"Walking on Eggshells": How Expressing Relationship Insecurities Perpetuates Them

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The authors present a model positing that when people are insecure about a relationship partner's acceptance, they often express emotional vulnerabilities to the partner, which causes them to believe the partner views them as highly vulnerable and insecure. In turn, this belief causes them to doubt the authenticity of the partner's expressions of positive regard, which may perpetuate the experience and expression of insecurity that initiated the process. Prototypes of interactions with interpersonally vulnerable individuals included partners' inauthentic expressions of regard (Study 1). Suggesting that these prototypes are applied to personal relationships when vulnerabilities are expressed, those who claimed to have expressed vulnerabilities doubted the partner's authenticity because they believed that they were viewed as vulnerable (Studies 2A, 2B, and 4). Authenticity doubts in turn predicted perceptions of rejection (Studies 3 and 4), which in turn predicted partner derogation and subsequent expressions of vulnerability (Study 4). An experimental manipulation of reflected appraisals of vulnerability increased doubts about the authenticity of a new acquaintance's expressions of emotion (Study 5). Relational insecurity may be perpetuated via the intrapersonal cognitive consequences of expressing it.

Keywords: close relationships, egocentrism, relationship security, acceptance, emotion expression

People have a strong need to belong in stable and caring relationships (Baumeister & Leary, 1995; Reis, Clark, & Holmes, 2004). The perception that a relationship partner values and has positive regard for the self is critical to the perception that one has such relationships, as it fosters confidence in the partner's motivation to maintain the relationship and to attend to one's needs (Holmes & Rempel, 1989; Murray, Holmes, & Collins, 2006; Tooby & Cosmides, 1996). Unfortunately, this belief is not a feature of all close relationships. Instead, in some relationships, people chronically doubt that their partners value, accept, and care for them. This is the case even when these doubts are not reflected in the partner's actual thoughts and affections; many people seem to underestimate a close partner's acceptance of and regard for the self (Murray, Holmes, Griffin, Bellavia, & Rose, 2001; Murray, Holmes, MacDonald, & Ellsworth, 1998). When it persists, this pessimistic interpretation of a partner's thoughts and feelings undermines the quality of the relationship both for the self and for the partner (Downey, Freitas, Michaelis, & Khouri, 1998; Lemay,

Clark, & Feeney, 2007; Murray, Bellavia, Rose, & Griffin, 2003). Moreover, it deprives the self of a potentially important source of self-esteem and affirmation (Leary & Baumeister, 2000; Murray et al., 1998). The current research proposed and tested a theoretical model of a normative process explaining how this type of relationship insecurity persists, even when it is confronted with a truly valuing, loving, and accepting partner.

The Expression-Based Authenticity Doubts Model

We posit a model of *expression-based authenticity doubts.* According to this model, when people are, for whatever reason, insecure about a partner's regard and acceptance, they typically believe that they have behaved in ways that have communicated insecurity and emotional vulnerability to the partner. These beliefs about expressing insecurities and vulnerabilities trigger other cognitions that ultimately perpetuate relationship insecurity. In particular, the knowledge that one has communicated interpersonal vulnerabilities regarding acceptance and rejection in the past causes *reflected appraisals of vulnerability,* which are beliefs that a partner views the self as interpersonally vulnerable—easily hurt, emotionally volatile, and overly dependent on approval and positive feedback. These reflected appraisals of vulnerability in turn create *authenticity doubts*—that is, beliefs that a partner expresses more positive regard than he or she truly feels and conceals negative regard. In other words, partners who are presumed to be aware of one's vulnerabilities are thought to "walk on eggshells." These authenticity doubts encourage underestimation of the partner's actual acceptance and perpetuate the experience of insecurity and expression of vulnerability that initiated this process. Although it is inspired, in part, by research on individual differences, this model posits a normative relationship process; feelings of insecurity in a particular relationship should trigger this process inde-

pendently of individual differences in proclivities to feel secure and insecure in relationships generally.

For example, Amanda's prior overreactions to fears of rejection from Jerry, as well as her prior attempts to seek reassurance regarding Jerry's affections, cause her to think that Jerry views her as especially vulnerable and insecure. This in turn causes her to believe that Jerry is walking on eggshells around her, feigning more positive regard and acceptance than he truly feels, and concealing negative sentiments. In other words, when interpreting his positive expressions, Amanda tends to think that Jerry is "just saying that" because he views her as sensitive. Ultimately, these doubts about the authenticity of Jerry's expressions of regard maintain those insecurities regarding Jerry's acceptance that Amanda initially expressed. Our model is displayed in Figure 1. We describe each path in detail.

Path a: Insecure Individuals Believe That They Express Vulnerability

When people feel insecure about a partner's acceptance—that is, when they doubt whether they are truly accepted by a partner and when they feel especially emotionally vulnerable to the prospect of rejection by the partner—they often behave in ways that express this insecurity and vulnerability to the partner. During times of high threat, when rejection is currently perceived, they often do so by defensively rejecting the partner in return. Indeed, according to Murray and Holmes's dependency-regulation model, when people anticipate rejection by a partner, they tend to protect themselves by distancing from the partner and the relationship, which is thought to blunt the pain of rejection (see Murray et al., 2006, for a review). Supporting this model are studies showing that people who doubt a partner's regard and love react to these insecurities by self-protectively derogating their partner and denying the importance of the relationship (Murray, Holmes, & Griffin, 2000; Murray et al., 2001). This self-protection also appears to be expressed behaviorally. For example, those with chronic doubts about a partner's regard appear to enact cold and hurtful behaviors toward the partner (e.g., criticizing or insulting the partner; Murray et al., 2003) and engage in more conflict (Murray et al., 2000).

Other indices of insecurity regarding acceptance also predict behavioral expressions of insecurity. Those with attachment-related anxiety, who tend to worry about rejection and abandonment from their close relationship partners, appear especially emotionally and behaviorally volatile in response to partner transgressions. They report feelings of anger and hostility and

appear anxious and stressed when discussing major relationship conflicts with their romantic partners (Simpson, Rholes, & Phillips, 1996). They express intense anger when their partners do not respond supportively to their anxiety (Rholes, Simpson, & Orina, 1999; see also Mikulincer, 1998), and they intend to punish or hurt the partner when the partner responds in ways that may not be seen as supportive (Collins, 1996). Similarly, men high in rejection sensitivity—a disposition to anxiously expect rejection from others—are perceived by their partners as jealous, and rejection-sensitive women are perceived as hostile and unsupportive (Downey & Feldman, 1996, Study 3). Although some of these reactions to felt insecurity may blunt the pain of rejection in the present or provide a short-term sense of vindication, we consider these reactions to be expressions of one's vulnerability that, when reflected upon later, may initiate cognitions that ultimately perpetuate insecurity.

During times of low threat (when people are willing to risk dependency on a partner because a partner's rejection is not perceived to be certain), those who feel insecure about a partner's acceptance may express their vulnerabilities by seeking reassurance regarding their personal qualities and the partner's affections. According to Coyne's (1976) interpersonal model of depression, depressed individuals regularly seek this type of reassurance from their relationship partners, and many studies have revealed a strong relationship between depressive symptoms and reassurance seeking (Joiner, Metalsky, Katz, & Beach, 1999). In addition, other indices of chronic insecurity about acceptance, such as anxious attachment (Davila, 2001; Shaver, Schachner, & Mikulincer, 2005) and low self-esteem (Joiner, Katz, & Lew, 1999), also predict seemingly excessive reassurance seeking. In our view, although this behavior may sometimes assuage insecurities about a partner's regard and affections in the present, upon reflection, it likely initiates cognitions that perpetuate the insecurity.

Of course, some reactions to relational insecurity may be unconscious (DeHart, Pelham, & Murray, 2004; Sommer & Baumeister, 2002). However, this does not negate our model's assumption that people are usually aware that they have expressed some of their vulnerabilities in the past. Their awareness can derive from situations in which they consciously expressed vulnerabilities, from reactions of their partners or third-party observers, or from their own reflections on their past reactions. Indeed, the fact that many of the studies reviewed above utilized self-reports supports our assumption that, when people tend to feel insecure about a partner's acceptance, they often believe that they have expressed their insecurity and emotional vulnerability to the partner.

Path b: Expressions of Vulnerability Cause Reflected Appraisals of Vulnerability

The knowledge that one has expressed vulnerability in the past ought to promote reflected appraisals of vulnerability—beliefs that a partner views the self as especially interpersonally vulnerable, including easily hurt, emotionally volatile, and overly dependent on approval and affection. Quite simply, once people think they have expressed heightened vulnerability or sensitivity to a partner, they tend to believe that the partner views them as especially vulnerable or sensitive.
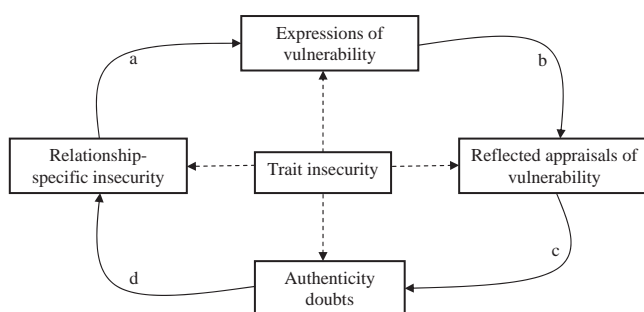

Figure 1. The expression-based authenticity doubts model.

The belief that a partner views the self as vulnerable may arise from a purely subjective, intrapersonal process. First, their partners may not have noticed the expressions of vulnerability. Instead, reflected appraisals of vulnerability may arise from egocentric biases such as the spotlight effect and the illusion of transparency. The spotlight effect refers to the tendency for people to overestimate the extent to which others attend to their behavior (Gilovich & Savitsky, 1999). This bias presumably arises because people presume that what is salient to them—their own behavior—is salient to others (Gilovich, Medvec, & Savitsky, 2000). Similarly, the illusion of transparency refers to the tendency for people to presume that their emotional reactions are more observable than they are (Gilovich & Savitsky, 1999; Gilovich, Savitsky, & Medvec, 1998), an illusion that might be pronounced in close relationships (Vorauer & Cameron, 2002). For those who believe that they have expressed vulnerabilities in the past, these biases may cause them to believe that they are viewed as vulnerable independently of whether the partner actually attended to those expressions.

Second, their partners may have attended to the expressions but may not have interpreted them as expressions of an underlying vulnerability. Although perceivers often do infer dispositions from observable behavior, people think that perceivers do this much more than perceivers actually do it (Van Boven, Kamada, & Gilovich, 1999). Indeed, people tend to overestimate the extent to which others make dispositional attributions regarding their attitudes (Van Boven et al., 1999, Study 1) and personality traits (Van Boven et al., 1999, Study 2), and they overestimate the effects of their social blunders or failures on observers' evaluations (Savitsky, Epley, & Gilovich, 2001).

These egocentric processes are likely to mediate the link between expressions of vulnerability and reflected appraisals of vulnerability. One's behavioral reactions to insecurity regarding a partner's acceptance—whether fishing for a compliment, privately derogating the partner following a perceived transgression, avoiding the partner, directly seeking reassurance about the partner's affections, or openly insulting the partner—are likely salient responses to insecurity in one's own mind, but the partner may not notice or remember the behavior, may draw fewer dispositional inferences than one assumes, or may interpret the behavior not as an expression of interpersonal vulnerability but rather as evidence of a temporary state caused by situational factors ("she just had a bad day"). Nevertheless, a focus on one's own reactions to insecurity may cause one to believe that one is viewed as especially vulnerable. This is not to say that partners do not sometimes detect one's vulnerabilities. Indeed, there appears to be a kernel of truth in such perceptions (Ruvolo & Fabin, 1999). Rather, our point is that the process by which people conclude that they are viewed as vulnerable and insecure may not depend on the partner's actual views and often may operate through egocentric perception.

Path c: Reflected Appraisals of Vulnerability Cause Doubts About the Authenticity of a Partner's Expressions of Positive Regard

The belief that a partner views the self as vulnerable should in turn produce authenticity doubts—suspicion that the partner expresses insincere positive thoughts and feelings, conceals negative thoughts and feelings, and is generally cautious during interaction.

This is likely to be the case because people have shared expectations regarding how others react to interpersonally insecure and vulnerable individuals. These expectations, colloquially referred to as walking on eggshells, involve caution about behaving in a manner that would cause the individual to feel rejected. People may expect this type of reaction because of normative desires to have rewarding interactions and avoid negative interactions (see Kelley & Thibaut, 1978; Rusbult & Van Lange, 1996) and to adhere to norms dictating that people should care about and avoid hurting partners' feelings (see Clark & Mills, 1993). When interacting with an individual who is especially insecure and vulnerable regarding rejection and acceptance, these goals may be facilitated by expressing positive regard, concealing negative thoughts or feelings, and maintaining a cautious stance. Supporting the idea that people perceive others' expressions as cautious when such caution seems warranted are empirical studies suggesting that people doubt a person's authenticity when the person appears dependent on incentives controlled by others (e.g., Jones, Jones, & Gergen, 1963; Vonk, 1998, 2002) or when the person appears motivated to avoid hurting others' feelings (DePaulo & Bell, 1996; Pataki & Clark, 2004).

Thus, people may have prototypes that one person's interpersonal vulnerability elicits his or her interaction partner's caution. Such prototypes may become relevant to interpreting a partner's behavior for those who, as a result of their own prior expressions, believe they are viewed as vulnerable and insecure. Applying such prototypes to their own relationships, they may suspect that their partner is walking on eggshells around them, cautiously suppressing negative thoughts and feelings, and exaggerating their positive thoughts and feelings. By frequently expressing heightened insecurity and emotional vulnerability, what was once a naïve theory about how people react to fragile, volatile individuals has become a suspicion about the partner's behavior.

Path d: Doubting the Authenticity of a Partner's Expressions of Regard Undermines Relationship Security

Doubts about the authenticity of a partner's expressions of regard can undermine confidence in the partner's regard by creating a disjuncture between the partner's positive expressions and one's inferences of the partner's true thoughts and feelings. Specifically, beliefs that a partner is concealing some negative sentiment or is feigning some positive sentiment allow and even encourage people to perceive more negative regard and less positive regard than is indicated by the actual features of the partner's behavior.

Indeed, a tenant of attribution theory is that people view another person's behavior as a product of his or her dispositions and the external factors that constrain or facilitate that behavior (Heider, 1958; Jones & Davis, 1965; Kelley, 1967). People are less likely to infer corresponding attitudes or traits from a target's behavior if there is another plausible explanation for the behavior, such as a situational constraint on the behavior or a perceived ulterior motive (e.g., Fein, Hilton, & Miller, 1990; Gilbert, Krull, & Pelham, 1988; Jones & Harris, 1967; Miller, Visser, & Staub, 2005). More specifically relevant to the present point, studies suggest people discount expressions of positive feedback when situational factors appear to render targets motivated to provide false feedback (e.g., DePaulo & Bell, 1996; Major, Carrington, & Carnevale, 1984).

Thus, when people believe that their partners are behaving cautiously, they may discount the partner's expressions of positive regard and acceptance as due to this caution rather than seeing such expressions as reflecting authentic positive sentiment. That is, in response to a partner's compliment or expression of affection, they may think the partner is "just being nice."

Likewise, mundane acts that could signal the partner's negative regard (i.e., a negative mood) may be perceived as implying more negative regard than is the case because they are thought to occur in a relational context that impedes such behavior. Behaviors are perceived as especially diagnostic of internal dispositions when they contradict observed situational pressures (Gilbert, Krull, & Pelham, 1988; Gilbert, Pelham, & Krull, 1988; Jones, Davis, & Gergen, 1961; Kelley, 1967; Schwarz et al., 1991). Thus, when one believes that a partner sees oneself as vulnerable and believes that the partner is cautious about communicating negative regard, partner behaviors that nonetheless are seen as communicating even a tinge of negative sentiment are perceived as indicative of the partner's more extremely negative latent sentiment (i.e., acting in an apparently cold way despite the presumed countervailing forces).

In addition, authenticity doubts may threaten relational security even when the partner's behavior cannot be perceived as communicating any negative regard whatsoever. People often imagine the presence of dispositions that are perceived to be behaviorally extinguished by situational constraints (Miller et al., 2005). That is, people infer dispositions from behavior in which actors did not engage but very well might have had the situation permitted. The belief that one's own vulnerability has caused partners to be cautious about communicating any negative thoughts or feelings may serve as a perceived relational constraint that evokes this counterfactual correspondence bias, causing those who believe that partners are cautious to perceive that partners have more threatening sentiments lurking below a constrained congenial surface.

The Role of Trait Insecurity

We suggest a distinction between the interpersonal processes posited by our model and effects of relatively chronic tendencies to feel secure or insecure regarding acceptance by others in general. Indeed, prior research supports such a distinction. Beyond individual differences in tendencies to feel secure in relationships, people seem differentially (in)secure about acceptance and care from one relationship partner to the next (Barry, Lakey, & Orehek, 2007; Lakey, McCabe, Fisicaro, & Drew, 1996; Lemay & Clark, in press). Moreover, insecurity regarding a particular partner's acceptance and care tends to predict behavioral expressions of that insecurity independently of individual differences in self-esteem (Murray et al., 2003), which are thought to reflect general tendencies to be secure or insecure about others' acceptance (Leary & Baumeister, 2000).

Nevertheless, individual differences in interpersonal security are likely to affect our model variables. Indeed, our model is in part derived from and inspired by research involving individual-differences variables. Individual-differences variables reflecting chronic insecurity about acceptance in general do predict doubts about a specific partner's regard (Downey & Feldman, 1996; Murray et al., 2000, 2001), expressions of insecurity and vulnerability to partners (Downey & Feldman, 1996; Murray, Rose,

Bellavia, Holmes, & Kusche, 2002; Shaver et al., 2005; Simpson et al., 1996), and discounting of others' expressions of acceptance (Collins, Ford, Guichard, & Allard, 2006; Marigold, Holmes, & Ross, 2007; Stroebe, Eagly, & Stroebe, 1974). Those who are chronically insecure also may assume that their insecurity is known by partners without thinking that they have previously expressed it, perhaps through a process of projecting their own self-views onto the views others hold of them (Kenny & DePaulo, 1993). Although not the primary focus of our model, we illustrate the possible effect of individual differences (trait insecurity) on model variables in Figure 1. We expect to find evidence for the paths of our process model (Paths a, b, c, and d in Figure 1) even after controlling for these individual differences. In the current research, we tested model paths while controlling for individual differences in self-esteem and attachment-related anxiety.

Summary and Research Overview

We posit that when people are insecure about a partner's acceptance, they believe that they have expressed vulnerabilities to partners, which causes them to believe that they are viewed as vulnerable by partners. The belief that they are viewed as vulnerable in turn casts doubt on the authenticity of the partner's expressions of regard and acceptance, which is likely to cause individuals who hold such doubts to underestimate their partner's true regard for and acceptance of them, perpetuating the insecurities and vulnerabilities that they initially expressed.

We present six studies testing our model. In Study 1, we tested whether inauthentic expression of regard toward interpersonally vulnerable partners is a normative belief. That is, do people think others in general walk on eggshells around insecure and vulnerable individuals? We expected that people do think this, regardless of whether they themselves tend to be secure or insecure in relationships. In Studies 2A and 2B, we tested effects of knowledge that one has expressed vulnerabilities on reflected appraisals of vulnerability and in turn authenticity doubts, controlling for individual differences in self-esteem (Study 2A) and attachment-related anxiety (Study 2B). In Study 3, we examined effects of authenticity doubts on perceived rejection in romantic and nonromantic relationships, controlling for individual differences in self-esteem. In Study 4, we tested the effects implied by our model using longitudinal data and examined effects after controlling for individual differences in self-esteem and the partner's appraisals of vulnerability, authenticity, and regard. In Study 5, we tested one aspect of the model using an experimental methodology, expecting to find effects of experimentally manipulated reflected appraisals of vulnerability on doubts about the authenticity of a new relationship partner's expressions of emotion.

Study 1: Do People Think Others Walk on Eggshells Around Vulnerable Individuals?

Our model presumes people believe that expressions of regard toward those who are especially insecure and emotionally vulnerable to rejection lack authenticity. This should be the case regardless of whether people themselves tend to be vulnerable (i.e., low self-esteem). Thus, before testing the specific paths of the model in Figure 1, in Study 1, we tested whether people do associate interpersonal vulnerability with partners walking on eggshells.

Method

Participants

One hundred and fifty-four participants (128 women, 24 men, 2 who did not report their gender; M age = 32 years) completed an electronic survey in exchange for entry into a $100 raffle.

Measures and Procedure

Participants completed all measures in the order presented below.

Open-ended descriptions of reactions to an interpersonally vulnerable individual. Participants read the following description of an individual who is especially insecure and emotionally vulnerable in regard to interpersonal acceptance:

> Suppose that there is a person who appears to be very insecure. He or she appears to worry about what other people think about him/her. He/she often "reads into things," thinking that other people see him or her negatively when they actually might not. His/her feelings are easily hurt and he/she often gets angry or upset with others.

Then, they provided written responses to the prompts "In your own words, please describe how most people would act around such a person" and "Why do you think people act this way around this type of individual?"

Perceptions of general authenticity with a vulnerable individual. Participants read the description presented above and completed a 10-item measure assessing their perceptions of others' authenticity with this individual using 7-point response scales (1 = *strongly disagree*; 7 = *strongly agree*). The items included five that assessed authentic responses (i.e., "People would freely express any negative thoughts they have about this person," "People would freely give this person negative feedback or criticism," "People would be honest about how positively they view this person," "People would not worry about upsetting this person," and "People would not really think twice about what they say to this person") and five that assessed inauthentic responses ("People would hide any negative thoughts they have about this person," "People would be reluctant to give this person negative feedback or criticism," "People would pretend that they view this person more positively than they actually do," "People would be cautious about upsetting this person," and "People would be overly careful not to say anything that would upset this person"). The order of items was determined randomly for each participant. Responses to items were averaged to create authentic responding (α = .68) and inauthentic responding (α = .81) indices.

Perceptions of general authenticity with a secure individual. Participants were asked to imagine a secure individual using the following instructions:

> Suppose that there is a person who appears to be very confident. He or she does not appear to be overly concerned about what other people think about him/her. He/she tends to assume that other people see him/her positively. He/she tends to not let what other people say bother him/her.

Then, participants completed the same five authentic items (α = .79) and five inauthentic items (α = .81) described above.

Perceptions of specific authenticity with vulnerable individuals. We also included measures to assess the perceived likelihood of specific authentic and inauthentic responses in specific situations.

Participants read the following three scenarios depicting interactions with interpersonally vulnerable individuals: "Imagine that someone is very sensitive about his/her appearance. On one particular day, this person doesn't look all that attractive"; "Imagine that someone is very sensitive about whether or not other people like him/her. This person tells a joke that is not very funny"; and "Imagine that someone is very sensitive about whether or not other people like him/her. This person says something that offends his/her friend." For each scenario, two potential responses of the interaction partner were provided, one that was authentic and negative and the other that was inauthentic and more positive. Participants indicated the likelihood of an authentic response (i.e., "His/her boyfriend/girlfriend tells the truth and tells him/her that he/she doesn't look attractive," "His/her friend doesn't laugh," and "The friend tells this person that he/she was upset," respectively) and an inauthentic response (i.e., "His/her boyfriend/girlfriend lies and tells him/her that he/she looks attractive," "His/her friend forces a laugh, pretending that it was funny," and "The friend says nothing to this person about the incident," respectively) using 4-point rating scales (1 = *very unlikely*; 2 = *unlikely*; 3 = *likely*; 4 = *very likely*). Whether the authentic or inauthentic response was presented first was randomly determined for each participant and scenario.

Perceptions of specific authenticity with secure individuals. The same scenarios as described above were presented again, except that the individual was depicted as secure (i.e., "Imagine that someone is not overly concerned about his/her appearance," "Imagine that someone is not very worried about what other people think of him/her," and "Imagine that someone is not overly concerned about what other people think of him/her," respectively). Participants then completed the items described above assessing their perceived likelihood of authentic and inauthentic responses.

Self-esteem. Participants completed the Rosenberg (1965) Self-Esteem Scale using 6-point response scales (1 = *strongly disagree*; 6 = *strongly agree*; α = .90).

Results and Discussion

Open-Ended Responses

Two coders who were unaware of the hypotheses coded the open-ended responses for the presence of two theoretically relevant types of responses—feigning positivity and caution. Feigning positivity was defined as statements reflecting a belief that people are overly polite, nice, or complimentary to the vulnerable individual. Caution was defined as statements reflecting a belief that people are cautious about upsetting the vulnerable individual or tailor their communications in such a way as to avoid upsetting the individual. For purposes of comparison, two other types of responses—support and avoidance—also were tallied. These were chosen because other theoretical perspectives suggest that they also may be common reactions to a partner's insecurity (Clark & Mills, 1993; Collins & Feeney, 2000; Coyne, 1976). Support was defined as statements reflecting a belief that people would provide help or desire to help the insecure person, including behavior (e.g., trying to help the person with his or her insecurity, providing reassurance), motivation (i.e., a desire to help the person or a concern for the other's welfare), and emotion (i.e., feeling sym-

pathetic or empathic). Avoidance was defined as statements positing that others would avoid interaction or intimacy with the individual. These categories were not exclusive; a participant's response could be coded as indicating more than one type of reaction. Intercoder reliability was moderate to substantial for feigning positivity (percent agreement = .85; Cohen's K = .43), caution (percent agreement = .85; Cohen's K = .78), avoidance (percent agreement = .88; Cohen's K = .81), and support (percent agreement = .84; Cohen's K = .57). The coders subsequently discussed and reconciled their disagreements.

As expected, a large proportion of participants (45%) freely indicated that people would behave in a cautious manner around the vulnerable individual. A smaller proportion (18%) freely indicated that people would feign positive sentiment. Many participants (50%) also claimed that others would desire to avoid the insecure individual, and a smaller proportion (21%) indicated that people would be supportive. Thus, cautious responding was perceived to be a common reaction to insecurity, just as common as the outright avoidance emphasized in other models of reactions to insecure and vulnerable individuals (e.g., Coyne, 1976; Downey et al., 1998; Joiner, Metalsky, et al., 1999). Examples of cautious responses include "Would be overly nice to the person so they would not get upset"; "I think most people would be extra careful around this person, as if they were walking on eggshells. I think they would treat this person with 'kid gloves'"; "I think most people would tend to either 'tip-toe' around someone like this, trying not to upset them OR be frustrated and just ignore that aspect of the person"; "I would probably act very diplomatically and make a point to choose my words very carefully"; "Most people will treat the person in the same way as one would treat a child- lightly"; and "Most people would be nervous—afraid of doing or saying the wrong thing and 'setting him/her off.'"

A limitation to these data is that most participants provided only one response, likely the most accessible response. Thus, the open-ended response format may have underestimated the degree to which people expect inauthentic responses. Results from analyses of rating scale data, described next, are not subject to this limitation.

Rating Scale Responses

Differences in general authenticity. A repeated measures analysis of variance (ANOVA) compared response indices (authentic vs. inauthentic) as a function of type of partner (vulnerable vs. secure). A response main effect, $F(1, 146) = 23.54$, $p < .001$, indicating that participants perceived inauthentic responses as more likely than authentic responses, was qualified by the expected Response × Partner interaction, $F(1, 146) = 166.86$, $p < .001$, $\eta^2 = .53$. The pattern of means is displayed in Figure 2. Follow-up repeated measures ANOVAs revealed that, with vulnerable partners, authentic responding ($M = 2.90$) was judged to be less likely than inauthentic responding ($M = 5.10$), $F(1, 153) = 200.57$, $p < .001$, $\eta^2 = .57$, whereas, with secure partners, authentic responding ($M = 4.57$) was judged to be more likely than inauthentic responding ($M = 3.41$), $F(1, 146) = 40.47$, $p < .001$, $\eta^2 = .22$. Authentic responding also was judged as significantly more likely with a secure partner than with a vulnerable partner, $F(1, 146) = 157.31$, $p < .001$, $\eta^2 = .52$, whereas inauthentic responding was judged to be more likely with a vulnerable partner
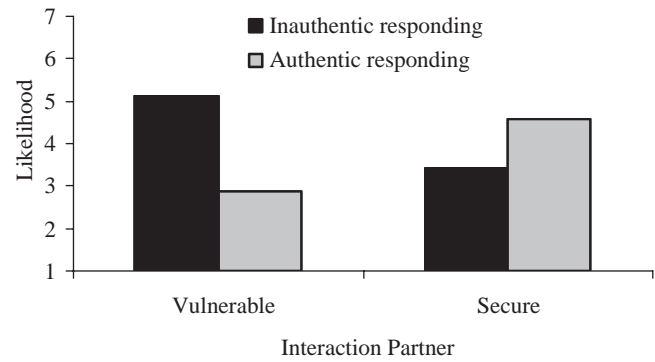

Figure 2. Perceived likelihood of general authentic and inauthentic responding as a function of interaction partner (Study 1).

than with a secure partner, $F(1, 147) = 138.07$, $p < .001$, $\eta^2 = .48$.

Differences in specific authenticity. A 2 (type of response: authentic vs. inauthentic) × 2 (interaction partner: vulnerable versus secure) × 3 (scenario: attractiveness, joke, offense) repeated measures ANOVA compared the perceived likelihood of authentic and inauthentic responses across the specific scenarios as a function of interaction partner. The pattern of responses for each scenario is depicted in Figure 3.

The expected Type of Response × Interaction Partner interaction, $F(1, 134) = 116.11$, $p < .001$, $\eta^2 = .46$, qualified a response main effect, $F(1, 134) = 6.84$, $p < .05$ (which indicated slightly greater perceived likelihood of inauthentic responses). Follow-up repeated measures ANOVAs compared the likelihood of authentic and inauthentic responses for each type of interaction partner. For vulnerable interaction partners, the inauthentic response was perceived to be more likely ($M = 2.88$) than the authentic response ($M = 2.21$), $F(1, 143) = 113.48$, $p < .001$, $\eta^2 = .44$. For secure interaction partners, the authentic response was perceived to be more likely ($M = 2.76$) than the inauthentic response ($M = 2.39$), $F(1, 139) = 24.31$, $p < .001$, $\eta^2 = .15$. Another set of repeated measures ANOVAs compared the perceived likelihood of each type of response across the two interaction partners. Inauthentic responses were judged to be more likely when with a vulnerable partner than when with a secure partner, $F(1, 139) = 73.49$, $p < .001$, $\eta^2 = .35$, whereas authentic responses were judged to be more likely when with a secure partner than when with a vulnerable partner, $F(1, 135) = 117.81$, $p < .001$, $\eta^2 = .47$.

The three-way Interaction Partner × Type of Response × Type of Scenario interaction was not significant ($p = .12$), suggesting that this pattern pertained to all three of the situations. Indeed, the Type of Response × Interaction Partner two-way interaction was significant in an analysis of each situation: attractiveness situation, $F(1, 140) = 95.31$, $p < .001$; joke situation, $F(1, 139) = 75.37$, $p < .001$; and offense situation, $F(1, 139) = 45.44$, $p < .001$.

Moderation by self-esteem? We retested the ANOVAs described above after including self-esteem as a main effect (a continuous covariate) and as a moderator of all of the other effects. Self-esteem did not moderate the Response × Partner interaction predicting general authenticity ($p = .45$). Self-esteem also did not significantly moderate effects in the specific scenario analysis ($ps > .20$), and self-esteem was not correlated with any of the open-ended responses ($ps > .31$).
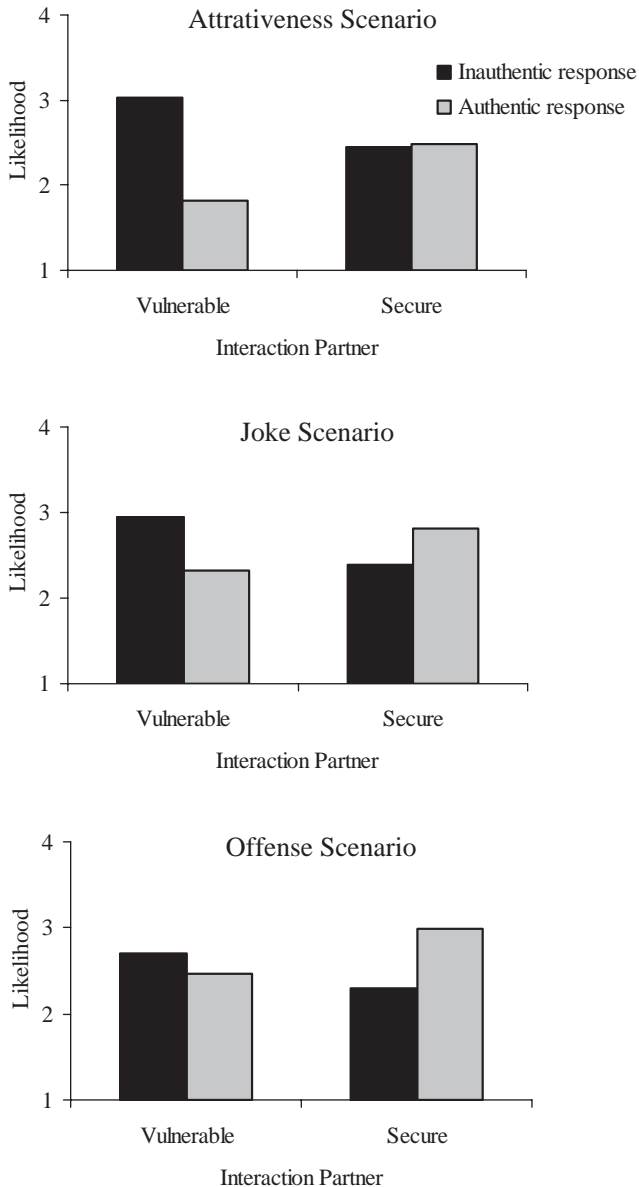
Figure 3. Perceived likelihood of specific authentic and inauthentic responses as a function of interaction partner (Study 1).

These results support the idea that walking on eggshells is part of people's prototypes of interactions with vulnerable people. People appear to believe that others are less willing to express negative thoughts and feelings and are more likely to feign positive thoughts and feelings to especially interpersonally insecure and vulnerable people than to secure people. This was the case using both abstract measures of responding and perceived likelihood of providing specific forms of authentic and inauthentic responses in specific situations. These beliefs were held by people with low and high self-esteem, suggesting that people believe that others walk on eggshells and sugarcoat their responses around interpersonally vulnerable individuals regardless of their own tendencies for interpersonal vulnerability and insecurity.[1]

Studies 2A and 2B: Expression and Reflected Appraisals of Vulnerability Predict Authenticity Doubts

Study 1 revealed that people tend to expect expressions of regard toward vulnerable individuals to lack authenticity. Our model posits that these expectations are applied to existing relationships when people believe that they have expressed their insecurity and vulnerability to partners. That is, when people believe that they have expressed a high degree of insecurity and vulnerability to partners, they tend to believe that they are viewed as especially vulnerable, volatile, and insecure by the partner (Path b in Figure 1). These reflected appraisals of vulnerability then render these expectations or prototypes relevant to interpreting the partner's behavior, stirring doubts about the authenticity of the partner's expressions of regard (Path c in Figure 1). We expect these effects even after controlling for individual differences in trait insecurity. In Study 2A, we tested these predictions using reports of romantic and nonromantic relationships while controlling for trait self-esteem. In Study 2B, we controlled for attachment-related anxiety—that is, individual differences in worries about abandonment and rejection from close relationship partners (e.g., Bartholomew & Horowitz, 1991; Collins & Read, 1990).

Method

Participants and Procedure

Study 2A. Two hundred and seventeen participants (49 men, 163 women, 5 who did not report their gender; *M* age = 25 years) completed an electronic survey in exchange for entry in a $50 raffle. They completed the survey regarding their romantic relationship partner (*n* = 152) if they were currently involved in a romantic relationship or regarding a close friend (*n* = 65) if they were not currently romantically involved.

Study 2B. One hundred and thirty-five college students enrolled in an introductory course on psychology (50 men, 85 women; *M* age = 20 years) opted to complete an electronic survey to receive credit for a course assignment. Participants completed measures in regard to a current romantic partner or a past romantic partner if they ever had a romantic relationship and in regard to a current or past close friend if they were not ever romantically involved. Given that the measures assess beliefs about a particular partner's current thoughts and behaviors, analyses are based on responses of those participants (30 men, 60 women) who completed the measures in regard to a current romantic partner (*n* = 56) or a current friend (*n* = 34).

Measures

Participants completed the following measures in the order presented.

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[1] Additional analyses examined the moderating effect of gender. Gender did not moderate any of the effects in analyses of general authenticity or specific situations (*p*s > .17). Chi-square analyses revealed that open-ended caution, feigning positivity, and support responses did not vary as a function of gender (*p*s > .36). Avoidance did vary as a function of gender, $\chi^2(1, N = 152) = 9.70, p < .01$. Only 21% of the men reported that others would respond with avoidance, compared with 56% of the women.

Self-esteem (Study 2A). Participants completed the Rosenberg (1965) Self-Esteem Scale using 6-point response scales (1 = *strongly disagree*; 6 = *strongly agree*; α = .92).

Expressions of vulnerability. Participants completed a 5-item measure assessing knowledge of their prior expressions of vulnerability and insecurity to the relationship partner they identified. Two items assessed expressions of negative emotion (i.e., "I have frequently expressed hurt or angry feelings toward this person," and "I have often acted upset or angry toward this person because of something he/she did or said"); two assessed knowledge of reassurance seeking (i.e., "I often ask this person how he/she truly feels about me," and "I frequently seek reassurance from this person as to whether he/she really cares about me"), adapted from the reassurance-seeking subscale of the Depressive Interpersonal Relationships Inventory (Joiner & Metalsky, 2001); and one assessed general expression of vulnerability (i.e., "I have often reacted to this person in ways that suggest that I am sensitive about rejection"). Items were completed on 6-point response scales (1 = *strongly disagree*; 6 = *strongly agree*; Study 2A α = .82; Study 2B α = .86).[2]

Reflected appraisals of vulnerability. Participants completed a 3-item measure assessing their beliefs that the partner views them as vulnerable and insecure (i.e., "This person thinks I am easily upset with him/her," "This person thinks I am sensitive to his/her opinions of me," and "This person views me as vulnerable or easily hurt") using 6-point response scales (1 = *strongly disagree*; 6 = *strongly agree*; Study 2A α = .80; Study 2B α = .72).

Authenticity doubts. Participants completed a 4-item measure of authenticity doubts. Items assessed hiding negative regard ("This person censors his/her thoughts and feelings in order to avoid hurting my feelings," and "This person walks on eggshells [is overly cautious] around me") and feigning positive regard ("This person exaggerates how positively he thinks or feels about me," and "This person often says things he/she doesn't mean in order to make me feel good") using 6-point response scales (1 = *strongly disagree*; 6 = *strongly agree*; Study 2A α = .79; Study 2B α = .79).[3]

Attachment-related anxiety (Study 2B). Participants completed a shortened version of the Experiences in Close Relationships—Revised Adult Attachment Questionnaire (Fraley, Waller, & Brennan, 2000). This scale measures attachment-related anxiety (tendencies to worry about rejection and abandonment) and attachment-related avoidance (discomfort with closeness and intimacy). The five items with responses that were most weakly related to their respective subscale during scale development (see Tables 2 and 3 in Fraley et al., 2000) were eliminated from the questionnaire. The remaining items were completed in a random order. The anxiety measure exhibited adequate internal consistency in Study 2B (anxiety α = .95). The avoidance scale was not used in the current analyses (but it should be noted that controlling for avoidance did not eliminate any of the effects predicted by our model). Instructions prompted participants to respond according to how they feel about close relationships in general.

Results and Discussion

Predicting Reflected Appraisals of Vulnerability

In Study 2A, self-esteem was correlated with expressions of vulnerability ($r = -.28$, $p < .001$) and reflected appraisals of

vulnerability ($r = -.34$, $p < .001$). Similarly, in Study 2B, attachment-related anxiety was correlated with expressions of vulnerability ($r = .47$, $p < .001$) and reflected appraisals of vulnerability ($r = .59$, $p < .001$). According to our model, when people believe they have expressed vulnerabilities in the past, they will believe that they are viewed as vulnerable, independently of these individual differences (Path b in Figure 1). Indeed, in Study 2A, regressing reflected appraisals of vulnerability on both self-esteem and expressions of vulnerability revealed independent effects of expressions of vulnerability (β = .70, $p < .001$) and self-esteem (β = −.15, $p < .01$) on reflected appraisals of vulnerability (expression of vulnerability, Cohen's f^2 = 1.05). Likewise, in Study 2B, regressing reflected appraisals of vulnerability on both attachment-related anxiety and expressions of vulnerability revealed independent effects of expressions of vulnerability (β = .52, $p < .001$) and attachment-related anxiety (β = .35, $p < .001$; expression of vulnerability, f^2 = 0.46). Thus, when people believed that they expressed vulnerabilities, they believed that their partner saw them as vulnerable (Path b in Figure 1), independently of individual differences in self-esteem and attachment-related anxiety.

Predicting Authenticity Doubts

Self-esteem (Study 2A) and attachment-related anxiety (Study 2B) were correlated with authenticity doubts ($r = -.37$, $p < .001$, and $r = .27$, $p < .05$, respectively). We expected that reflected appraisals of vulnerability would predict authenticity doubts independently of these individual differences (Path c in Figure 1). In addition, our model suggests an indirect effect in which those who

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[2] Preliminary analyses using separate indices of expressing negative emotion and reassurance seeking produced highly similar results. In Study 2A, self-esteem was correlated with each index ($r = -.17$, $p < .05$, and $r = -.24$, $p < .001$, respectively), and effects of both indices on authenticity doubts were mediated by reflected appraisals of vulnerability (negative emotion → reflected appraisals of vulnerability → authenticity doubts, Sobel z = 4.76, $p < .001$; reassurance seeking → reflected appraisals of vulnerability → authenticity doubts, Sobel z = 4.32, $p < .001$). In Study 2B, attachment-related anxiety was correlated with each index ($r = .37$, $p < .001$, and $r = .52$, $p < .001$, respectively), and effects of both indices on authenticity doubts were mediated by reflected appraisals of vulnerability (negative emotion → reflected appraisals of vulnerability → authenticity doubts, Sobel z = 3.67, $p < .001$; reassurance seeking → reflected appraisals of vulnerability → authenticity doubts, Sobel z = 3.18, $p < .01$).

[3] Preliminary analyses using separate indices of hiding negative regard and feigning positive regard produced an identical pattern of results. In Study 2A, self-esteem was correlated with both indices ($r = -.29$, $p < .001$, and $r = -.38$, $p < .001$, respectively), and reflected appraisals of vulnerability mediated the effect of expression of vulnerability on each index (expression of vulnerability → reflected appraisals of vulnerability → hiding negative regard, Sobel z = 3.62, $p < .001$; expression of vulnerability → reflected appraisals of vulnerability → feigning positive regard, Sobel z = 3.44, $p < .001$). In Study 2B, attachment-related anxiety was correlated with each index ($r = .29$, $p < .001$, and $r = .19$, $p = .078$, respectively), and reflected appraisals of vulnerability mediated the effect of expression of vulnerability on each index (expression of vulnerability → reflected appraisals of vulnerability → hiding negative regard, Sobel z = 3.71, $p < .001$; expression of vulnerability → reflected appraisals of vulnerability → feigning positive regard, Sobel z = 2.87, $p < .01$).

express vulnerabilities come to doubt authenticity because they
believe that they are viewed as vulnerable and that partners have
adapted by walking on eggshells (combination of Paths b and c in
Figure 1). A hierarchical regression analysis tested effects of
expressions of vulnerability on authenticity doubts in Step 1. We
then added reflected appraisals of vulnerability in Step 2. Self-
esteem or attachment-related anxiety was controlled in both steps.
Results are displayed in Table 1.

In both studies, expressions of vulnerability predicted increased
authenticity doubts in the first step (Study 2A expression of
vulnerability, $f^2 = 0.15$; Study 2B expression of vulnerability,
$f^2 = 0.03$). These effects were eliminated after controlling for
reflected appraisals of vulnerability in the second step ($ps > .29$;
Study 2A reflected appraisals of vulnerability, $f^2 = 0.09$; Study
2B reflected appraisals of vulnerability, $f^2 = 0.25$). Sobel tests
confirmed the significance of the indirect effects of expressing
vulnerability on authenticity doubts via reflected appraisals of
vulnerability (Study 2A, $z = 4.05$, $p < .001$; Study 2B, $z = 3.66$,
$p < .001$). These results suggest that, when people expressed
heightened vulnerability and insecurity to a partner, they doubted
the partner's authenticity because they thought that the partner
viewed them as vulnerable and insecure (a combination of Paths b and
c in Figure 1).[4]

Alternative Models

We tested an alternative mediation model in which we switched
the putative mediator (reflected appraisals of vulnerability) and
outcome (authenticity doubts). This alternative model posits that
authenticity doubts account for the relationship between expres-
sions of vulnerability and reflected appraisals of vulnerability. This
may be the case, for example, if authenticity doubts are an indi-
cator of general insecurity in the relationship and this insecurity
acts as a third variable that predicts both expressions of vulnera-
bility and reflected appraisals of vulnerability. In conducting these
analyses, we also continued to control for self-esteem (in Study
2A) and attachment anxiety (in Study 2B). Contrary to this alter-
native model, expressions of vulnerability continued to predict
reflected appraisals of vulnerability when controlling for authen-
ticity doubts (Study 2A, $\beta = .63$, $p < .001$; Study 2B, $\beta = .46$,
$p < .001$). Hence, only the theorized mediation model was sup-
ported; whereas reflected appraisals of vulnerability explained the
link between prior expressions of vulnerability and authenticity

Table 1
*Effects of Trait Insecurity (Self-Esteem or Attachment-Related
Anxiety), Expressions of Vulnerability, and Reflected Appraisals
of Vulnerability on Authenticity Doubts*

Predictor	Model 1	Model 2
Study 2A		
Self-esteem	−.28***	−.22***
Expressions of vulnerability	.35***	.09
Reflected appraisals of vulnerability	—	.37***
Study 2B		
Attachment-related anxiety	.18	−.05
Expressions of vulnerability	.20†	−.13
Reflected appraisals of vulnerability	—	.63***

† $p < .10$.   *** $p < .001$.

doubts, authenticity doubts did not explain the link between ex-
pressions of vulnerability and reflected appraisals of vulnerability.

Study 3: Authenticity Doubts Contribute to Perceived Rejection

Our model posits that doubts about the authenticity of a part-
ner's expressions of regard undermine relational security (Path d in
Figure 1). They do so, according to our model, because they
encourage people who harbor such doubts to infer more rejection
than is expressed and to discount expressions of acceptance. In
Study 3, we tested the link between authenticity doubts and per-
ceived rejection while controlling for individual differences in
self-esteem.

Method

Participants and Procedure

Seventy participants (13 men, 57 women; M age = 29 years)
completed an electronic survey in exchange for entry in a \$50
raffle. They completed the survey regarding their romantic rela-
tionship partner ($n = 50$) if they were currently involved in a
romantic relationship or regarding a close friend ($n = 19$) if they
were not currently romantically involved. One participant did not
indicate whether the partner was romantic or nonromantic.

Measures

Participants completed the following measures in the order
presented.

General authenticity doubts. Participants completed a 4-item
measure of general authenticity doubts. Items assessed hiding
negative regard ("This person censors his/her thoughts and feel-
ings in order to avoid hurting my feelings," and "This person walks
on eggshells [is overly cautious] around me") and feigning positive
regard ("This person exaggerates how positively he thinks or feels
about me," and "This person often says things he/she doesn't mean
in order to make me feel good") using 10-point response scales
($1 = $ *strongly disagree*; $10 = $ *strongly agree*; $\alpha = .81$).[5]

Perceived rejection. Using 10-point response scales ($1 = $
strongly disagree; $10 = $ *strongly agree*), participants completed
three items assessing perceived rejection (i.e., "This person rejects
me," "This person thinks I have a number of significant flaws,"
and "This person dislikes me"). Three additional items assessed
perceived acceptance (i.e., "This person accepts me," "This person
thinks I have a number of good qualities," and "This person likes
me"). Responses to the acceptance items were reverse scored and
averaged with the perceived rejection items ($\alpha = .81$). Thus,

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[4] Relationship type, gender, and trait insecurity (self-esteem or
attachment-related anxiety) did not consistently moderate our model paths
across our studies. Thus, they are not discussed further.

[5] Preliminary analyses using separate indices of hiding negative regard
and feigning positive regard produced an identical pattern of results;
self-esteem was correlated with each index ($r = −.27$, $p < .05$, and $r =
−.48$, $p < .001$, respectively), and each index predicted perceived rejection
independently of self-esteem ($\beta = .21$, $p = .07$, and $\beta = .32$, $p < .001$,
respectively).

higher scores indicate more perceived rejection and less perceived acceptance.

Perceived honesty of specific positive feedback. Participants were asked to imagine that their relationship partner "said something that hinted that he or she thought each of the following things about you" and to indicate their perceptions of their partner's honesty using 6-point response scales (1 = *extremely dishonest*; 6 = *extremely honest*). Responses to four types of positive feedback ("That he/she enjoyed your company," "That you looked attractive," "That you were intelligent," and "That you were funny") were averaged to create an index of perceived honesty of specific positive feedback (α = .68).

Self-esteem. Participants completed the Rosenberg (1965) Self-Esteem Scale. The 10 items were answered on 6-point response scales (1 = *strongly disagree*; 6 = *strongly agree*; α = .89).

Results and Discussion

Self-esteem was correlated with perceived rejection (r = −.46, p < .001), general authenticity doubts (r = −.42, p < .001), and perceived honesty of specific positive feedback (r = .63, p < .001). We expected that authenticity doubts would predict perceived rejection independently of the effect of self-esteem (Path d in Figure 1). Indeed, when we regressed perceived rejection on both self-esteem and general authenticity doubts, general authenticity doubts predicted perceived rejection (β = .29, p < .05) independently of self-esteem, which was also predictive (β = −.34, p < .01; general authenticity doubts, Cohen's f^2 = 0.10). Likewise, when we regressed perceived rejection on both self-esteem and perceived honesty of specific positive feedback, the perceived honesty measure predicted perceived rejection (β = −.44, p < .01), whereas self-esteem did not (p = .17; perceived honesty, Cohen's f^2 = 0.16).

This study suggests that authenticity doubts predict insecurity regarding the partner's acceptance independently of the effects of self-esteem (Path d in Figure 1).

Study 4: Dyadic and Longitudinal Effects

Study 4 was a dyadic longitudinal friendship study that extended the prior studies in three ways. First, we assessed each partner's regard and care for the other partner. This allowed us to test whether authenticity doubts predict underestimation of the partner's regard and care (which we expected; Path d in Figure 1). This also allowed us to test whether the subjective perceptions of negative regard and lack of care that are thought to occur as a result of authenticity doubts (Path d in Figure 1) in turn predict derogation of and reduced care for the partner. Derogating and distancing from a partner as a result of relationship threats appear to reflect attempts to protect the self from impending rejection. They co-occur with behavioral forms of distancing, such as responding in a hostile, unsupportive manner (Murray et al., 2006). This distancing response to the insecurity brought about by authenticity doubts may be one means by which relationship-specific insecurity feeds back to affect subjectively felt expressions of vulnerability that initiate our hypothesized cycle (Path a in Figure 1). We controlled for trait self-esteem when testing these links.

Second, the longitudinal aspect of Study 4 permitted a test of the cyclical aspect of our model. We expected that the reduced security in the partner's acceptance presumably brought about by authenticity doubts (Path d in Figure 1) would be carried into the future, perpetuating the cycle by promoting subsequent expressions of vulnerability (Path a in Figure 1). In turn, these subsequent expressions of vulnerability should predict temporal increases in reflected appraisals of vulnerability and authenticity doubts.

Third, in addition to assessing each partner's authenticity doubts, we assessed each partner's appraisals of the other's vulnerability and each partner's felt authenticity of his or her own expressions. This allowed us to test our expectations that those who think that they have expressed vulnerabilities believe that they are viewed as vulnerable independently of the partner's actual views (Path b in Figure 1) and that those who believe they are viewed as vulnerable subjectively construct an inauthentic partner independently of the partner's reported authenticity (Path c in Figure 1).

Method

Participants and Procedure

Sixty dyads were recruited for a study on friendship from local electronic bulletin boards and newspaper advertisements. Five dyads were dating couples. The remaining 55 dyads were platonic friends. The dyads included 32 female pairs, 10 male pairs, and 18 mixed-sex pairs. Ages ranged from 17 to 45 years (M = 21 years). Most participants (n = 116) were college students. Upon recruitment, they completed a series of questionnaires (T1). Approximately 5 months later (M = 139 days), 90 of the initial 121 participants (38 intact dyads) completed all follow-up measures reported below (T2).[6]

Measures

Expressions of vulnerability, reflected appraisals of vulnerability, and authenticity doubts. The same measures described in Study 3 were used, and items were answered on 6-point response scales (1 = *strongly disagree*; 6 = *strongly agree*). The 12 items across the three measures were presented in a computer-generated random order that varied across participants (expression of vulnerability, T1 α = .83, T2 α = .87; reflected appraisals of vulnerability, T1 α = .61, T2 α = .70; authenticity doubts, T1 α = .67, T2 α = .82).

Partner's appraisals of vulnerability and partner's authenticity. Using identical response scales, participants completed an analogous measure assessing their perceptions of their friend's interpersonal vulnerability (i.e., "This person is easily upset with me," "This person is sensitive to my opinions of him/her," and "This person is vulnerable or easily hurt."; T1 α = .67, T2 α = .73) and an analogous measure assessing the authenticity of their own expressions of regard (i.e., "I walk on eggshells [am overly cau-

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[6] t tests comparing participants who dropped out of the study at T2 with those who remained in the study on all of the T1 measures produced no significant effects (ps > .40). Hence, we are reasonably confident that selective attrition did not bias our T2 sample. Data from this study were also published in Lemay and Clark (in press), although the particular effects presented in the current article are unique.

tious] around this person," "I frequently exaggerate how positively I think or feel toward this person," "I often say things I don't mean in order to make this person feel good," and "I censor my thoughts and feelings in order to avoid hurting this person's feelings"; T1 α = .83, T2 α = .90). These items were presented in a random order that varied across participants.

Self-esteem. Participants completed the Rosenberg (1965) Self-Esteem Scale using identical response scales (T1 α = .92, T2 α = .90).

Perceived caring and regard. Participants indicated their perception of the friend's regard for them on a series of traits taken from the Interpersonal Qualities Scale (Murray, Holmes, & Griffin, 1996). The traits included nine positive traits (witty and humorous, considerate, kind and affectionate, forgiving, warm, open and disclosing, understanding, patient, tolerant and accepting) and seven negative traits (critical and judgmental, thoughtless, controlling and dominant, complaining, distant, emotional or moody, demanding), presented in a random order. Using 9-point response scales (1 = *not at all characteristic*; 9 = *completely characteristic*) participants indicated the extent to which they believed that their friend saw each trait as characteristic of them (T1 α = .84, T2 α = .83). Perceived partner caring was measured by four items (i.e., "This person cares about me," "This person would give up a lot to help me," "This person would go out of his/her way to help me," and "This person doesn't care about me") answered on 6-point response scales (1 = *strongly disagree*; 6 = *strongly agree*; T1 α = .84, T2 α = .85). Most analyses using each of these variables produced similar results (except where noted), and responses to these two measures were moderately to highly correlated (T1 r = .38, T2 r = .55). To simplify presentation of results, they were standardized and averaged to create composite indices of perceived caring and regard (i.e., relationship security) for use in most analyses.

Caring and regard for partner. Participants also indicated their perceptions of the partner on the same 16 traits using the same 9-point response scales (T1 α = .82, T2 α = .85), and they completed an analogous measure of their own caring for the partner (e.g., "I care about this person"; T1 α = .86, T2 α = .81). Responses to the two measures were highly correlated (T1 r = .45, T2 r = .56), and analyses using each of these variables produced similar results. Thus, responses were standardized and averaged to create composite indices of own regard and caring for partner for use in most analyses.

Results and Discussion

Path Analysis Strategy

A series of path analyses (tested with the SAS CALIS procedure; Hatcher, 1994; SAS Institute, 2002) was used to test our primary hypotheses. Responses were standardized to facilitate comparison of the effects of variables measured on different scales (and doing so did not affect any of our conclusions). First we present concurrent analyses testing hypothesized links among expressions of vulnerability, reflected appraisals of vulnerability, authenticity doubts, underestimation of the partner's caring and regard, and caring and regard for the partner. Second, we tested longitudinal predictions. Third, we tested whether effects of expressions of vulnerability on reflected appraisals of vulnerability

are independent of the partner's actual appraisals of vulnerability and whether reflected appraisals of vulnerability in turn predict authenticity doubts independently of the partner's reported authenticity.

The current dyadic dataset involves interchangeable dyad members. That is, there is no consistent, unequivocal way to separate the two members of each dyad. We adopted recommendations by Olsen and Kenny (2006) to test path models involving interchangeable dyads. Specifically, we constrained intercepts, paths, variances, error terms, and any modeled within-member and across-member covariances to be equal for the two members. This appropriately models the members as interchangeable. We initially modeled covariances of the same variable across partners to account for dyadic nonindependence of responses, although insignificant covariances were deleted from the final models (noted as we proceed).

As further suggested by Olsen and Kenny (2006), fit indices were modified to remove from the final estimate of fit the influence of modeling interchangeability. The traditional model chi-square test implicitly compares the specified model with a saturated model, one in which all variances and covariances are modeled. An insignificant chi-square typically indicates that the fit of the specified model does not differ significantly from the observed variance–covariance matrix. For interchangeable dyads, the comparison is changed from the observed sample variance–covariance matrix to a variance–covariance matrix with equality constraints on all covariances, variances, and intercepts across partners (and modeling dyadic interdependence by including cross-partner covariances), termed the *I-SAT model* (for *interchangeable saturated model*) by Olsen and Kenny. The modified model chi-square, $\chi^{2\prime}$, is obtained by subtracting the chi-square for the I-SAT model from the chi-square of the tested model, and the modified model degrees of freedom, $df\,'$, are similarly obtained by subtracting the degrees of freedom of the I-SAT model from the degrees of freedom of the tested model. Hence, this modified chi-square test essentially removes from the fit estimate the effect of modeling interchangeability, and it does so by comparing the specified model with the saturated model after parameters have been constrained to be equal across partners in both models. An insignificant $\chi^{2\prime}$ suggests that the estimated model adequately fits the equality-constrained data. Likewise, the root-mean-square error of approximation (RMSEA), a measure of model misspecification, must be adjusted for our modeling of dyadic interchangeability by reducing the model χ^2 and df upon which the test is based by the χ^2 and df of I-SAT. The modified index, RMSEA$'$, suggests a close approximate fit of the estimated model to the equality-constrained observed data if it is less than or equal to .05, and it suggests a reasonable fit if it is less than or equal to .08 (see Kline, 2005). $\chi^{2\prime}$ and $df\,'$ also must be used when computing incremental fit indices that compare the specified model with an independence model specifying no relations among model variables. The independence model also must be revised. For instance, the modified Tucker-Lewis Index (TLI$'$; also called the nonnormed fit index) compares the fit of the tested model (reduced by the I-SAT model) with the fit of an adjusted independence model, which specifies no relations among model variables but constrains intercepts and variances to be equal across partners (also reduced by the I-SAT model). A TLI$'$ greater than or equal to .90 suggests a good fit of the model (see Kline, 2005). This index adds a penalty
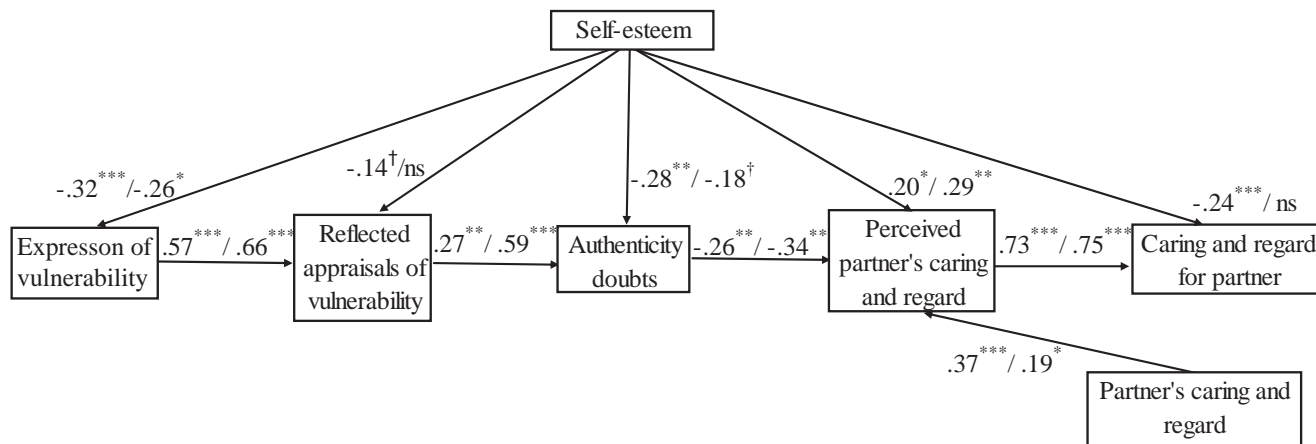
Figure 4. Results of path analyses testing concurrent predictions (Study 4). Standardized parameters for Time 1 effects are shown on the left of the slash, and standardized parameters for Time 2 effects are shown on the right of the slash. Time 1 dyad $N = 60$. Time 2 dyad $N = 37$. $^{\dagger}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

for model complexity. (See Olsen & Kenny, 2006, for computational details.[7])

Concurrent Test of the Model

Figure 4 displays results of path analyses testing concurrent predictions. We included paths from self-esteem to all model variables to control for effects of self-esteem, and we modeled perceived caring and regard as having some degree of truth, predicted by the partner's caring and regard. Controlling for this degree of truth allowed us to test our expectation that authenticity doubts predict subjective perceptions of the partner's caring and regard independently of the partner's actual caring and regard. We also modeled an effect of perceived partner caring and regard on own caring and regard for the partner to test whether the relational insecurity that is presumably brought about by authenticity doubts in turn evokes a distancing response and reduces one's own responsiveness to the partner (see Murray et al., 2006).[8]

The effects were consistent with our model at both assessment waves. Participants' beliefs that they had expressed vulnerability predicted their reflected appraisals of vulnerability (Path b in Figure 1). That is, when people believed they had expressed vulnerability and insecurity to a partner in the past, they believed the partner viewed them as vulnerable and insecure. In turn, these reflected appraisals of vulnerability predicted authenticity doubts (Path c in Figure 1). In other words, those who believed that they were viewed as vulnerable and insecure thought that partners were walking on eggshells around them through hiding negative regard and feigning positive regard. Authenticity doubts in turn predicted insecurity in the partner's caring and regard (Path d in Figure 1), suggesting that, through discounting expressions of acceptance and inferring more rejection than is expressed, these doubts undermine security in the partner's affections. This was the case after controlling for trait self-esteem, which had independent effects. This was also the case after controlling for the partner's reported caring and regard, suggesting that authenticity doubts lead to unwarranted insecurity in the partner's caring and regard, independently of the partner's claimed caring and regard. In addition to being predicted by authenticity doubts, perceived caring and regard also was predicted by the partner's reported caring and

regard, suggesting that insecurity also held some degree of truth (see Lemay et al., 2007; Murray et al., 2000). Moreover, doubts about the partner's caring and regard in turn predicted one's own reduced caring and regard for the partner, suggesting that the undermining of security due to authenticity doubts might further promote the reactivity to insecurities that initiated the process (Path a in Figure 1). This model was an acceptable fit to the data at T1 (TLI$'$ = .98, RMSEA$'$ = .05, $\chi^{2'}$ = 26.28, df' = 23, ns) and at T2 (TLI$'$ = .99, RMSEA$'$ = .04, $\chi^{2'}$ = 25.15, df' = 24, ns).[9]

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[7] Our sample size may be considered somewhat small in light of conventional recommendations for path analysis (see Kline, 2005). With smaller samples, chi-square tests may lack the power needed to reject the specified model, although the other goodness-of-fit tests are less affected by sample size (Bentler, 1990; Hu & Bentler, 1998). Moreover, because each dyad contributes two observations to the modeled effects, the true sample size is somewhere between the number of dyads and the number of individuals (Olsen & Kenny, 2006). For the interchangeable dyadic analyses that we used, Olsen and Kenny (2006) recommended that, at minimum, the number of dyads plus one should be twice as great as the number of variables in the model. Our models meet this criterion. Reassuringly, a series of multilevel models (modeling the two individuals nested within dyads) testing each path in isolation produced similar support for our model.

[8] Although it is not immediately apparent, the model displayed in Figure 4 posits a feedback loop (one's perceptions of the partner's caring and regard affect one's own caring and regard for the partner, which is detected by the partner, which affects the partner's reciprocation of caring and regard, which affects one's perceptions of the partner's caring and regard). We followed recommendations for testing nonrecursive models (Berry, 1984; Kline, 2005), including initially modeling the four covariances of the error terms of the four variables in the loop. In both T1 and T2 models, these covariances were not significant and were dropped.

[9] Several insignificant cross-partner covariances (initially included to test dyadic nonindependence of all model variables) have been deleted from the models presented in Figure 4. In the T1 model, these include reflected appraisals of vulnerability, perceived caring and regard, caring and regard for partner, and self-esteem. In the T2 model, they include authenticity doubts and perceived caring and regard. The T1 model also estimates the residual covariance between expression of vulnerability and authenticity doubts.
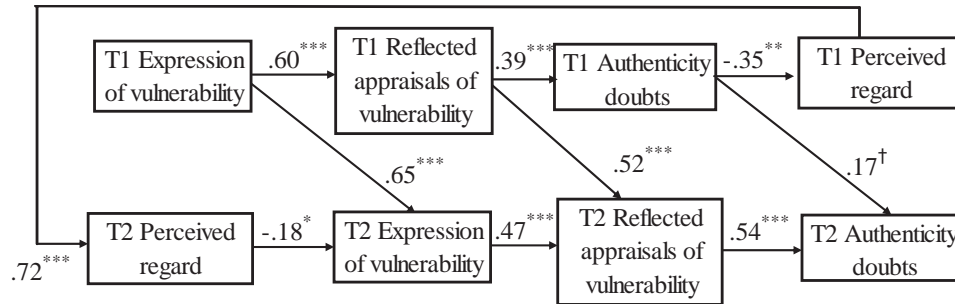
Figure 5. Results of path analysis testing longitudinal predictions (Study 4). $N = 37$. T1 = Time 1; T2 = Time 2. $^{†}p < .10.$ $^{*}p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

Longitudinal Analyses

Additional models tested predictions regarding longitudinal effects. Specifically, we predicted that the reduced security in the partner's acceptance brought about by authenticity doubts (Path d in Figure 1) would be carried into the future, predicting temporal increases in expressions of vulnerability (Path a in Figure 1), which should in turn predict temporal increases in reflected appraisals of vulnerability (Path b in Figure 1) and, in turn, authenticity doubts (Path c in Figure 1). We also modeled all T2 variables as predicted by their T1 assessments. Doing so renders T2 variables reflective of residualized temporal change.

Results of the analysis involving the perceived regard measure are displayed in Figure 5.[10] The pattern of effects regarding relations among T1 variables is similar to that displayed in Figure 4. In addition, Figure 5 suggests that the T1 insecurity about the partner's regard that was predicted by authenticity doubts in turn predicted T2 insecurity, which then predicted residual change in expressions of vulnerability (Path a in Figure 1). These increased expressions in turn predicted temporal increases in reflected appraisals of vulnerability (Path b in Figure 1), which in turn predicted increases in authenticity doubts (Path c in Figure 1). This model adequately fit the data (TLI′ = .95, RMSEA′ = .086, $\chi^{2\prime} = 62.16$, $df\prime = 49$, ns).[11] These results suggest a cyclical process in which insecurity about the partner's regard is both an indirect consequence of expressing insecurity (through effects on reflected appraisals of vulnerability and, in turn, authenticity doubts) and a cause of subsequent expressions of insecurity.

Mediation by Partner's Appraisals of Vulnerability and Authenticity?

We conducted a series of multilevel models (tested using the SAS MIXED procedure; SAS Institute, 2002; Singer, 1998), which modeled two partners as nested within dyads and intercepts as randomly varying across dyads (see Campbell & Kashy, 2002; Kenny, Kashy, & Cook, 2006), to test whether the paths predicted by our models were mediated by partner's appraisals of vulnerability and authenticity. We continued to control for trait self-esteem in these analyses.

We regressed the partner's appraisals of one's vulnerability on one's expressions of vulnerability to test whether those who expressed vulnerabilities had partners who viewed them as vulnerable. At both assessment waves, significant positive effects of

expressing vulnerabilities suggested that partners did appraise such individuals as vulnerable, T1 $\beta = .35$, $t(117) = 3.80$, $p < .001$; T2 $\beta = .33$, $t(71) = 2.82$, $p < .01$. These effects suggest that those who claimed to express vulnerabilities did have partners who detected those vulnerabilities to some degree. Next, we regressed own reflected appraisals of vulnerability on own expressions of vulnerability and the partner's appraisals of vulnerability to test whether the partner's appraisals mediated the link between own expressions and own reflected appraisals. This mediation was not found; one's own felt expressions of vulnerability remained a strong and significant predictor of reflected appraisals of vulnerability at both assessment waves, T1 $\beta = .50$, $t(116) = 6.47$, $p < .001$; T2 $\beta = .66$, $t(70) = 7.18$, $p < .001$; although the partner's appraisal of vulnerability also was significant at T1, $\beta = .20$, $t(116) = 2.65$, $p < .01$, but not at T2 ($p = .23$). These findings support our model's assumption that reflected appraisals of vulnerability can originate from one's own felt expressions of vulnerability independently of the partner's appraisals of vulnerability.

Next, we regressed the partner's claimed authenticity on one's expressions of vulnerability to test whether those who expressed vulnerability had partners who claimed to be less authentic. Expression of vulnerability did not predict the partner's authenticity at T1 ($p = .26$) or at T2 ($p = .49$). We also regressed the partner's authenticity on one's reflected appraisals of vulnerability. This effect also was not significant at T1 ($p = .14$) but was significant at T2, $\beta = .42$, $t(71) = 3.81$, $p < .001$, suggesting that those who

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[10] The longitudinal model in Figure 5 includes only the perceived regard measure and not the perceived caring and regard composite index. Analyses involving the composite index produced an effect of T2 perceived caring and regard on T2 expressions of vulnerability that was in the predicted direction but did not reach conventional levels of significance ($\beta = -.12$, two-tailed $p = .16$, one-tailed $p = .08$). This was due to a null effect of perceived partner caring on expressions of vulnerability, which might suggest that some degree of perceived caring is necessary before one expresses vulnerabilities. All other effects in the model that included the composite measure are similar to the effects displayed in Figure 5.

[11] Several insignificant cross-partner covariances (initially included to model dyadic interdependence) have been deleted from the final model displayed in Figure 5. These include T1 reflected appraisals of vulnerability, T1 authenticity doubts, T2 authenticity doubts, and T2 perceived regard. In addition, this model estimated the residual covariance between T1 expressions of vulnerability and T1 authenticity doubts.

thought they were viewed as vulnerable had partners who claimed to be less authentic at T2. However, the partner's authenticity did not explain the effect of reflected appraisals of vulnerability on authenticity doubts. That is, when we regressed one's authenticity doubts on one's reflected appraisals of vulnerability and the partner's authenticity, reflected appraisals of vulnerability strongly predicted authenticity doubts, T1 β = .41, $t(115)$ = 4.98, p < .001; T2 β = .63, $t(70)$ = 6.30, p < .001; whereas the partner's authenticity did not (T1 p = .39, T2 p = .29). These analyses suggest two distinct biases that are consistent with our model. First, those who claimed to express vulnerabilities appeared to believe that they were viewed as vulnerable independently of whether partners actually viewed them as vulnerable. Second, those who thought they were viewed as vulnerable appeared to doubt partners' authenticity independently of whether partners actually claimed to be inauthentic.

Alternative Models

We tested several alternative mediation models. First, we tested six alternative models by changing the modeled sequence. That is, we switched the position of expression of vulnerability, reflected appraisals of vulnerability, authenticity doubts, or perceived care and regard with one of these other variables. All other aspects of the models remained the same as the models depicted in Figure 4; we continued to model the effect of perceived care and regard on care and regard for partner, the effect of partner's care and regard on perceived care and regard, the effect of self-esteem on all variables, and all residual covariances that were estimated in the original models. The models did not adequately fit the data after switching expression of vulnerability and reflected appraisals of vulnerability (T1, $\chi^{2'}$ = 46.90, df' = 23, p < .01; T2, $\chi^{2'}$ = 36.31, df' = 22, p < .05), after switching expression of vulnerability and authenticity doubts (T1, $\chi^{2'}$ = 46.07, df' = 23, p < .01; T2, $\chi^{2'}$ = 38.78, df' = 22, p < .05), after switching expression of vulnerability and perceived care and regard (T1, $\chi^{2'}$ = 54.27, df' = 23, p < .001; T2, $\chi^{2'}$ = 54.05, df' = 22, p < .001), after switching reflected appraisals of vulnerability and authenticity doubts (T1, $\chi^{2'}$ = 64.53, df' = 23, p < .001; T2, $\chi^{2'}$ = 61.57, df' = 22, p < .001), after switching reflected appraisals of vulnerability and perceived care and regard (T1, $\chi^{2'}$ = 64.43, df' = 23, p < .001; T2, $\chi^{2'}$ = 71.24, df' = 22, p < .001), and after switching authenticity doubts and perceived care and regard (T1, $\chi^{2'}$ = 38.72, df' = 23, p < .05; T2, $\chi^{2'}$ = 56.54, df' = 22, p < .001). Hence, these alternative models could not account for the observed (equality-constrained) covariance matrix.

Second, we tested a more parsimonious model positing that the effects that support our model (those linking expressions of vulnerability to reflected appraisals of vulnerability, reflected appraisals to authenticity doubts, and authenticity doubts to perceived caring and regard) are all simply explained by shared variance with perceived care and regard. In other words, as direct consequences of relational insecurity, people might express vulnerability, think they are viewed as insecure, and doubt authenticity. In this model, perceived care and regard is specified as a predictor of expressions of vulnerability, reflected appraisals of vulnerability, and authenticity doubts, and we eliminated paths directly linking these three latter variables. All other aspects of the model remained the same as described above. This model was not a good fit to the data at T1

($\chi^{2'}$ = 85.48, df' = 23, p < .001) or at T2 ($\chi^{2'}$ = 96.20, df' = 22, p < .001). Hence, it seems as if this more parsimonious model positing that all effects are simply due to shared variance with insecurity about the partner's care and regard is not supported.

Finally, a problem with testing these alternative models is that they eliminate several model paths simultaneously. As a result, the poor-fitting alternative models do not necessarily indicate that each model path is properly specified. To test whether the model paths that are central to our theoretical model could be explained by other variables in our model, we tested multilevel models in which each critical model path was tested while controlling for other model variables, whether theoretically upstream or theoretically downstream. Controlling for self-esteem, authenticity doubts, and perceived caring and regard, expression of vulnerability predicted reflected appraisals of vulnerability, T1 β = .48, $t(115)$ = 5.85, p < .001; T2 β = .50, $t(63)$ = 5.31, p < .001. Controlling for self-esteem, expression of vulnerability, and perceived caring and regard, reflected appraisals of vulnerability predicted authenticity doubts, T1 β = .22, $t(110)$ = 2.42, p < .05; T2 β = .47, $t(66)$ = 3.96, p < .001. Controlling for self-esteem, expression of vulnerability, and reflected appraisals of vulnerability, authenticity doubts predicted perceived caring and regard, T1 β = −.19, $t(110)$ = −1.85, p = .07; T2 β = −.41, $t(69)$ = −3.06, p < .01. Hence, even at the level of individual model paths, alternative mediation models were not supported by the data. For instance, it was not the case that insecurity about a partner's caring and regard explained the relation between expression of vulnerability and reflected appraisals of vulnerability or the relation between reflected appraisals of vulnerability and authenticity doubts.

Summary

This study provides additional support for our model. Independently of self-esteem, when people claimed to have expressed their interpersonal vulnerabilities and insecurities to their friends, they believed that their friends viewed them as easily hurt and volatile (Path b in Figure 1). In turn, the belief that one was viewed in this way predicted doubts about the authenticity of the friend's expressions of regard and acceptance (Path c in Figure 1). In turn, these authenticity doubts predicted insecurity about the friend's caring and regard (Path d in Figure 1). Importantly, these effects were observed even when controlling for the partner's appraisals of vulnerability, authenticity, caring, and regard, suggesting the operation of cognitive processes linking expressions of vulnerability to authenticity doubts and insecurity, as posited by our model. Doubts about the partner's regard in turn appeared to perpetuate the doubter's reactivity that initiated the process. That is, these doubts about the partner's regard predicted derogation of and reduced care for the partner and predicted subsequent insecurity about the partner's regard, which in turn predicted temporal changes in expressions of vulnerabilities (Path a in Figure 1). These changes in expressions of vulnerabilities then predicted changes in reflected appraisals of vulnerabilities, which in turn predicted changes in authenticity doubts. Such a pattern suggests a cyclical process in which expressing heightened interpersonal vulnerability and insecurity is an indirect cause and direct consequence of felt relational insecurity.

Study 5: Experimental Manipulation of Reflected Appraisals of Interpersonal Vulnerability

The last study examined effects of experimentally manipulated reflected appraisals of vulnerability on doubts about the authenticity of a new acquaintance's emotional expression. Pataki and Clark (2004) hypothesized and found evidence that people publicly express more happiness than they privately feel to unattractive targets and that unattractive targets are aware of this. They posited that expressions of happiness ordinarily serve as expressions of social interest but that people may tailor these expressions to avoid hurting others' feelings. Moreover, as this is a normative tendency, targets of these exaggerated expressions of happiness, such as unattractive individuals, typically know that people tend to do this and, consequently, discount the meaningfulness of these expressions. We expected similar effects with reflected appraisals of vulnerability—people induced to believe that another person views them as especially insecure about and emotionally vulnerable to rejection should believe that the other expressed more happiness than he or she felt (a specific authenticity doubt; Path c in Figure 1).

Method

Overview

Participants were told that they would interact with another participant (really a confederate) and that this other person would be given information that may or may not be true about them beforehand. After a 10-min interaction, some participants were informed that the confederate had been told that the participant was especially insecure and emotionally vulnerable to rejection; some were not. We then measured participants' perceptions of the confederate's authenticity of expressions of happiness during the prior interaction.

Participants

One hundred and eighty-six participants (86 men, 98 women, 2 who did not report gender; *M* age = 22 years), primarily college students, were recruited via campus advertisements, research experiment websites, and from a Psychology participant pool.

Procedure

As they arrived at the laboratory, participants walked by one of three confederates (two women, one man) who was apparently waiting in the hallway for an appointment. The experimenter ushered the participant into a laboratory room and then provided a cover story, explaining that the experiment was about how first impressions can affect perceptions of social interactions, that the participant would have a brief interaction with another participant (really a confederate), and that the procedure required one of the two participants to receive information about the other participant before the interaction to examine the effects of first impressions. The experimenter further explained to the true participant that, because he or she was the first to arrive at that session, the other participant (the confederate) would be the one to receive this information and that this information may or may not be true of the participant. The experimenter also added that, to preserve the

validity of the study, he could not disclose the details of the information (to the true participant) until the interaction was over but that he would be sure to explain the nature of the information at that time. After assuring that participants understood this information, the experimenter left the room, ostensibly to wait for the other participant and provide him or her the information. In reality, the confederate was not given any information about the participant and was unaware of the experimental condition.

A few minutes later, the experimenter returned to the room and ushered the confederate into a seat across from the participant. The experimenter explained that the study was about how people perceive their social interactions, that they would have a semistructured 10-min interaction, and that they then would go to separate rooms to complete measures of their perceptions of the interaction. After completing consent forms, participants completed a short questionnaire in which they provided demographic information and responses to a self-esteem scale. The confederate acted as if he or she also was completing the consent forms and questionnaire.

Following this, the participant and confederate took part in the Relationship Closeness Induction Task (RCIT), a 9-min guided and timed interaction task designed to induce feelings of closeness (Sedikides, Campbell, Reeder, & Elliot, 1999). The task consists of three lists of questions presented on three separate pages. The questions gradually become more personal, with questions regarding things such as name, age, and hometown appearing on the first page, hobbies and personal goals on the second page, and childhood memories and emotional experiences on the third page. Participants and confederates took turns asking and answering each question. When they reached the time limit for the page, the experimenter returned to the room to prompt them to turn to the next page.

Once the participants were finished with the RCIT, the experimenter returned and explained that the interaction was over and that now participants would go to separate rooms to complete a survey assessing perceptions of the interaction. He then ushered the confederate out of the room.

At this point, the procedure varied depending on random assignment to one of three experimental conditions. For participants assigned to the no-information control condition (*n* = 62), the experimenter returned and administered the final questionnaire without saying anything about the information that had ostensibly been given to the other participant before the interaction.

For those assigned to the reflected appraisals of vulnerability condition (*n* = 63), the experimenter returned and explained that, now that the interaction was over, he could describe the information that he had given the other participant before the interaction. He then explained, "I told the other participant that you were sensitive about what other people think about you, that you care a lot about that sort of thing." The experimenter then explained that the other participant had read a memo conveying this same information and provided the participant with a copy of the memo. On university letterhead, the memo read as follows:

> Dear participant, you are about to interact with a very sensitive person. Based on prior in-depth interviews and completion of personality inventories, it appears that the participant with whom you are about to interact is extremely sensitive about how he/she comes across to others. This person constantly worries about what other people think, whether other people accept him/her, and whether other people

will want to start a friendship. This person tends to perceive signs of rejection even in situations where people are accepting. In addition, this person is easily hurt and angered by signs of rejection from others. Sincerely, Research Staff.

The experimenter explained that the other participant was in a room completing a survey assessing his or her perceptions of the interaction. The experimenter added that he also wanted to assess the (real) participant's perceptions so that he could compare them with the other participant's responses. He then administered the final questionnaire.

A second control condition also was administered to control for other differences between the two conditions described above ($n = 61$). For instance, factors such as activation of constructs related to vulnerability, sensitivity, and insecurity; suspicion or demand due to disclosure of information ostensibly given to the other participant; and a longer duration between the interaction and completion of dependent measures might serve as alternative explanations of our expected effect. Thus, we also desired to compare the vulnerable condition with an invulnerable condition that differed in terms of the reflected appraisal but did not differ in terms of these other factors. In addition, this condition allowed us to examine effects of inducing reflected appraisals of invulnerability, but we did not have strong predictions regarding such effects because participants in the no-information condition likely assumed that they were not viewed as vulnerable, which is what participants in the invulnerable condition were explicitly told. The experimenter explained that he had told the other participant before the interaction that "you were not sensitive to what other people think about you, that you could really care less about that sort of thing." The memo read as follows:

> You are about to interact with a very insensitive person. Based on prior in-depth interviews and completion of personality inventories, it appears that the participant with whom you are about to interact is extremely insensitive to social cues. This person is oblivious to what others are thinking, is largely unaware of social norms, and cares little about appearance. This person tends to be unaware of signs of rejection and acceptance from others. In addition, this person appears to be unaffected by what other people think, has little ability to take others' perspectives on things, and does not understand others' feelings.

Following completion of the final questionnaire, all participants were debriefed. One participant (in the reflected appraisals of vulnerability condition) expressed suspicion regarding the cover story. Preliminary analyses revealed that exclusion of this participant's responses did not alter the pattern of results. Thus, his responses were included in the analyses presented below.

Measures

Self-esteem. Participants completed the Rosenberg (1965) Self-Esteem Scale using 4-point response scales (1 = *strongly disagree*; 4 = *strongly agree*; $\alpha = .90$).

Expressed and felt happiness. Embedded in the final questionnaire was an item assessing the confederate's expression of happiness ("How much happiness did the participant in this study express toward you?"), followed by an item assessing the confederate's privately felt happiness ("How much happiness did the participant in this study really feel toward you?"). Participants completed these items on 7-point response scales (1 = *very little*; 7 = *a lot*).

Evaluation of vulnerable and invulnerable feedback. All participants were provided with the vulnerable and invulnerable descriptions in the memos and evaluated each on 7-point response scales (1 = *extremely negative*; 7 = *extremely positive*).

Results and Discussion

A 2×2 mixed ANOVA compared differences in ratings of expressed and felt happiness (within-subjects) as a function of experimental condition (vulnerable condition vs. the two control conditions combined). A significant main effect for type of rating, $F(1, 182) = 47.65$, $p < .001$, suggesting that, on average, participants viewed the confederate as expressing more happiness than was truly felt, was qualified by the Type of Rating × Condition interaction, $F(1, 182) = 5.24$, $p < .05$, $\eta^2 = .03$. As expected, in the vulnerable condition, participants believed that the confederate's expressions ($M = 5.14$) were happier than the confederate's private feelings ($M = 4.7$), $t(62) = 5.50$, $p < .001$, $d = .46$. This tendency was reduced in the control conditions ($Ms = 4.8$ and 4.6, respectively), $t(120) = 4.01$, $p < .001$, $d = .23$. Thus, consistent with our expectations (Path c in Figure 1), participants perceived the confederate's expressions of happiness as less authentic when they were told, after the interaction, that the confederate had been informed beforehand that participants were especially vulnerable to rejection.[12]

This result is particularly impressive given that (a) participants could not use reflected appraisals of vulnerability to bias their online perceptions during the interaction but instead had to retrospect in light of information received after the interaction, (b) reflected appraisals of vulnerability were communicated via a third party, and (c) these manipulated reflected appraisals competed with any behavior expressed by the confederate that may have communicated authenticity. Indeed, many other studies suggest that, when causes are presented sequentially, people tend to anchor their judgments on the initial cause and fail to sufficiently discount the initial cause when presented with the alternative cause (see McClure, 1998, for a review). Our effects might have been stronger if participants held reflected appraisals during encoding of the other's behavior, if reflected appraisals were derived naturally from one's self-perceived vulnerability-expressive behavior, and if the other's behavior was constrained so that authenticity was more

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[12] Additional analyses also compared the vulnerable condition with each of the other conditions. The interaction was marginal for the analysis comparing the vulnerable condition with the no-information control condition, $F(1, 122) = 3.47$, $p = .065$. The interaction was significant for the analysis comparing the vulnerable condition with the invulnerable condition, $F(1, 121) = 4.22$, $p = .042$. With one-tailed tests, both effects would be significant. The obtained interaction pattern was the same in both of these analyses. Additional mixed ANOVAs comparing the invulnerable condition with the other two conditions or with only the control condition produced no significant interactions ($ps > .21$). These results suggest that it was participants' beliefs that they were viewed as vulnerable, rather than factors such as activation of insecurity-related constructs, differences in time to complete dependent measures, or suspicion due to receiving information about what the confederate ostensibly had been told, that caused authenticity doubts.

ambiguous.[13] However, as the manipulation was administered after the interaction, our design eliminates the alternative explanation that participants in the reflected appraisals of vulnerability condition elicited inauthentic expressions of happiness from the confederate.

General Discussion

Why do some individuals chronically feel insecure about a particular partner's regard and acceptance? We have proposed that individuals' own reactions to their insecurity initiate cognitions that perpetuate that insecurity. Specifically, our model posits that, when people feel insecure about a partner's regard and acceptance, they often judge their own prior behavior as having communicated insecurity and emotional vulnerability to the partner. Consequently, they come to believe that they are viewed as especially insecure and vulnerable. Then, due to shared beliefs that people walk on eggshells around insecure, vulnerable others, such reflected appraisals of vulnerability elicit doubts about the authenticity of the partner's expressions of regard and acceptance. Once authenticity is doubted, positive expressions are discounted, negative expressions are augmented, and hidden negative regard is inferred even when partners are accepting and actually hold positive regard. This results in continued insecurity in the relationship. Hence, one reason why some people chronically feel insecure in particular relationships is because their own prior reactions to their insecurity have undermined their capacity to trust the partner's expressions of acceptance and positive regard.

Study 1 demonstrated that people believe expressions of regard toward interpersonally insecure and vulnerable others are relatively inauthentic. That is, walking on eggshells does appear to be a common perception of what people do when confronted with especially vulnerable and insecure interaction partners. Studies 2A, 2B, and 4 suggest that, when people believe they have expressed vulnerabilities to a romantic partner or friend, they believe they are viewed as especially vulnerable, which in turn predicts their suspicion regarding the authenticity of the other's expressions of positive regard and acceptance (Paths b and c in Figure 1). Independently of self-esteem and attachment anxiety, reflected appraisals of vulnerability, induced by one's own prior expressions of vulnerability, appear to turn the expectation of walking on eggshells around vulnerable and insecure individuals into suspicion about the partner's behavior.

Study 4 suggests that this process can operate independently of the partner's appraisals of vulnerability and reported authenticity. Study 5 provides additional evidence for the role of subjective reflected appraisals of vulnerability in producing authenticity doubts, showing that directly inducing these reflected appraisals caused participants to doubt a new acquaintance's expressions of happiness despite the fact that the new acquaintance actually did not view them as especially vulnerable. According to our model, egocentric biases to focus on one's own behavior and internal experiences and to believe that others make more dispositional attributions for one's behavior than they actually do cause individuals who feel especially insecure in a relationship to believe that they are viewed as vulnerable by partners independently of whether partners actually view them this way. Once this belief is in place, the corresponding belief that others walk on eggshells around vulnerable individuals (demonstrated in Study 1) incites

doubts about the authenticity of the partner's expressions of regard, even if partners have not responded by delivering inauthentic feedback.

In turn, Studies 3 and 4 showed that these doubts about the authenticity of a romantic partner's or a friend's regard predicted more pessimistic perceptions of the other's regard and caring (Path d in Figure 1). In Study 4, this effect was obtained after controlling for the friend's reports of regard and caring, suggesting that authenticity doubts initiate cognitive processes that undermine felt interpersonal security independently of partners' actual thoughts and feelings. According to our model, an individual's authenticity doubts create a disconnection between the partner's valuing and accepting behavior and the individual's inferences of value and acceptance. In particular, authenticity doubts may result in a downward estimation of the partner's true regard and acceptance, as expressions of positive regard are presumed to be exaggerated and clandestine rejection can be inferred from the partner's presumed cautious orientation. Thus, our findings suggest that one way in which people unwittingly remain insecure about a partner's acceptance is that they behave in ways that ultimately and subjectively invalidate the partner's expressions of positive regard and foster perceptions of negative regard despite the lack of confirmatory behavioral evidence and even in the presence of contradictory evidence.

Although our studies support our model, we are not positing that our theorized predictors of each model variable are the only predictors. For instance, in addition to insecurity about a partner's regard and acceptance, perhaps insecure self-esteem engenders reactivity to esteem-threatening events (Kernis, 2003), which independently predicts reflected appraisals of vulnerability and, in turn, authenticity doubts. We found evidence for our model while controlling for low self-esteem, and insecurity about a partner's regard in particular did predict expressions of vulnerability and was predicted by authenticity doubts, but it may be the case that our model applies to events that threaten self-esteem just as well as it does to events that threaten relational security. Indeed, these two types of events seem to be highly confounded (MacDonald, Saltzman, & Leary, 2003; Murray et al., 1998, 2001). That is, events that threaten self-esteem tend to be events that threaten relational security and vice versa.

Why Do Individuals Perpetuate Their Insecurity?

We certainly do not believe that people consciously wish to undermine their own security. Rather, when people are insecure about a partner's acceptance, they are likely unaware of how their behavioral responses can perpetuate their insecurity. During social interaction, those who feel insecure about a partner's acceptance and regard may often focus on present needs for security or

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[13] Additional analyses examined whether self-esteem, gender, or confederate further moderated the two-way interaction. They did not ($ps > .81$). Additional mixed ANOVAs found no effects of condition on evaluation of the vulnerable or invulnerable feedback, more positive evaluations of the vulnerable feedback than of the invulnerable feedback in all conditions, and the same interaction after controlling for evaluation of the vulnerable feedback and its interaction with expressed versus felt happiness. These results suggest that negative evaluation of the feedback involved in the reflected appraisals of vulnerability manipulation did not account for the effects.

self-protection. They may protect the self from perceived impending rejection by derogating the partner and the relationship (Murray et al., 2006) or seek reassurance to alleviate self-doubt (Coyne, 1999; Joiner, Metalsky, et al., 1999). In addition, vulnerabilities may be strategically expressed in an effort to suppress a partner's negative feedback, especially when one anticipates negative feedback and fears that it will be painful.

However, whatever emotional gratification is conferred by such strategies may be only temporary. Responding to insecurity with use of these short-term emotion-regulation strategies may increase the probability of experiencing threats that create a need for similar regulation responses in the future. That is, by lashing out in response to perceived rejection or by seeming especially desirous of or dependent on a partner's approval, people cannot be sure whether subsequent apologies, affections, or approval reflect the partner's private sentiments. Burdened with this distrust, similar threats and insecurities are all the more forthcoming. Indeed, Study 4 showed that initial insecurity about a partner's regard, which was predicted by authenticity doubts, in turn predicted derogation of the partner and indirectly predicted later expressions of vulnerability, suggesting that authenticity doubts contribute to the experience and expression of insecurity that initially produced them (Path a in Figure 1). Seeking self-protection by derogating or punishing a partner (see Murray et al., 2006) or seeking interpersonal security by asking for reassurance, accompanied by inadvertent expressions of heightened insecurity and vulnerability to rejection, appears to be an example of a self-defeating tendency to prioritize short-term emotion regulation over self-regulation that promotes long-term interpersonal well-being (see Baumeister & Scher, 1988, for a review).

Should Insecurities Be Suppressed?

Our model and findings suggest that expressing interpersonal insecurities can perpetuate them. Does this mean that those who feel insecure within particular relationships should avoid disclosing their concerns to their partners? We believe the answer is no.

Suppressing insecurities could result in those who are insecure never testing the reality of their partner's affections. In addition, by suggesting to the self that the partner cannot be trusted and by not sharing important aspects of the self, the suppression likely undermines feelings of intimacy. Other theoretical perspectives and findings suggest that self-disclosure, especially disclosure of emotions, enhances felt intimacy (Laurenceau, Barrett, & Pietromonaco, 1998; Reis & Shaver, 1988) and that emotional disclosure is more likely, is more desired, and elicits helping more in communal relationships than in noncommunal relationships (Clark, Fitness, & Brissette, 2000; Clark, Ouellette, Powell, & Milberg, 1987; Clark & Taraban, 1991). Suppressing insecurities and vulnerabilities, then, may deprive both partners of an intimate and optimally communal relationship. Moreover, actively attempting to suppress insecurities may have the ironic effect of making them all the more salient (Wenzlaff & Wegner, 2000).

Instead, the cognitive consequences of expressions may need to be changed. Self-disclosure builds communal and intimate relationships when partners respond to the disclosure in ways that leave disclosers feeling valued and cared for (Reis & Shaver, 1988). We have argued that perceiving that one has expressed vulnerabilities causes authenticity doubts that interfere with such feelings. However, the cycle of insecurity perpetuation that we have emphasized might be undermined by modifying the links between disclosure and authenticity doubts. If this were possible, those who express their vulnerabilities might be better able to perceive their partners as responding supportively. An accumulation of such interactions may then reduce the experience of relationship insecurities and, consequently, their expression.

How might these links be changed? We have posited particular cognitive distortions as mediating mechanisms. These distortions include a tendency to believe that one's behavior and internal experiences are more observable than they are and a tendency to exaggerate the extent to which others respond with dispositional attributions. Indeed, beliefs about being perceived as vulnerable largely accounted for the link between expressions of vulnerability and authenticity doubts. Thus, altering these cognitive distortions seems to be a promising strategy.

Moreover, this strategy appears possible. Savitsky et al. (2001) argued that the illusion of transparency may be due to a focusing illusion—the tendency to focus on specific stimuli and give undue weight to other stimuli when making predictions. That is, people mistakenly assume that their own behavior is just as salient to observers as it is to the self. Manipulations designed to eliminate this focusing illusion can change the way people believe they are viewed by others. For example, the tendency to feel negatively evaluated by others following public display of inadequacies or social blunders was reduced by instructing participants to defocus—to consider the many factors that might affect the observer's evaluations (Savitsky et al., 2001, Studies 3 and 4). In addition, relative to control participants, those who were informed about the illusion of transparency—in this case, the tendency to overestimate the extent to which others can observe one's anxiety—gave better speeches and appeared more relaxed both from their own perspective and from the audience's perspective (Savitsky & Gilovich, 2003, Study 2). Perhaps those who are insecure about a partner's acceptance can learn to broaden their focus and consider the many other factors that may determine whether partners perceive them as excessively interpersonally vulnerable. This may convince them that their interpersonal vulnerability is not as salient to their partners as they have presumed.

Further in the posited cycle, perhaps insecure individuals can learn to trust their partner's expressions of acceptance and positive regard despite the reflected appraisals of vulnerability. Although walking on eggshells appears to be a widely held belief about how people respond to others' insecurity, there may be individual differences. For example, people who are chronically attentive to social cues appear better able to detect others' ingratiating behavior (Jones & Baumeister, 1976). Such individuals are likely aware of the situational factors that motivate deceptive social behavior. Perhaps insecure individuals can learn to attend to and later remember cues suggesting the partner's authenticity. For example, they could take a partner's willingness to sometimes behave badly (i.e., selfishness, irritability) as evidence that their partners are authentic, rather than presuming rejection and maintaining authenticity doubts. They also could view relationship longevity and the partner's tolerance of one's transgressions as evidence that the partner must truly accept the self and value the relationship. These tactics also may involve a form of broadening one's focus, actively considering the partner's motives for authentic responding (e.g., the partner's desire for intimacy, the partner's values, or the

partner's desire to provide help through honest feedback) that may be operating alongside the presumed motive to provide inauthentic feedback.

Implications for Research on Relationship Security

Our model is distinct from other perspectives on the maintenance of insecurity. Prior perspectives have posited either a *perceptual confirmation process* biased by individual differences or a *behavioral confirmation process.* A perceptual confirmation process occurs when prior expectations bias attention to and processing of social information in a manner that confirms those initial expectations (Snyder & Stukas, 1999). Several models positing that this type of bias is driven by individual differences have been proposed and empirically supported. For example, the sociometer model construes trait self-esteem as a barometer of one's value as a relationship partner over the long run (Leary & Baumeister, 2000). Moreover, because people with low self-esteem have a history of rejection, they are thought to be particularly vigilant for and likely to detect social rejection. Indeed, people with low self-esteem tend to perceive others as less accepting than do people with high self-esteem (Leary, Tambor, Terdal, & Downs, 1995; Lemay & Ashmore, 2006; Srivastava & Beer, 2005), and they substantially underestimate their romantic partner's love and regard for them (Murray et al., 2000, 2001). Individual differences in attachment-related anxiety and rejection sensitivity also have been viewed as sources of bias in perceiving rejection (e.g., Collins, 1996; Downey & Feldman, 1996).

Other models have posited that insecurity is perpetuated through behavioral confirmation, such that insecure individuals behave in a manner that actually brings about rejection from relationship partners. Doubting a dating partner's regard, for example, predicts temporal decreases in that partner's trust and satisfaction (Murray et al., 2000), and rejection-sensitive individuals have partners who report less satisfaction and commitment and more anger following conflict (Downey et al., 1998). Coyne's (1976) interpersonal model of depression similarly posits that depressed individuals' excessive reassurance seeking is distressing to partners and may cause them to reject depressed individuals.

Our model suggests another type of process that may perpetuate insecurity. In particular, although individual differences in general expectancies for rejection may predict felt insecurity and behavioral reactions to that insecurity, these reactions may exert effects on subsequent feelings of security independently of those initial expectancies and independently of the partner's reactions. This view is distinct from the individual-differences view in its emphasis on the biasing effects of one's own behavior within particular relationships. Moreover, our studies provide an empirical distinction; one's own expressions of vulnerability and reflected appraisals of vulnerability predicted authenticity doubts, and authenticity doubts predicted perceived rejection, independently of the general expectations for rejection reflected in low self-esteem and attachment-related anxiety. This view also is distinct from a behavioral confirmation view. Although both views emphasize the role of behavior in perpetuating insecurity, our model suggests that behavior may be a source of perceptual bias in addition to bringing about actual rejection by a partner. Our findings that one's own expressions of vulnerability predicted authenticity doubts and per-

ceived rejection independently of the partner's reactions support this distinction, as does our experimental study.

The current research is just one example of how people's own interpersonal behaviors and their cognitions about their behaviors can influence their felt security. Some of our other findings also fit with this view—people induced to believe that they have not been responsive to the needs of relationship partners and people who chronically felt that they were not responsive perceived that their relationship partners did not care for them (Lemay & Clark, in press; Lemay et al., 2007) independently of their partners' reports of their actual caring and independently of depression, self-esteem, and attachment-related anxiety and avoidance. That is, self-perceptions of one's own communal behavior affected perceptions of the other's caring even after accounting for the effects predicted by perceptual confirmation guided by individual differences and behavioral confirmation. A full understanding of how security is perpetuated may require use of several models, considering that individual differences in expectations for rejection may exert a direct bias on perceptions of rejection, that they may guide behavior that actually elicits rejection from others, and that they may guide behavior that itself independently biases subsequent perceptions.

Although our model posits a normative relationship process that is initiated by and perpetuates relationship-specific insecurity, individual differences are likely to be important. Individual differences in proclivities to feel secure or insecure in relationships, such as low self-esteem, attachment-related anxiety, or rejection sensitivity, do predict felt security in particular relationships. They also likely predict reflected appraisals of vulnerability and authenticity doubts. Hence, these individual differences may act as distal predictors of any of our model components, which may then trigger the normative, cyclical relationship process we have emphasized. For example, those with low self-esteem or attachment anxiety may project their own insecurity onto the views they believe their partners hold of them. Once they believe they are viewed as highly insecure and vulnerable, the normative process we have emphasized may become operative; they may discount the partner's expressions of positive regard, infer less positive regard than is the case, and express this insecurity about the partner's regard to the partner, which only reaffirms their belief that they are viewed as insecure. Indeed, in addition to finding evidence in support for our normative process model, we also found that low self-esteem and attachment anxiety predicted expressions of vulnerability and reflected appraisals of vulnerability. Low self-esteem also predicted authenticity doubts and insecurity about a partner's caring and regard. Hence, all else being equal, our normative model may especially pertain to the relationship dynamics of those who tend to be insecure in relationships generally because, through other processes not emphasized in the current research, such individuals are especially likely to intensely and frequently express vulnerabilities, believe they are viewed as vulnerable, and doubt authenticity. However, the process we have emphasized may describe specific relationships involving individuals who nevertheless tend to be secure in their other relationships.

Conclusion

Although people strongly desire involvement in caring, stable relationships, some individuals have difficulty maintaining their

confidence that particular partners value, accept, and care for them. An important source of this difficulty may be the ways in which they attempt to achieve these types of relationships. By seeking security or self-protection in ways that express heightened vulnerabilities to rejection, they, at least in their own minds, have given their partners reason to be inauthentic, which only causes them to continue doubting their partners' sentiments. In this way, reactions to relationship threats in the present may impede relational security and necessitate similar reactions in the future.

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