not eliminate the effect of partners' responsiveness on perceivers' perceptions of partner responsiveness (safe haven $\beta = .09$, $p < .05$; secure base $\beta = .11$, $p < .01$), suggesting greater support for perceived partner responsiveness as a mediator of the effect of partner responsiveness on satisfaction than for satisfaction as a mediator of the effect of partner responsiveness on perceived partner responsiveness.

($\beta = .46$, $p < .001$) than when it was low ($\beta = .32$, $p < .001$; see Figure 2). Likewise, own secure base responsiveness predicted perceptions of partner secure base responsiveness more strongly when commitment was high ($\beta = .50$, $p < .001$) than when it was low ($\beta = .27$, $p < .001$), with a similar interaction pattern. Importantly, in addition to suggesting that the projection of responsiveness may be a motivated phenomenon, these results undercut the potential criticism that the projection of responsiveness is simply a result of shared method variance (similar items) or source variance (the same respondent completing both measures). One would need to argue that these criticisms apply more to people high in commitment than people low in commitment.

These findings support several predictions of the projected responsiveness model: (a) People appeared to project their own responsiveness in two different domains of support; (b) the projection of responsiveness, in turn, predicted satisfaction and explained why responsive caregivers were satisfied; (c) the projection of responsiveness was distinct from effects of personality traits, satisfaction, and evaluation of the partner's traits, which are effects emphasized in other theoretical models; and (d) the projection of responsiveness was greater for those with high relationship commitment, suggesting that it is, in part, a motivated process and is not due simply to shared method or source variance.

Study 2

According to Clark and Mills (1979, 1993; Mills & Clark, 1982), communal relationships are those in which members feel a responsibility for meeting the other's needs and in which benefits are given noncontingently in response to the other's needs. Most prior research has focused on the qualitative distinction between these types of relationships and exchange relationships—those in which giving benefits is contingent on past or expected receipt of comparable benefits (e.g., Clark, 1984; Clark, Dubash, & Mills, 1998; Clark & Mills, 1979; Clark, Mills, & Powell, 1986; Clark, Ouellette, Powell, & Milberg, 1987). However, Clark and Mills (1993; Mills & Clark, 1982) also emphasized that quantitative differences of *communal strength* exist across communal relationships. Communal strength refers to the degree of responsibility a person feels for the general welfare of a particular relationship partner. Mills, Clark, Ford, and Johnson (2004) developed a self-report measure of communal strength. Suggesting its validity, they found that differences in one's communal strength toward specific relationship partners predict the allocation of benefits to those partners (their Study 4) and self-reported provision of social support to those partners (their Study 5).

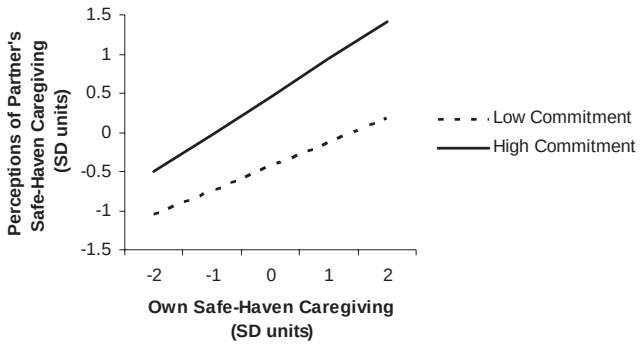

Figure 2. Effect of own safe haven responsiveness on perceived partner safe haven responsiveness as a function of commitment. SD = standard deviation.

Furthermore, Mills and colleagues (2004) found that people high in communal strength expected their partners to respond to their needs (their Study 1) and reported greater marital satisfaction (their Study 6). The projection of responsiveness model posits that these expectations of mutual responsiveness are subjectively confirmed through the projection process; people high in communal strength toward their spouse project this responsiveness and actually perceive their spouse as more responsive to their needs. This projection effect, in turn, may explain why people high in communal strength report more satisfaction; communally motivated providers may be happier with their relationships because they perceive their partners as communally motivated through the projection process. Study 2 tested these predictions. Moreover, Study 2 was longitudinal, providing the opportunity to test whether projection was present throughout the early years of marriage and whether projected responsiveness predicted temporal changes in satisfaction.

As in Study 1, Study 2 tested whether the projection of responsiveness could be explained by the satisfaction–benevolence model or the personality perspective (in this case, depression, attachment-related anxiety, and attachment-related avoidance). In addition, analyses controlled for communal orientation, the tendency to behave communally toward relationship partners in general and to expect communal behavior from relationship partners in general (Clark et al., 1987). Evidence suggesting projection of responsiveness and effects of projected responsiveness on satisfaction after controlling for communal orientation would support our argument that such effects reflect dyadic projection processes rather than merely individual differences in tendencies to perceive and expect any relationship to be mutually responsive.

Moreover, Study 2 provided additional tests to distinguish the projected responsiveness model from positive illusions. A positive illusions account of the effect of projected responsiveness on satisfaction might posit that projecting perceivers hold communal norms as ideals in marriage (cf. Clark et al., 2002) and that projecting own responsiveness is a means of subjectively fulfilling one's ideals. The subjective perception that a partner meets one's ideals, in turn, may be satisfying. Indeed, Murray et al. (1996) argued that perceiving partners as consistent with ideals is a positive illusion that enhances satisfaction. Whereas that may well be the case, the projected responsiveness model posits something different—that projected perceptions that a partner is responsive are directly related to satisfaction and cannot be completely explained by perceiving a partner as conforming to ideals. Study 2 presented analyses that controlled for communal ideals to test this alternative account.

Finally, Study 2 included a daily-diary component, which was used to test projection of responsiveness in regard to perceptions of the specific supportive behaviors enacted by a relationship partner (*enacted support* in the social support literature). This daily-diary component included assessments of the number of and motivation for specific supportive behaviors provided on each day. We expected that people would project their own support provided to a partner on a particular day onto the perceptions of the support received from a partner on that day. Moreover, own chronic

motivation to care for a relationship partner may be projected onto these specific daily perceptions of partner's enacted support, such that those who tend to care for their partners would perceive their partners as behaving more supportively across days. Support for these predictions would suggest that projection of responsiveness affects momentary feelings of relationship security in addition to retrospective generalizations.

Method

Participants and Procedure

Soon-to-be-married couples were recruited by a variety of means, including bridal fairs, the bridal registry at a local department store, ads in local newsletters, flyers, electronic bulletin boards, and word of mouth. Couples were eligible if they had never been married, were childless, and were scheduled to be married in the near future. Participants were predominately Caucasian and well-educated (80% finished college). On average, husbands were 27 years old and wives were 26 years old at the start of the study, although ages ranged from 20 to 38 years old.

Couples completed consent forms and questionnaires in their own homes a few weeks before their wedding day (T1; $N = 108$ couples) and completed mailed questionnaires at their homes just after the second year of marriage (T2; $M = 25$ months after their wedding; $N = 96$ couples). Participants were instructed to refrain from sharing their questionnaire responses with their partners.

Approximately 5 months after their wedding day, 100 of the couples completed the daily-diary component over a period of 5 days. They were instructed to independently complete the records each night and to refrain from discussing their responses with their partner. To reinforce completion of these records on a daily basis, participants were asked to seal all records for that day in an envelope at the end of each day and sign and date each envelope.

Questionnaire Measures

Own responsiveness to partner's needs. Participants completed the Mills et al. (2004) measure of communal strength—a quantitative aspect of communal relationships reflecting the degree of motivation to be responsive to a specific partner's needs. The 10 items were answered on 10-point response scales (0 = *not at all*, 10 = *extremely*). This measure was completed in reference to the respondent's motivation to care for his or her spouse (e.g., "How far would you be willing to go to help your spouse?", "How much would you be willing to give to benefit your spouse?"; T1 $\alpha = .64$, T2 $\alpha = .76$).

Perceived partner responsiveness. Perceptions of partner responsiveness to one's needs were assessed using two measures. The first was the measure of communal strength developed by Mills et al. (2004), modified to assess perceptions of the spouse's responsiveness (e.g., "How far would your spouse be willing to go to help you?", "How much would your spouse be willing to give to benefit you?") and answered using the same response scale (T1 $\alpha = .82$, T2 $\alpha = .86$). The second measure of partner responsiveness was the perceived partner responsiveness subscale developed by Boon and Holmes (1991). Respondents answered the eight items (e.g., "My partner has always been responsive to my needs and feelings," "I feel that my partner can be counted on to help me") on 7-point response scales (1 = *strongly disagree*, 7 = *strongly agree*; T1 $\alpha = .82$, T2 $\alpha = .89$). Scores on these two measures were highly correlated at each assessment point (T1 $r = .54$, T2 $r = .62$). To simplify results, they were standardized and then averaged to create a single index of perceived partner responsiveness.

Marital satisfaction. Marital satisfaction was assessed with two measures. The first was Norton's (1983) Quality of Marriage Index, which consists of six items (e.g., "We have a good relationship," "My relationship with my spouse makes me happy") answered on 5-point response scales (1 = *strongly disagree*, 5 = *strongly agree*; T1 $\alpha = .90$, T2 $\alpha = .95$). The second measure was Hendrick, Dicke, and Hendrick's (1998) Relationship Assessment Scale, which consists of seven items (e.g., "To what extent are you satisfied with your relationship?", "To what extent is this relationship good compared to most?") answered on 5-point response scales (1 = *not much*, 5 = *very much*; T1 $\alpha = .70$, T2 $\alpha = .85$). Scores on these two scales were highly correlated (T1 $r = .54$, T2 $r = .83$). To simplify results, they were standardized and then averaged to create an index of marital satisfaction.

Depressive symptoms. Depressive symptoms were assessed using the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). This 20-item measure assesses four dimensions of depressive symptoms occurring over the past week, including depressive affect (e.g., "How often did you think your life had been a failure?"), somatic symptoms (e.g., "How often was your sleep restless?"), positive affect (e.g., "How often did you enjoy life?"—reversed), and interpersonal relations (e.g., "How often did you feel lonely?"). Items were answered on 4-point response scales (0 = *Rarely or none of the time*, 1 = *Some or a little of the time*, 2 = *Occasionally or a moderate amount of the time*, 3 = *Most or all of the time*; T1 $\alpha = .86$, T2 $\alpha = .91$).

Attachment-related anxiety and avoidance. Attachment anxiety and avoidance were assessed using the 18-item measure developed by Simpson, Rholes, and Phillips (1996).[8] The attachment-related avoidance subscale consists of eight items assessing discomfort with closeness (e.g., "I'm not very comfortable having others depend on me," "I'm somewhat uncomfortable being too close to others") answered on 7-point response scales (1 = *strongly disagree*, 7 = *strongly agree*; T1 $\alpha = .80$, T2 $\alpha = .80$). The attachment-related anxiety subscale consists of nine items assessing anxiety about others' acceptance (e.g., "I often worry that my partner[s] don't really love me," "I usually want more closeness and intimacy than others do") answered using the same response scales (T1 $\alpha = .75$, T2 $\alpha = .80$).

Communal orientation. Participants completed the Communal Orientation Scale (Clark et al., 1987), a 14-item measure of the tendency to prioritize responsiveness to multiple relationship partners' needs and to expect the same on the part of partners (e.g., "When making a decision, I take other people's needs and feelings

[8] Because of a clerical error, one item was omitted from the attachment measure.

into account," "When I have a need that others ignore, I'm hurt"; T1 $\alpha = .75$, T2 $\alpha = .81$).

Communal ideals. Communal ideals were assessed using a measure developed specifically for the marriage study. Participants read the following description:

> The way marital relationships ideally should operate is that each person should pay attention to the other person's needs. Each person should give a benefit to the other in response to the other's needs when the other has a real need that he or she cannot meet by him or her self. Each person should do this to the best of his or her ability so long as the personal costs are reasonable. When one person does something for the other, the other should not owe the giver anything.

Participants then indicated their agreement with the statement "I believe that this is the way marital relationships ideally should operate" on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*).

Daily-Diary Measures

Daily-diary participants completed a form at the end of each day for every benefit given to or received from their partner earlier that day. After describing the benefit, participants indicated whether each of 12 possible motivations described the donor's (whether the donor was the self or the partner) motivation for giving the benefit. An index of communal motivation for giving the benefit was created by summing the number of endorsements of three communal motivation items ("to meet his [her] needs," "to show I care about him [her]," and "to please him [her]"). Aggregating across benefits, we computed the number of benefits that one gave and one's average communal motivation for giving benefits on each day (measures of daily own responsiveness and daily partner's responsiveness) and the number of benefits received from one's partner and perceptions of the partner's communal motivation for giving benefits on each day (measures of daily perceived partner responsiveness).

Results and Discussion

Analysis Strategy

The strategy for analyzing questionnaire data was identical to that used in Study 1. Effects of own responsiveness on perceptions of partner responsiveness after controlling for the partner's self-reported responsiveness indicated projection of own responsiveness. Mediation of the effect of own responsiveness on satisfaction by perceptions of partner responsiveness signified an effect of projected responsiveness on satisfaction. Again, two-level multilevel models accounted for the nesting of participants within couples and modeled intercepts as randomly varying across couples.

Projection of Own Responsiveness

To examine projection and accuracy in perceptions of partner responsiveness, we regressed perceived partner responsiveness onto own responsiveness (projection) and partner's responsiveness (accuracy or understanding). A second set of models included the depression, attachment, and communal orientation control variables. Shown in Table 3, own responsiveness predicted perceptions of partner responsiveness (Path A in Figure 1) more strongly than the partner's responsiveness (Path B in Figure 1), although both effects were significant. Including the personality variables in Model 2 did not notably alter these effects. This pattern of results was found for both T1 and T2 models. Thus, as in Study 1, perceptions of partner responsiveness were largely projected but also held a kernel of truth, and this was the case before marriage as well as 2 years into marriage. The accuracy effect suggests validity of the partners' reports of their responsiveness. That the projection effect was largely unaltered after controlling for the personality variables provides empirical evidence for the distinction between the projected responsiveness model and the personality model; own responsiveness explained variance in perceived partner responsiveness that was unique from the variance explained by the personality variables.

Effects of Projected Responsiveness on Relationship Satisfaction

Next, a series of analyses tested whether projected responsiveness would predict marital satisfaction, controlling for the personality variables. Shown in Table 4, own responsiveness significantly predicted satisfaction in Model 1 (Path D in Figure 1), and this effect was eliminated when controlling for perceptions of partner responsiveness in Model 2. That is, projection of own responsiveness accounted for the effect of own responsiveness on satisfaction. This was the case at both assessment waves. Sobel tests of the indirect path of own responsiveness on satisfaction via perceptions of partner responsiveness (combination of Paths A and C in Figure 1) were significant. These results support predictions that projected responsiveness would predict satisfaction and explain the satisfaction of responsive caregivers.

Longitudinal analyses examined effects of projected responsiveness on residualized change in marital satisfaction. In Model 1, T2 satisfaction was regressed on T1 satisfaction, T1 own responsiveness, and T1 partner responsiveness, as well as T2–T1 difference scores reflecting temporal change in own responsiveness, partner responsiveness, and perceived partner responsiveness. T1 per-

Table 3
Effects of Own Responsiveness, Partner Responsiveness, and Personality Control Variables on Perceived Partner Responsiveness (Study 2)

	T1		T2	
Predictor	Model 1	Model 2	Model 1	Model 2
Own responsiveness	.51***	.47***	.47***	.40***
Partner's responsiveness	.17**	.17**	.18**	.18**
Depression	—	−.24***	—	−.20**
Avoidant attachment	—	.00	—	−.02
Anxious attachment	—	−.12*	—	−.16**
Communal orientation	—	.00	—	−.03

Note. Coefficients are standardized hierarchical linear modeling coefficients. Dashes represent intentional omissions of variables from analyses, to be added in subsequent analyses. T1 = Time 1; T2 = Time 2.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4
Effects of Own Responsiveness, Partner Responsiveness, and Personality Control Variables on Concurrent Satisfaction as a Function of Controlling for Perceived Partner Responsiveness (Study 2)

	T1		T2	
Predictor	Model 1	Model 2	Model 1	Model 2
Own responsiveness	.26***	.00	.25***	−.05
Partner's responsiveness	.06	−.03	.18**	.05
Depression	−.12†	−.02	−.21**	−.08
Avoidant attachment	−.10	−.11†	.03	.03
Anxious attachment	−.19**	−.11†	−.16**	−.05
Communal orientation	.05	.05	.07	.09†
PPR	—	.54***	—	.73***
Own responsiveness → PPR Sobel test	5.64***		5.90***	

Note. Coefficients are standardized hierarchical linear modeling coefficients. Dashes represent intentional omissions of variables from analyses, to be added in subsequent analyses. T1 = Time 1; T2 = Time 2; PPR = perceived partner responsiveness.
† $p < .06$. ** $p < .01$. *** $p < .001$.

ceived partner responsiveness was included in Model 2.[9] Shown in Table 5, T1 own responsiveness predicted temporal changes in satisfaction in Model 1 (Path D in Figure 1), and this effect was eliminated in Model 2. T1 perceived partner responsiveness predicted later satisfaction in Model 2 (Path C in Figure 1). The Sobel test of the indirect effect of T1 own responsiveness on residualized change in satisfaction, mediated by T1 perceptions of partner responsiveness (combination of Paths A and C in Figure 1), was significant. These findings suggest that projected responsiveness predicted longitudinal change in satisfaction and explained why responsive caregivers became more satisfied over time.

Satisfaction–Benevolence Model

Additional analyses tested whether perceived partner responsiveness and satisfaction had interchangeable mediating effects due to their strong relationship. Switching the mediator with the outcome, these analyses tested the effect of own responsiveness on perceived partner responsiveness after controlling for satisfaction (as well as the depression, attachment, and communal orientation control variables). Contrary to this alternative explanation, own responsiveness continued to predict perceived partner responsiveness (the projection effect) at T1 ($\beta = .36$, $p < .001$) and T2 ($\beta = .25$, $p < .001$). As one would expect, satisfaction had significant effects in these models (T1 $\beta = .43$, $p < .001$; T2 $\beta = .61$, $p < .001$). However, these analyses provide greater support for perceived partner responsiveness as a mediator of the effect of own responsiveness on satisfaction than for satisfaction as the mediator of projection effects. Moreover, the independent effects of own responsiveness and relationship satisfaction on perceived partner responsiveness provide empirical evidence for the distinction between the satisfaction–benevolence model, which posits that perceptions of partner responsiveness are satisfaction-based halo effects, and the projected responsiveness model.[10]

Communal Ideals

A more general positive illusions account of the projected responsiveness findings is that people were not directly projecting their responsiveness but were, instead, projecting their ideals for relationships. Likewise, the effect of projected responsiveness on satisfaction may, instead, reflect an effect of seeing one's partner as consistent with those ideals. To test this alternative, we retested the models presented in Tables 3 and 4 after including communal ideals as an additional predictor. Own responsiveness continued to predict perceptions of partner responsiveness at T1 ($\beta = .48$, $p < .001$) and T2 ($\beta = .40$, $p < .001$). In addition, own responsiveness predicted concurrent satisfaction in Model 1 at both assessment waves (T1 $\beta = .25$, $p < .001$; T2 $\beta = .26$, $p < .001$), and these

[9] T2–T1 difference scores were included as control variables in the longitudinal analyses to control for regression to the mean in predictor variables. Because of measurement error, T1 predictor variables regress to the mean over time, indicated by negative linear effects of T1 variables on T2–T1 change (own responsiveness $\beta = -.34$, $p < .001$; perceived partner responsiveness $\beta = -.54$, $p < .001$; depression $\beta = -.32$, $p < .001$; attachment-related avoidance $\beta = -.46$, $p < .001$; attachment-related anxiety $\beta = -.48$, $p < .001$; communal orientation $\beta = -.31$, $p < .001$). Yet, theoretically, temporal change in a variable and T1 values should have similar effects on residualized change in satisfaction (e.g., high T1 perceived partner responsiveness and temporal increases in perceived partner responsiveness should both predict temporal increases in satisfaction). Empirically, this is also true (see Table 5, Model 2). Because of the negative relation between initial predictor values and change in the predictor and the positive effect of these two variables on the criterion, a suppressor situation is created unless that negative relation is eliminated from the effect estimates by controlling for both T1 predictor values and temporal change. This logic is similar to that guiding the common practice of predicting residualized change in criterion variables by controlling for T1 assessments of the criterion, thereby controlling for regression to the mean in the criterion. In the present approach, a longitudinal effect is indicated by an effect of the T1 predictor variable (partialing out change in the predictor) on residualized change in the criterion, independent of how the predictor variable changes over time, whereas correlated changes not due to the longitudinal effect are indicated by an effect of residualized change in the predictor variable (the T2–T1 change score, partialing out T1 values) on residualized change in the criterion. The anxious attachment, avoidant attachment, depression, and communal orientation variables were not simultaneously controlled in longitudinal analyses because controlling for these variables and each of their temporal change scores in one model would require including too many predictor variables for the sample size. The model displayed in Table 5 was retested after controlling for one of these control variables and its temporal change. The mediation of T1 own responsiveness effects by T1 perceived partner responsiveness was found in every model.

[10] Although not the focus of the projected responsiveness model, the partner's self-reported responsiveness also predicted satisfaction at the second assessment wave (Path E in Figure 1), and this effect was eliminated when controlling for perceptions of partner responsiveness at T2. The Sobel test of this indirect path (partner responsiveness → perceptions of partner responsiveness → satisfaction; combination of Paths B and C in Figure 1) was also significant ($z = 3.12$, $p < .01$). Similar to results of Study 1, these findings suggest that having a responsive partner is satisfying to the extent that that responsiveness is subjectively perceived. The effect of the partner's self-reported responsiveness on the recipient's satisfaction provides further evidence for the validity of partner's reported responsiveness. In addition, partner responsiveness continued to predict perceived partner responsiveness (the accuracy effect) after controlling for satisfaction at T1 ($\beta = .14$, $p < .01$) and T2 ($\beta = .07$, $p = .082$), providing greater support for perceived partner responsiveness as a mediator of effects of partner responsiveness on satisfaction than for satisfaction as a mediator of accuracy effects.

effects were eliminated after controlling for perceived partner responsiveness in Model 2 at both assessment waves (T1 $p = .82$, T2 $p = .50$). Ideals did not significantly predict perceived partner responsiveness ($ps > .50$) or satisfaction ($ps > .12$).

Perceptions of Enacted Support in Daily-Diary Component

The 874 daily observations were nested within 200 individuals who were, in turn, nested within 100 couples. A series of three-level multilevel models tested predictions while accounting for this nested data structure. We expected that people would project their daily responsiveness. In particular, own daily responsiveness (whether the number of benefits given to a spouse or the communal motivation for giving benefits to the spouse) would predict analogous daily perceptions of the partner's responsiveness after controlling for the partner's self-reported daily responsiveness (accuracy). Thus, number of benefits received from a spouse and perceptions of the spouse's communal motivation for providing benefits constituted day-level criterion variables, predicted by both partners' analogous measures of day-level benefit provision (daily number of benefits given or one's own communal motivation for giving).

Furthermore, we expected that relatively chronic tendencies to respond to the spouse's needs would elevate perceptions of the spouse's daily responsiveness, increasing the mean perception of responsiveness across the diary period—a projection of chronic responsiveness onto perceptions of recent, specific behavior. Therefore, we included individual differences in own and partner's T1 communal strength as (samplewide standardized) Level 2 predictors of the intercepts. (Intercepts reflect each individual's average perceptions of partner responsiveness across days.) In sum, these models examined main effects of daily own responsiveness and chronic own responsiveness on daily perceptions of partner responsiveness, controlling for the partner's daily and chronic responsiveness. Level 1 and Level 2 intercepts were modeled as random.

Results of the analyses are displayed in Table 6. Suggesting projection of daily responsiveness (upper portion of Table 6), daily changes in the number of benefits participants reported giving to their partners predicted changes in the number of benefits participants reported receiving from their partners, independently of the number of benefits their partners reported giving. Likewise, daily changes in own communal motivation for giving benefits to partners predicted changes in perceptions of partner's communal motivation for giving more strongly than did change in partners' self-reported communal motivation for giving. That is, people saw their partners as more responsive on days when they themselves were more responsive. Suggesting projection of chronic responsiveness (lower portion of Table 6), individual differences in own responsiveness, but not in partner's responsiveness, predicted average number of benefits participants reported receiving from their partners across the diary period. Those who chronically cared for their partners perceived their partners as providing more benefits than did those who did not care for their partners.

These findings provide additional support for the projection of responsiveness model: (a) People appeared to project their own communal strength; (b) this projection of responsiveness, in turn, predicted concurrent satisfaction and longitudinal change in satisfaction and explained why people high in communal strength were more satisfied; (c) the projection of responsiveness was distinct from effects of personality variables, satisfaction, and communal ideals, which distinguish projected responsiveness from alternative explanations derived from the personality, satisfaction–benevolence, and positive illusions perspectives; and (d) people appeared to project daily support provision and chronic responsiveness onto perceptions of the partner's enacted supportive behaviors, suggesting that the projection of responsiveness is not limited to retrospective generalizations about responsiveness. People seem to project their own acute and chronic responsiveness onto perceptions of their partner's everyday supportive acts.

Table 5
Effects of Own Responsiveness and Partner Responsiveness on Residualized Change in Satisfaction as a Function of Controlling for Perceived Partner Responsiveness (Study 2)

Predictor	Model 1	Model 2
T1 satisfaction	.44***	.25***
T1 own responsiveness	.14*	−.06
T1 partner's responsiveness	.07	.00
T1 PPR	—	.53***
Own responsiveness change	.15**	.03
Partner's responsiveness change	.17**	.10*
PPR change	.51***	.76***
T1 own responsiveness → T1 PPR Sobel test	5.34***	

Note. Coefficients are standardized hierarchical linear modeling coefficients. Change variables are T2–T1 difference scores. Dash represents an intentional omission of the variable from analyses, to be added in subsequent analyses. T1 = Time 1; T2 = Time 2; PPR = perceived partner responsiveness.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6
Effects of Daily and Chronic Responsiveness on Daily Perceptions of Partner Responsiveness (Study 2)

Predictor	Perceived number of benefits	Perceived communal motivation for giving
Effects of daily own responsiveness on daily perceived responsiveness		
Daily own responsiveness	.34***	.23***
Daily partner's responsiveness	.36***	.08*
Effects of chronic responsiveness on mean daily perceived responsiveness		
Own responsiveness	.22**	.01
Partner's responsiveness	−.02	.00

Note. Daily number of benefits given was used as the measure of daily responsiveness in the model predicting daily number of benefits received from partner. Daily average self-reported communal motivation for giving benefits was used as the measure of daily responsiveness in the model predicting daily average perceived communal motives for partner's giving. Level 3 $N = 100$. Level 2 $N = 200$. Level 1 $N = 874$.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Study 3

In Study 3, we experimentally manipulated perceptions of own responsiveness and then measured perceptions of partner responsiveness. If people project their own responsiveness onto the

responsiveness perceived in their relationship partners, then temporarily reduced perceptions of own responsiveness should reduce perceptions of partner responsiveness. The experimental manipulation was based on research conducted by Schwarz (1998) on accessibility experiences. This research suggests that the experience of ease or difficulty during recall is used as a source of information that may bias subsequent judgments. For example, people who were asked to recall 12 instances of their own assertive behavior (a presumably difficult task) subsequently perceived themselves as less assertive than people who had to recall six instances of assertive behavior (a comparatively easy task). The experienced difficulty of recalling 12 instances likely convinced participants in the difficult condition that they must not be that assertive after all. Similarly, people estimated a higher prevalence of chronic diseases in the population when they were previously asked to recall three examples of chronic diseases than when they were asked to recall nine examples. Similar findings pertain to generation of attitude arguments and subsequent attitudes, recall of health behaviors and subsequent perceptions of vulnerability to heart disease, and generation of reasons for product consumption and subsequent attitudes toward the product (see Schwarz, 1998, for a review).

In the current study, we expected that recalling eight instances of providing support to a relationship partner would be considerably more difficult than recalling two instances of support provision. Using the experienced difficulty of generating examples of their support provision as a source of information regarding their own responsiveness, participants should subsequently perceive their relationship partners as less responsive through the projection process.

Method

Participants and Procedure

One hundred fifty-eight participants (42 men and 116 women; *M* age = 25 years) were recruited through electronic bulletin board advertisements for an Internet research survey. Participants were asked to complete the electronic survey in regard to their romantic relationship partner ($n = 101$) if they were currently involved in a romantic relationship or in regard to a close friend ($n = 50$) if they were not currently romantically involved. Seven participants did not indicate the type of relationship. Participants randomly assigned to the difficult recall condition ($n = 78$) were asked to describe eight things that they had done to help the relationship partner in the past 7 days. Those in the easy recall condition ($n = 80$) were asked to describe two things. Following this recall difficulty manipulation, participants completed the following measures.

Measures

Perception of partner's responsiveness. Participants completed a three-item index assessing perceptions of the other's motivation to care for their needs (i.e., "How motivated is this person to attend to your needs?", "How motivated is this person to provide emotional support to you when you are stressed?", "How motivated is this person to help you out [e.g., do favors for you]?"). Items were completed on 5-point response scales (1 = *not at all motivated*, 5 = *extremely motivated*; $\alpha = .92$). In addition, participants indicated their agreement with nine statements regarding the other's supportiveness, which were adapted from measures of communal strength and caregiving (Feeney, 2004; Kunce & Shaver, 1994; Mills et al., 2004; e.g., "This person is very good at recognizing my needs and feelings," "This person is always there for me whenever I need him/her," "This person is someone I can turn to when I am feeling sad or worried or stressed about something," "Meeting my needs is a high priority for this person"), on 6-point response scales (1 = *strongly disagree*, 6 = *strongly agree*; $\alpha = .90$). The two measures were highly correlated ($r = .83$). To simplify results, we standardized the two scores and averaged them to create a composite measure of perceived partner responsiveness.

Manipulation checks. As a check on the manipulation of own responsiveness, participants completed an analogous set of items regarding their own motivation to care for the other (e.g., "How motivated are you to attend to this person's needs?"; $\alpha = .87$) and their own supportiveness (e.g., "I am someone this person can turn to when he/she is feeling sad or worried or stressed about something"; $\alpha = .85$). Scores on these two measures were highly correlated ($r = .84$) and were standardized and averaged to create an index of own responsiveness.

In addition, after completion of the other measures, participants indicated the experienced difficulty of the recall task (1 = *extremely easy*, 6 = *extremely difficult*).

Results and Discussion

A one-way analysis of variance examined the effect of manipulated difficulty recalling own responsiveness on perceptions of partner responsiveness. As expected, those in the difficult recall condition perceived their relationship partners as less responsive ($M = -0.14$) than did those in the easy recall condition ($M = 0.17$), $F(1, 149) = 4.38$, $p < .05$. Examination of the experienced difficulty manipulation check item revealed that participants in the difficult recall condition experienced the recall task as more difficult ($M = 3.11$) than did those in the easy recall condition ($M = 2.26$), $F(1, 149) = 17.19$, $p < .001$. Regression analyses tested whether experienced difficulty mediated the effect of recall difficulty condition on perceived partner responsiveness. The effect of recall condition ($\beta = -.17$, $p < .05$) was not significant after controlling for perceptions of experienced difficulty ($p = .17$). Controlling for recall condition, experienced difficulty continued to predict perceptions of partner responsiveness ($\beta = -.17$, $p = .05$). Thus, participants who were asked to report eight examples of support provision subsequently perceived their relationship partner as less responsive than did those asked to report only two examples of support provision, and this was because they experienced difficulty in reporting those eight examples. These results support the projection of responsiveness model.

However, interpretation of the results is slightly complicated by the insignificant effect of experimental condition on self-reported own responsiveness. The pattern of means was in the predicted direction (difficult condition $M = -0.06$, easy condition $M = 0.10$), but the effect did not reach conventional levels of significance, $F(1, 149) = 1.24$, $p = .27$. We believe this may have been due to participants' reluctance to admit, to themselves or to a public audience, temporary reductions in general motivations to

care for a relationship partner when such motivations are usually strong. Yet they appeared willing to admit experiencing difficulty with recalling support provision, which may have been a measure of temporary reductions in self-perceived own responsiveness that was less prone to reactance, self-deception, and impression management biases. Alternatively, it may be the case that the experienced difficulty manipulation increased accessibility of own supportive behaviors, which cancelled out the effects of experienced recall difficulty on self-perceived own responsiveness. Indeed, Schwarz (1998) reported evidence that accessibility and experienced difficulty can have opposite effects on judgments in this experimental paradigm. Nevertheless, the effect of manipulated difficulty in recalling own support provision on perceived partner responsiveness suggests that this difficulty was projected, perhaps via an unconscious route, onto the other's responsiveness.[11]

General Discussion

In communal relationships, people want their partners to care about their needs and noncontingently provide support when support is needed. Indeed, perceived partner responsiveness to needs has been implicated as a cardinal determinant of relationship well-being (Reis et al., 2004). The present research proposed and tested a social projection account of the process underlying the construction of these perceptions. According to this model, people who provide support to a partner or are motivated to care about a partner's needs project this supportiveness and care onto their partners, perceiving their partners as similarly supportive and caring. Likewise, those who do not strongly care for their partners may see their partners as similarly uncaring. Moreover, because of the close link between perceptions of partner responsiveness and satisfaction in communal relationships, the social projection model posits that projected perceptions of partner responsiveness promote (or undermine in the case of low responsiveness) perceivers' relationship satisfaction. Two dyadic studies and one experiment provided evidence that supports this model.

Some Mutual Understanding of Responsiveness

How do people judge partner responsiveness? The obvious answer is that they base their judgments on their partner's actual responsiveness. The partner, it might be expected, judges his or her own responsiveness in the same way. This, in turn, ought to lead to a degree of mutual understanding, evidenced by a positive relation between perceptions of partner responsiveness and the partner's self-reported responsiveness. Indeed, both of our dyadic studies found evidence of this accuracy effect, suggesting some degree of mutual understanding regarding supportiveness and communal motivation.

The Projection of Responsiveness

Our social projection model of perceived partner responsiveness posits that, in addition to modestly accurate detection, people project their own behavioral supportiveness and motivations to care for a partner's needs onto the supportiveness and motivations they perceive in the partner. This projection effect was observed in all three of the present studies. In Study 1, people who provided safe haven or secure base support to their spouses perceived that their spouses provided support in return, whereas those who were not supportive perceived their spouses as similarly unsupportive. In Study 2, people perceived that their spouses shared their communal motivation or lack thereof. These projection effects appeared to be stronger than the accuracy effects (see also Abbey et al., 1995; Kenny & Acitelli, 2001). In Study 3, people who were randomly assigned to experience difficulty in recalling their own provision of support to a relationship partner subsequently perceived their partner as less responsive.

The projection of responsiveness does not appear limited to retrospective abstractions about a partner's responsiveness. Participants' reports of the number of mundane benefits provided to them by their spouses across the daily-diary component of Study 2 were predicted by their own motivation to care for their partners, assessed several months earlier, rather than by their partner's motivation to care. Furthermore, participants appeared to project even their fleeting supportiveness and intentions; daily fluctuations in number of benefits provided to spouses predicted the number of benefits that their spouses were perceived to provide independently of their spouse's accounts of the benefits they gave, and those who saw their own provision of benefits as motivated by communal reasons perceived that their partner's benefit provisions were similarly motivated independently of their partner's self-reported motives. Thus, projection of responsiveness was found in abstract generalizations about past responsiveness as well as in the accounting and interpretation of recent supportive acts, suggesting that the projection process has implications for moment-to-moment feelings of relationship security.

We expect that the projection of responsiveness is a consequence of both cognitive and motivational processes. Regarding cognitive processes, people who are chronically motivated to respond to their partner's needs, as well as those who are temporarily motivated, have heightened accessibility to trait and goal constructs regarding responsiveness. The activation of such representations likely causes people to perceive their partners as similarly responsive (cf. Kawada et al., 2004; Marks & Miller, 1987). Moreover, as mutual responsiveness is a norm in communal relationships, people come to expect reciprocity in general communal responsiveness, and these prototypes and expectations likely bias perceptions of partner responsiveness.

The current research can rule out some other cognitive explanations. General expectations to have communal relationships do not appear to account for the projection of own responsiveness, as the projection effect was observed in Study 2 after controlling for communal orientation. Thus, the projection effect appears to be a dyadic process rather than a tendency for generally caring people to see all others as caring. Also, the projection of responsiveness does not appear to be a reflection of more general positive evaluations of relationship partners or of having high communal ideals

[11] Preliminary analyses examined main effects and interactions involving sex and relationship type (romantic or not romantic). Not surprisingly, people reported higher own responsiveness ($M = 0.12$) and perceived partner responsiveness ($M = 0.23$) when reporting on romantic relationships than when reporting on nonromantic relationships (Ms $= -0.30$ and -0.32, respectively), $F(1, 143) = 4.68$, $p < .05$, and $F(1, 143) = 8.05$, $p < .01$, respectively. Most important, the effects of manipulated recall difficulty were not qualified by sex or relationship type.

for relationships, as evidence for projection remained after controlling for evaluation of the partner's traits in Study 1 and after controlling for the extent to which communal norms were idealized in Study 2. Similarly, in both dyadic studies, responsiveness appeared projected even after controlling for general satisfaction, suggesting that projected responsiveness effects were not explained by halo effects driven by general happiness with the relationship.

Motivational factors are also likely relevant. Perhaps a primary motivation is the desire for felt security in one's most important communal relationships (cf. J. G. Holmes & Rempel, 1989), which can be maintained, in part, by perceiving that one's care is reciprocated. Motivation to support a partner reflects investment in the relationship and a desire for that relationship to be mutually communal. Caring perceivers likely project their responsiveness to protect this investment and subjectively fulfill their wishes. This process may protect the self from the threat that would undoubtedly arise if one were to acknowledge that one's care was not reciprocated (cf. Murray et al., 1996; Simpson et al., 1995). Providing preliminary evidence of this motivational explanation, Study 1 found that caring perceivers who reported a strong motivation to maintain their marriages (high commitment) were especially likely to project their caring. However, those with low commitment still exhibited the projection effect, albeit in weaker form, suggesting other sources of motivation or cognitive processes. Identifying those sources of motivation and processes is a task for future research.

At first glance, effects of third variables may appear as viable alternative explanations of these projection effects. For instance, people may have been motivated to present themselves or their relationships in a socially desirable fashion. Similarly, tendencies to privately perceive the self or one's relationships in a positive light (as a form of self-deception or Pollyannaism) may appear as explanations of projection. Such rosy self-presentations or self-perceptions may have influenced ratings of own responsiveness and partner responsiveness, operating as a third variable that explains the apparent projection effects. However, controlling for self-reports of self-esteem, attachment, depression, and relationship satisfaction, all measures that are likely influenced by these same biases, did not mitigate the projection effects in the dyadic studies. Also, tendencies to perceive or present the relationship positively cannot explain the effect of manipulated difficulty in recalling support provision on reduced perceptions of partner responsiveness found in Study 3.

Might our findings suggesting that projection effects are stronger than accuracy effects be explained by the fact that the same respondent completed measures involved in the former effects, whereas different respondents completed measures involved in the latter? After all, people likely respond to similarly worded questionnaire items about the self and their partner in similar ways because of idiosyncratic interpretations of item content. Controlling for other individual differences may not address this problem because it does not remove the shared variance due to item overlap. Several other aspects of the present research mitigate this concern. In Studies 1 and 2, measures of perceived partner responsiveness were composite measures consisting of a modified measure of own responsiveness as well as a second measure that was not administered as a measure of own responsiveness. Additional analyses using only the latter measure as the measure of perceived partner responsiveness produced a similar pattern of results. In Study 2, own chronic responsiveness predicted the number of benefit-record forms that participants chose to complete during the daily-diary component, an effect that is hardly vulnerable to the criticism that similarity in measurement explains projection effects. Moreover, the moderation by commitment found in Study 1 refutes the criticism that projection simply reflects shared source or method variance. A skeptic would need to argue that people who are committed to their relationships, relative to those who are less committed, are more likely to have a general tendency to complete similar measures in a similar manner. Finally, the effect of manipulated difficulty recalling own support on reduced perceptions of partner responsiveness in Study 3 cannot be explained by shared method variance.

This reasoning aside, the issue of similarity in measurement of own responsiveness and perceived partner responsiveness can be viewed in two ways. Similarity of measurement may inflate the projection effect because of shared method and source variance. However, using different means of assessing own responsiveness and perceived partner responsiveness may reduce the projection effect by adding noise. The projection model presumes that people see their partners as similar to themselves. Allowing for the full expression of that perceived similarity requires that measures of own responsiveness and measures of perceived partner responsiveness measure identical aspects of responsiveness with identical validity and reliability. For example, a person who views the self as highly motivated to relieve a partner's distress but also admits some intrusiveness during the partner's goal pursuits might project this same pattern of responsiveness onto the partner. Projection would be indicated if measures of own responsiveness and perceived partner responsiveness assessed relief of distress, intrusiveness, or both. However, the projection effect would be substantially reduced if own responsiveness reflected only one of these types of support and perceived partner responsiveness reflected the other. Using different measures of own responsiveness and perceived partner responsiveness would likely also reduce accuracy effects for the same reason.

Perhaps measures of own responsiveness are not valid indicators of one's actual responsiveness, thereby explaining the greater effects of projection than of accuracy. Several findings also undermine this alternative explanation. First, as the accuracy effects noted above reveal, measures of own responsiveness predicted the partner's perceptions of that responsiveness. People who cared for their partners had partners who were more likely to say that they received care. People who claimed to provide few benefits to their partner on any given day had partners who claimed to receive few benefits on that day. Most likely, self-reported responsiveness reflects true responsiveness that is expressed behaviorally, explaining why people exhibited this moderate agreement. Indeed, other research found a positive relation between communal strength and objectively assessed allocation of benefits (Mills et al., 2004). Finally, the possibility that measures of own responsiveness are invalid cannot explain the experimental evidence provided by Study 3. If projection effects were explained by invalid reports of the partner's own responsiveness, then perceptions of partner responsiveness should not have been affected by induced difficulty to recall own supportive behaviors, an effect that does not involve partners' reports of their own responsiveness.

Why Do Perceptions Seem Inaccurate? When Might They Be Accurate?

Perceptions of partner responsiveness might not match the partner's self-reported responsiveness for a variety of reasons. First, as the social support literature suggests (e.g., Dunkel-Schetter & Bennett, 1990; Lakey & Cassady, 1990; B. R. Sarason et al., 1987), a partner's behaviors are often sufficiently ambiguous that they allow for subjective interpretations of their supportiveness and intent. Second, many ways in which a partner is supportive may not be visible, such as when one refrains from providing advice because his or her partner wants independence (cf. Bolger et al., 2000; Feeney, 2004). Third, the exigencies of everyday life may cause partners to perform a wide range of supportive and unsupportive behaviors. Biases in attention may cause people to detect one type more than the other. Fourth, the extent of a partner's responsiveness may not be known because situations that would elicit that responsiveness have not occurred. Yet the partner, being ready to provide responsiveness should it be needed, may be quite aware of his or her own readiness to respond. Imagine, for instance, a spouse teaching her partner to ski. The partner may cautiously make his way down the trail, never even noticing the fact that she is conscientiously keeping her eyes on him, staying slightly behind him to be able to help him up and retrieve equipment should he fall. With good fortune, many people may not have had the pressing needs that would allow for a partner to express the full extent of his or her caring.

However, our research should not be taken as evidence that people are never accurate. We do believe that accuracy may sometimes dominate perceptions of partner responsiveness. Some situations call for specific and easily observable forms of support. When one needs a ride to the emergency room, does the partner leave work to provide it? The answer will be clear. Moreover, extremes of chronic responsiveness are likely detected. People may have difficulty construing a partner who is always hostile and neglectful as responsive regardless of how much they desire a responsive partner. Similarly, a partner who is always very caring is likely to be perceived as such regardless of the guilt that perception brings to uncaring perceivers. However, these situations are exceptions. In most everyday lives, projection may dominate because there is considerable latitude for subjective interpretation.

Interpersonal Effects of Projecting Responsiveness

The social projection model posits that the projection of responsiveness is tremendously important to understanding the success of communal relationships. Indeed, in both dyadic studies, we found that projected responsiveness strongly predicted perceivers' relationship satisfaction. People who cared for their relationship partners reported greater satisfaction in their relationships, and this effect was mediated by perceptions of partner responsiveness. That is, individuals who cared for their relationship partners were satisfied, in large part, because such individuals tended to believe that their partners were caring in return. Conversely, those who did not strongly care for their partners were dissatisfied, in large part, because they saw their partners as similarly uncaring. Study 2 showed this effect longitudinally; people who projected their own high level of care onto their partners became even more satisfied over time. By seeing caring as reciprocated, people who cared for their partner promoted their own satisfaction, whereas those who did not care appeared to undermine it.

These projected perceptions may enhance the perceiver's satisfaction for a variety of reasons. Most important, we think, is the fact that marriages are typically viewed as communal. Believing that one's partner cares for one's needs satisfies expectations for these types of relationships. That is, people who care for their partner can subjectively construct a mutual communal relationship by projecting their care. In addition, feeling cared for undoubtedly enhances one's sense of personal safety and security and affirms one's perceived value as a relationship partner (Leary & Baumeister, 2000), and relationships that provide these feelings are likely satisfying. The security conferred by projecting responsiveness likely also prevents the defensive and interpersonally damaging behaviors and cognitions that often ensue when lack of responsiveness is perceived (cf. Clark, 2005; Gottman & Levenson, 1992; Murray et al., 1998).

Implications for Theoretical Perspectives on Social Support

Social support research has focused on perceiver biases due to individual differences as explanations of perceivers' subjective perceptions of support (e.g., Collins & Feeney, 2004; Lakey & Cassady, 1990; B. R. Sarason et al., 1991; Vinokur et al., 1987). Other research has focused on the role of general relationship satisfaction in biasing perceptions of a partner's responsiveness (Kaul & Lakey, 2003; Lakey et al., 2002). The current research is not in conflict with these perspectives. Indeed, these variables were significant predictors of perceived partner responsiveness in the current studies. However, the current research suggests that own responsiveness to one's partner is an important factor, perhaps more proximal and powerful than these other factors, in the construction of these subjective perceptions of partner responsiveness. Given that own responsiveness is dyadic and specific to the relationship partner being judged, this conclusion may not be surprising. The present results do support the idea that a factor that likely varies not only between persons but also between specific relationships, namely, one's own felt responsiveness toward one's partner, does drive perceptions of partner responsiveness. This may partially explain Lakey and colleagues' (1996) finding that features of the relationship between recipient and supporter explained more variance in perceptions of support than did features of recipients or supporters alone. Theoretical perspectives on perceived social support may benefit from a greater focus on such dyadic factors.

In addition, the social projection model advocated here presumes a connection between one's role as support provider and one's role as support recipient. With few exceptions, the social support literature has not examined these roles in an integrated fashion. Instead, for the sake of simplicity and ease of analysis, much of this research has ignored the fact that people are both providers and recipients of social support, presenting disjointed analyses of these roles. The current research suggests a need for a greater emphasis on the fact that people are both support providers and support recipients. Through projection of own responsiveness and perhaps through other processes as well, their role as support providers has great relevance for their role as recipients.

Implications for Theoretical Perspectives on Relationship Processes

Several findings converge on the general idea that interpersonal cognition serves relational functions and is motivated by relational goals (cf. Murray, 1999). That is, people perceive their relationships and their relationship partners in ways that maintain and promote the relationships and often avoid cognitions that may threaten relationships. The projection of own responsiveness appears to be an example of interpersonally motivated cognition, as it is a means of subjectively constructing mutual communal relationships even when the realities of relationships fall short.

A related example of motivated interpersonal cognition is provided by research on positive relationship illusions, which suggests that people project their positive self-evaluations and ideals onto perceptions of their partners, perceiving their partners as similar to their own rosy self-images and ideals. Furthermore, perceiving partners in this idealized light enhances satisfaction (cf. Murray & Holmes, 1997; Murray et al., 1996). As this process is conceptually similar to that posited by the current model of projection of responsiveness, the current research sought to test whether projected responsiveness could be explained by a more general positive evaluation of the partner. Findings from Studies 1 and 2 provide evidence of projection of responsiveness and of its effects on satisfaction while controlling for evaluation of the partner's interpersonal traits and idealization of communal norms, respectively. Thus, the projection of responsiveness and its effects on satisfaction do not seem to be explained by general tendencies to evaluate the partner positively. General positive evaluations of a partner and projected perceptions of a partner's responsiveness may exert independent effects on satisfaction.

This research is also relevant to the dependency-regulation model posited by Murray, Holmes, and colleagues (e.g., Murray et al., 1998, 2000; Murray, Rose, Bellavia, Holmes, & Kusche, 2002). Their model presumes that people gauge a partner's regard and acceptance when they make choices regarding whether they should continue to invest in the relationship and depend on the partner. Those who perceive a partner as critical or rejecting, the model posits, react by reducing dependence on the partner as a means of protecting the self. That is, people who anticipate rejection may convince themselves that their relationships are not very important to them or that their partners have only limited virtues as a means of preemptively diminishing the threat of the forthcoming rejection. Importantly, this model posits that the perceptions of a partner's regard that trigger the dependency-regulation process may not always be veridical. Instead, proclivities to see partners as rejecting, such as low self-esteem or attachment-related anxiety, may cause people to defensively react to a rejection that is not really there, whereas tendencies to believe that others are accepting, due to high self-esteem or attachment security, may cause people to increase dependence on a partner who is not really all that accepting.

The present research suggests a dyadic mechanism that also affects judgments of a partner's regard. One's own responsiveness likely influences judgments of a partner's regard through the projection process, which, in turn, may affect willingness to risk dependence upon a partner. Those with low motivation to care for a partner's needs may see their partners as less motivated to care for the self through the projection process, triggering a defensive reduction of dependence and closeness, as well as derogation of the partner. In this way, projected responsiveness may trigger the dependency-regulation process. In addition, as willingness to depend on and invest in a relationship promotes motivation to care for the other's needs, the dependency-regulation process may affect own responsiveness. People who doubt a partner's regard may defensively reduce their motivation to care for the partner. In turn, through the projection process, people who have reacted by reducing communal motivations may continue to doubt the partner's regard. Thus, the projection of responsiveness may also be a consequence of the dependency-regulation process. The two processes likely work together, each shaping the factor that engages the other process.

Several studies have reported a relationship between responsive caregiving and satisfaction (Acitelli & Antonucci, 1994; Brunstein et al., 1996; Collins & Feeney, 2000; Mills et al., 2004). Clark and Grote (1998) described several mechanisms through which behaving communally toward one's partner can enhance satisfaction. For instance, when people care, they may come to see themselves as caring through self-perception and dissonance reduction, and seeing themselves in positive ways may enhance satisfaction. Their care may also create happy partners with whom they are more likely to be satisfied. The projection of responsiveness is an additional mechanism that likely explains why caregiving can promote the caregiver's satisfaction despite the fact that providing support often comes at a cost to the caregiver. Such costs may be viewed as benefits and availability of support when they are projected onto the other. In addition, our findings are relevant to classic studies documenting positive effects of helping on the helper's liking for the recipient (e.g., Jecker & Landy, 1969). Although such effects are often explained by the reduction of dissonance (e.g., justifying helping efforts by enhancing the recipient), they may also be explained by the projection of responsiveness (e.g., feeling liked by the recipient after providing help).

Along with effects of projected responsiveness on satisfaction, a second mediation model is implied by the current findings. As discussed above, although perceptions of partner responsiveness were largely biased by own responsiveness, there was also a small kernel of truth in these perceptions. Moreover, mediation analyses suggest that the interpersonal benefit of having a caring partner, in terms of an effect on the recipient's relationship satisfaction, hinged on this kernel of truth. That is, when the partner's self-reported responsiveness predicted one's own satisfaction, the effect was eliminated after controlling for perceived partner responsiveness (see footnotes 7 and 10, above). These results are consistent with much social support research suggesting that supportive acts must be perceived as such by recipients for their benefits to be realized (Cohen & Wills, 1985; Stroebe & Stroebe, 1996).

Why should this be the case? Many ways in which a caring partner provides tangible support may be mundane, and the presence or lack of this support per se may not notably affect either party, at least in regard to the generalized relationship satisfaction outcomes examined in this study. Taking the time to choose a birthday gift, for example, may have little relevance in and of itself to the partner's global satisfaction. The things one does and does not do for one's partner, however, can become pivotal when these actions communicate the extent to which one cares for the partner's needs (Ames, Flynn, & Weber, 2004; Clark, 2005). Forget-

ting a birthday matters when this symbolizes a broader lack of caring. As successful communication of this care depends on recipients' ability to decode the partner's behavior into messages about care, perceived partner responsiveness necessarily is the proximal mediator between the caregiver's actual caring and the recipient's satisfaction. Attempts to support one's partner that go unnoticed lack a communication of caring for needs and thus have little effect on the recipient's satisfaction. Similarly, seeing a particular behavior as reflecting more care than was the case, perhaps because one's own care is greater than one's partner's, may nevertheless increase one's satisfaction. Through accuracy and projection biases, then, perceived partner responsiveness appears to serve as a crucial intermediary variable that carries the influence of both partners' responsiveness on perceivers' relationship satisfaction.

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