

# What I See When I Think It's About Me: People Low in Rejection-Sensitivity Downplay Cues of Rejection in Self-Relevant Interpersonal Situations

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Gauging one's impression on a potential mate is challenging. There is a need to make reasonably accurate inferences from subtle, dynamic facial expressions and to maintain motivation to connect despite the risk of rejection. The interpersonal optimism of people low in rejection sensitivity (RS), people who confidently expect acceptance rather than anxiously expect rejection, as do their high RS counterparts, suggests that they may strategically underestimate social threat cues when inferring the impression they have made on others. To test this hypothesis, participants viewed the videotaped reactions of individuals said to have read the participant's own or someone else's biographical sketch in an online dating context, and then estimated the emotions of the targets. Estimates of negativity were unrelated to RS when participants believed the videos captured the reactions to someone else's biographical sketch. However, to the extent that participants were low in RS, they made lower estimates of negativity when they believed the videos showed reactions to their biographical sketch compared to when they believed the videos captured the reactions to someone else's biographical sketch. The tracking accuracy of participants estimating negativity was unrelated to RS under either condition, but increased with trait empathy. RS was unrelated to estimates of positivity. Supporting functional perspectives on interpersonal perception, results show that interpersonal optimism shapes impressions of others' reactions to the self in ways that can foster relationship initiation.

*Keywords:* person-perception, rejection-sensitivity, rejection, empathy, positive illusions

What people perceive in the faces of potential romantic partners can determine whom they approach and whom they avoid (Adams, Ambady, Macrae, & Kleck, 2006; Marsh, Ambady, & Kleck, 2005; Marsh, Kozak, & Ambady, 2007; North, Todorov, & Osherson, 2010; Oosterhof & Todorov, 2009). However, gauging the first impression one has made on a prospective mate is a challenging process. There is a need to make complex inferences based on subtle, brief, and ever-changing nonverbal cues conveyed through the person's facial expressions. During this process people must also support the goal of forming a connection despite the risk of rejection. In

such circumstances, downplaying any doubts visible in a potential dating partner's spontaneous and candid initial reaction may help people overcome rejection concerns that could inhibit relationship initiation and, thus, motivate actions that foster rapport and facilitate relationship formation. This study tests the prediction that, in self-relevant situations, individuals confident about being accepted will downplay social threat to a greater extent than those who anxiously expect rejection. We predict this perceptual bias based on research suggesting that the resilience to rejection cues characteristic of those confident of acceptance involves the use of cognitive-regulatory systems to moderate the counterproductive reactions to social threat that characterize those who anxiously expect rejection (Downey, Mougios, Ayduk, London, & Shoda, 2004; Downey, Zaki, & Mitchell, 2008; Romero-Canyas, Downey, Berenson, Ayduk, & Kang, 2010).

Our hypothesis is consistent with various models of the processes that unfold as people establish and maintain relationships while managing the possibility of rejection (Downey et al., 2004; Murray, Holmes, & Collins, 2006; Pickett, Gardner, & Knowles, 2004). These models acknowledge that to form social connections, people must approach others, thus, risking rejection and the pain it produces. Accordingly, balancing the goals of relationship-formation and of rejection-prevention is crucial. Individual differences are associated with which goal is favored. For example, people with low levels of global self-esteem have higher expectations of interpersonal rejection (Murray, Rose, Bellavia, Holmes, & Kusche, 2002) that bias

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them toward interpreting the behavior and affect of others as signaling less acceptance compared to people high in self-esteem. High self-esteem people make higher estimates of how positively their partners feel toward them (Murray, Holmes, Griffin, Bellavia, & Rose, 2001) and interpret the behavior of strangers they just met as more accepting than low self-esteem people in similar situations (Cameron, Stinson, Gaetz, & Balchen, 2010). Our proposal is that in addition to this bias toward perceiving positivity, in situations of initial contact, people who confidently expect acceptance may adaptively downplay negativity in order to remain positively engaged with others, thus, facilitating the interaction and increasing the likelihood of being accepted. This strategy should be captured as a motivated bias to see less self-relevant interpersonal negativity.

### Perceptual Bias as Threat Management

The ability to infer what others are thinking and feeling is at the core of the empathic processes that support human communication; people need to understand what those around them are feeling. Thus, people are capable of inferring a lot of information from limited exposure to others. Though aggregate judgments based on “thin-slice-of-life” information available from first encounters have predictive validity (Ambady & Rosenthal, 1992), individuals are relatively poor at inferring the specific content of other people’s minds at a specific point in time. Several strands of research suggest that such inaccuracy can provide individuals with the opportunity to err in ways that support relationships (e.g., Ickes & Simpson, 1997; McKay & Dennett, 2009). Specifically in the case of threats to relationship formation and maintenance, a systematic bias toward underestimating threat is potentially adaptive (McKay & Dennett, 2009). Functionalist accounts of interpersonal perception would lead us to expect such a bias in mate selection (e.g., Balcetis, 2009; Balcetis & Dunning, 2005; Swann & Ely, 1984), particularly in the early stages of relationships (Fletcher & Kerr, 2010). Thus, there is a basis for predicting that the skilled management of relationships depends both on (a) people’s ability to infer the thoughts and feelings of others and, (b) on interpreting cues of these thoughts and feelings in a way that reduces social threat and gives one the benefit of the doubt, particularly in situations that involve social evaluation.

Our hypothesis that people who securely expect acceptance will downplay self-relevant negativity to a greater extent than non-self-relevant negativity is an idea that has parallels in the body of work examining positive illusion and self-enhancement (Kwan, John, Kenny, Bond, & Robins, 2004; Swann, Pelham, & Krull, 1989; Taylor & Brown, 1988, 1994; Taylor, Lerner, Sherman, Sage, & McDowell, 2003). However, self-enhancement implies a positive bias that supports one’s positive self-views, resulting in one viewing oneself as either better than others or more positively regarded by others than is consistent with the evidence. By contrast, social threat management involves the underestimation of self-relevant negativity rather than the overestimation of positivity.

### Implications of Expecting Acceptance Versus Rejection for Social Threat Management

The differences between those who expect rejection and those are confident in their social acceptability should emerge in situa-

tions that exacerbate the tension between the goals of connecting with others and of avoiding rejection—risky situations of relational threat such as first meetings with potential romantic partners. When threat emerges during these early stages of interaction, when little has been communicated, inferences made from facial expressions should be influenced by people’s motivated biases. During social interactions a face can display signs of both rejection and of acceptance; a smile and nod that convey liking can be followed by a frown and a grimace. When faced with this mix of information, the optimal threat management strategy for those who fear rejection may be to assess the *degree* of threat as accurately as possible; for those secure in their social acceptability, it may be preferable to strategically downplay threat, allowing for behavior that establishes rapport and is likely to elicit acceptance. As the interaction unfolds, different biases may serve the goals of rejection-prevention and connection-formation. Individuals with high self-esteem (Murray et al., 2002), little attachment anxiety (Mikulincer & Shaver, 2003), or low expectations of rejection (Downey & Feldman, 1996) are among those who might be biased toward downplaying self-relevant negativity.

**Rejection-sensitivity and threat management.** The strategic threat management that we propose is one of the tactics that should distinguish people who confidently expect acceptance from those who anxiously expect rejection. This distinction emerges from research on rejection sensitivity (RS), the disposition to anxiously expect and intensely respond to rejection (Downey & Feldman, 1996).

Those low in RS are characterized as *confident* of acceptance and as responding relatively more adaptively to interpersonal challenges involving rejection threats. Those high in RS are characterized by *anxious* expectations of rejection and a tendency to respond to rejection threats in counterproductive ways that often hasten the rejection they fear (see Romero-Canyas, Downey, Berenson et al., 2010). In interpersonal situations that normatively elicit strong, negative affective responses such as anger and hostility, people low in RS are less likely to show these responses (Ayduk, Downey, Testa, Yen, & Shoda, 1999; Romero-Canyas, Downey, Berenson et al., 2010). Relative to high RS people, those low in RS are more successful at initiating (Crew, Berenson, Downey, Bolger, & Kang, 2010) and maintaining their relationships (Downey, Freitas, Michaelis, & Khouri, 1998). In sum, low RS people seem to interact with others in ways that are more likely to result in the formation and maintenance of relationships. We believe that a key step in this process is the down-regulation of self-relevant threatening information by low RS people. Research has demonstrated that low and high RS people differ in their response and interpretation of negative social events, but not of positive social events, suggesting the RS system is threat-focused. Thus, differences between low and high RS people, with regard to social threat management, should emerge in how much they downplay the negative rather than enhance the positive.

The secure expectations of acceptance of low RS people operate as a system geared toward assessing danger and down-regulating distress and impulsive fight-or-flight responses, presumably through cognitive reappraisal (Ayduk, Mischel, & Downey, 2002). The expectations of rejection of high RS people seem to operate as an affectively driven system, geared to rapidly and automatically detect threat (Berenson et al., 2009). The regulatory capability that

might operate among low RS people is important in interpersonal relations where the goal is to establish or maintain connection with the threat source. During the earliest stages of a relationship it might be necessary for individuals to draw on their cognitive, self-regulatory resources to quell defensive responses, such as hostility and avoidance, in the face of cues indicative of possible rejection. Halting defensive behaviors allows for rapport to form. Conversely, for highly rejection-sensitive people, accurate assessment of threat level may be a better strategy for managing subtle cues of another person's evaluation of them.<sup>1</sup>

Two studies that examined responses to visual depictions of rejection themes illustrate the differences between high and low RS individuals in the regulation of perceived rejection threat. Consistent with the view that high RS operates as a threat-driven system, when viewing paintings known to evoke feelings of rejection (by Edward Hopper), but not distress-inducing nonrepresentational themes (Rothko) or positivity-inducing themes (Renoir, Miró), those high in RS exhibited an increased startle response indicative of a heightened threat state (Downey et al., 2004). In a separate neuroimaging study of people viewing the same Hopper paintings, those low in RS showed increased activity relative to those high in RS in prefrontal cortical regions related to cognitive control; activity in these areas correlated negatively with self-report distress ratings (Kross, Egner, Ochsner, Hirsch, & Downey, 2007). The neural activity of those low in RS resembles that observed in participants instructed to down-regulate negative responses to aversive images by reappraising their meaning (Ochsner, Bunge, Gross, & Gabrieli, 2002; Ochsner et al., 2004). This finding supports the view that a difference between those high and low in RS is the use of self-regulation in the face of rejection threat (Ayduk et al., 2002).

Strategically downplaying social threat should also be evident among individuals confident in their acceptability, as captured by individual differences other than RS. The personal history of interpersonal rejection that characterizes high levels of RS is associated with anxious and ambivalent attachment styles (Feldman & Downey, 1994). Similar concerns underlie other interpersonal dispositions such as social anxiety, social avoidance, fear of negative evaluation (Romero-Canyas, Downey, Reddy et al., 2010) and low self-esteem.

**Motivated inaccuracy as strategic threat management.** Our hypothesis that low RS people strategically downplay self-relevant negativity is supported by findings by Simpson, Ickes, and Grich (1999) on motivated inaccuracy from an attachment perspective. Within Ickes's empathic accuracy paradigm (Ickes, 1997, 2001), accuracy refers to agreement between an individual's inferences about a partner's thoughts and feelings at a specific point in time and the partner's self-reported thoughts and feelings right then. Using this framework, Simpson et al. (1999) found that in more satisfying relationships, agreement between partners was lower when one partner was gauging the thoughts of the other partner who was appraising attractive alternative partners (see also Simpson, Ickes, & Blackstone, 1995). Reduced accuracy in this threatening circumstance was more evident in people who were secure in their relationships than in those who were anxious and uncertain. Among the latter, accurately reading a partner's threatening thoughts predicted breakup. Thus, there is a basis for predicting that those who expect acceptance should make inferences that reflect a systematic underestimation of situational self-threat.

However, Simpson et al. (1999) did not explicitly assess the extent to which this inaccuracy comprised a tendency toward underestimating negativity.

Prior work shows that differences between low and high RS people, in terms of affective and behavioral responses to interpersonal information emerge specifically when that information is self-relevant and increases relational risk (Ayduk, Gyurak, & Lurssen, 2008; Downey & Feldman, 1996; Downey et al., 1998; Romero-Canyas, Downey, Reddy et al., 2010). Thus, we expect that the downplaying of interpersonal negativity by low RS people should emerge in self-relevant situations. We would expect levels of RS to be associated with higher estimates of other people's negativity when the negativity is directed toward the self, but not when directed toward others. In other words, among those low in RS, self-relevance should result in bias to see others as less unfavorable to oneself. For those high in RS, the self-relevance of other's emotions should not significantly influence estimation of the unfavorability of those emotions; if anything, high RS people might be biased toward seeing self-relevant emotions as more negative.

Low RS people's bias to underestimate negativity should be evident even when we account for a relation between RS and people's ability to detect differences in the degree of negativity expressed by others, the relation that has been denoted *tracking accuracy* (Fletcher & Kerr, 2010). Past research has shown that RS is unrelated to accurately identifying and differentiating between facial expressions of emotion (Pickett, Gardner, & Knowles, 2004), which suggests that RS might not be associated with empathy. However, this study did not take into account the self-relevance of the inference being made nor did it consider tracking accuracy. Self-relevance may make high RS people monitor other people's feelings. Thus, we test for RS effects of tracking accuracy as a function of self-relevance.

## Goals of the Study

To test our prediction that low RS people would downplay self-relevant negativity in comparison with high RS people, we sought a design that retained the ecological validity of Ickes' empathic accuracy paradigm, but allowed us to examine perceptions of the same target stimuli under conditions that were either self-relevant (relationally risky) or not self-relevant (posing no risk). The hope was to circumvent a limitation of much prior work on empathic accuracy, work that entailed having people make judgments about either non-self-relevant strangers (e.g., Zaki, Bolger, & Ochsner, 2008) or about romantic partners, people with whom they have a history (e.g., Simpson et al., 1999). Thus, using a modification of Winton, Putnam, and Krauss's (1984) emotion judgment paradigm, we had participants make inferences about

<sup>1</sup> Low and high RS people perceive strong signals of rejection (e.g. an argument, a viciously uttered comment expressing disapproval) similarly, though they respond differently to them. For instance, both low and high RS people report feeling rejected at similar levels when harshly rejected, but high RS people are more likely to behave in ways intended to counteract the rejection (cf. Romero-Canyas, Downey, Berenson, et al., 2010; Romero-Canyas, Downey, Reddy et al., 2010; Romero-Canyas, Reddy, Rodriguez, & Downey, 2012). However, when the rejection is less harsh and more ambiguous, high RS people do tend to see more rejection than do low RS people (Ayduk et al., 1999; Downey & Feldman, 1996).

how positive and how negative opposite sex targets felt based on brief video clips of the targets' facial expressions. Participants were told the targets were potential dating partners reacting to biographical sketches in an online dating service.

To manipulate the *self-relevance* of the emotions participants would see, half of the participants were randomly selected to be told the targets were responding to their biographical sketch and the other half were told the targets were reacting to the biographical sketches of other users of the dating service. The targets were, in fact, reacting to the name of someone familiar, about whom they felt strongly (positively or negatively) or neutral. Thus, in developing the target stimuli, the intention was to simulate as closely as possible the real life nonverbal cues people use when interpreting others' affective reactions when these are expressed subtly.

Of primary interest was the extent to which participants' inferences were influenced by the self-relevance of the inference task and by the participants' level of RS. To determine whether the effects of RS were limited to bias and were independent of tracking accuracy, we used an analytic approach that enabled the decomposition of inferences about others' feelings in terms of bias and tracking accuracy (Kenny & Acitelli, 2001; Kenny, Kashy, & Cook, 2006; Kenny & West, 2010).<sup>2</sup> Whereas we predict a bias effect associated with RS, there is little basis for expecting that RS directly affects tracking accuracy, assessed as the relation between the viewer's estimate of the emotion and the target's emotion. We expected a positive association between RS and estimates of negativity, but not of positivity; prior research strongly suggests that the RS system is singularly attuned to interpersonal negativity, but not positive social information (Berenson et al., 2009) or negative emotion in general (Downey et al., 2004).

It has been established that people's effectiveness at inferring what someone else is thinking and feeling, their empathic abilities, varies widely. It is possible that this ability is also associated with people's concerns about interpersonal acceptance. Thus, it was important to establish that any RS effects in the study were not artifacts of the association between RS and trait empathy. In our analyses we included participants' trait empathy scores and tested for their association with bias and tracking accuracy in estimating the emotions of others. Empathy was assessed with a measure that in past studies has predicted tracking accuracy (Zaki, Bolger, & Ochsner, 2008, 2009). Thus, in addition to testing whether empathic ability is an alternative explanation for RS effects, inclusion of empathy in our analyses tested the validity of our paradigm as a viable one for studying empathy and mind-reading.

## Method

### Generating Target Videos

**Participants.** University students ( $N = 49$ ; 40.8% female; 36.70% ethnic minorities; age:  $M = 21.5$ ,  $SD = 3.4$ ) were recruited through fliers, supposedly for a study on the effects of emotion on memory, and were compensated \$10.

**Procedures.** Participants were asked to write the names of three people they disliked intensely, three they liked a lot, and two toward whom they were indifferent. The experimenter went to a second room to enter the list into a computer program, described below, and then explained the computer task. On its completion, participants were debriefed. Forty-five participants authorized the

use of their videos. The video-clips selected for use in the experimental study were drawn from the footage of these 45 volunteers.

**Computer task.** Participants viewed each of the eight names they had listed and 22 names of famous people or events that had elicited a range of responses in pilot work (e.g., Zacharias Mousaoui, Christina Aguilera, George W. Bush, Matt Damon). Names were presented in random order at the center of the computer screen. After 10 seconds had passed since the appearance of a name, a cue signaled participants to talk about the emotions and thoughts they had just experienced. After 10 seconds, the following questions were presented individually, in random order: "How positive did this person/event make you feel?"; "How negative did this person/event make you feel?"; "How pleasant were the feelings you experienced when thinking about this person/event?" and "How upset did thinking about this person/event make you feel?" Answers were on a 9-point scale (1 = *not at all*; 9 = *completely*). These were the only four questions respondents answered about each name.

**Stimulus selection.** The 10 seconds of "thinking time" were used to capture participants' spontaneous facial reactions to the name onscreen without interference by the facial movements that accompany speech production. Thirty-six video clips (18 male, 18 female) were selected, each from a different person or target. A third of the videos were of targets that had made ratings of positivity higher than ratings of negativity, and ratings of feeling pleasant greater than of feeling upset, Means ( $SD$ ): Negativity = 1.33 (0.49); Pleasant = 6.92 (2.02); Positivity = 6.75 (2.05); Upset = 1.33 (0.49). For a third of the videos the reverse was true (negative > positive; upset > pleasant), Means ( $SD$ ): Negativity = 6.08 (2.47); Pleasant = 1.75 (0.87); Positivity = 1.83 (0.94); Upset = 6.08 (2.47). The final third were videos that had received generally low or intermediate (but never high) ratings on all emotions, Means ( $SD$ ): Negativity = 2.25 (1.60); Pleasant = 2.58 (1.62); Positivity = 2.42 (1.73); Upset = 2.25 (1.60). When choosing videos, we considered negativity and positivity first, but we only selected videos for which upset and pleasant ratings were consistent with negativity and positivity scores, respectively (i.e., a high rating of positivity had to be accompanied by a high rating of pleasant). The videos represented the full range of scores for positivity and negativity, Negativity  $M = 3.83$ ,  $SD = 2.94$ , Positivity  $M = 3.70$ ,  $SD = 2.69$ .

Ten independent raters categorized the videos as neutral, positive, or negative to confirm that videos were perceived in a manner consistent with the content. The final set of 36 videos consisted of videos placed by all raters in the category that fit the criteria. Of the final 18 female videos, eight were of women reacting to the name of someone they had entered into the computer program. Of the final 18 male videos, six videos were of men responding to names they had entered into the program.

<sup>2</sup> Another advantage of this analytic strategy is that the target's self-reported level of signal (positivity or negativity) is included in the model. Thus, any bias that results from the perceiver's characteristics, such as their RS, emerges across or as a function of changes in signal strength. This differentiates our study from others where participants were exposed to confederates (live or recorded) that had been instructed to act in certain ways, and where participants made global assessments of the interaction as a whole.

## Experimental Study

### Participants

Students who responded via e-mail to fliers describing a study on online dating were invited to participate in the two-session study if they were single or in noncommitted relationships ( $N = 129$  students; 48.2% male; 65.9% Caucasian Americans; age:  $M = 20.70$ ,  $SD = 2.48$ ). In addition to the 129, 16 other participants completed the study but were not included in the analyses because they were older (over 40,  $N = 2$ ) than the college age students in the videos, because of computer malfunctions (the computer had to be restarted or there was an error in the sex of the videos presented;  $N = 3$ ) or because they completed Session 1 but not Session 2. Participants who did not complete the full study were not significantly different in RS or empathy relative to those who did complete the study.

### Procedures

**Session 1.** An experimenter explained that the study was part of a project about the nonphysical characteristics people found attractive when they read about others online. Participants would create a profile in a dating Web site, return two weeks later to evaluate the profiles of people deemed a match for her/him, read a summary of what other people thought of her/his profile and potentially meet one of the matches.

Participants completed the measures described below and were then brought to a computer and presented with the study Web site, "Psyche's Online Dating." Like those in dating Web sites, some questions were about food preferences, drinking habits, and living arrangements, but there were no questions about appearance or race. Participants then created a biographical sketch by answering 10 open-ended questions about where they were born, their hobbies and interests. Participants were compensated \$10 for completing this portion of the study.

**Session 2.** When participants returned, two weeks later, a same sex experimenter instructed them to evaluate a sample profile and explained there was one additional, computer-based task about how people infer what others are feeling based solely on facial expressions in videos. Purportedly, the videos were recordings of participants in the study reading the profiles of their matches. To make the cover story believable, a video camera was located next to the computer used by the participant.

**Experimental self-relevance conditions.** Participants were assigned randomly to one of two conditions. In the *Not Self-Relevant* condition, the experimenters said: "None of the videos will be of people reading your profile." This was intended to elicit relatively low feelings of threat. By contrast, the *Self-Relevant* condition was meant to be more threatening. The experimenters said: "All the videos you'll be watching are of people who were reading your profile as they were being filmed."

As a manipulation check, the experimenters asked participants to indicate their understanding of the task, and then reiterated the explanation of the condition. The participant was left alone in the room to complete the task. The rest of the session was devoted to another study in which participants received rejecting, accepting, or lukewarm feedback on their profile. After those procedures, the experimenter carefully debriefed participants, asking about suspicion and recording these concerns in a protocol log. During the

debriefing, participants commented on the computer task, but were generally focused on the feedback experiment that followed. Only two recruited participants suspected that the videos in the computer task were not truly part of the online dating experiment; these participants were not part of the final and analyzed sample of 129 because they were older than the intended sample. After the debriefing participants received their final compensation (\$15).

### Materials

**Rejection Sensitivity Questionnaire.** Rejection Sensitivity Questionnaire assesses anxious expectations of rejection (Downey & Feldman, 1996). The measure consists of 18 situations in which rejection is possible (e.g., "You ask your friend to do you a big favor"). For each situation, respondents rate the level of anxiety that they would experience about the outcome of the situation (1 = *very unconcerned*, 6 = *very concerned*) and the likelihood of acceptance (1 = *very unlikely*, 6 = *very likely*). The rating of expected acceptance is reverse-coded to indicate expectations of rejection and then multiplied by the degree of anxiety experienced in the situation. A total RSQ score is computed by obtaining the mean score across the situations ( $M = 9.77$ ,  $SD = 3.40$ ,  $\alpha = .87$ ). As documented by Downey and Feldman (1996), the RSQ has high test-retest reliability and predictive utility when taking account constructs to which RS is theoretically and empirically related. The descriptives of the RS scores in this sample are consistent with those of past RS research and do not differ from those obtained in studies that did not exclude participants who were not single.

**Empathic ability.** Empathic ability was measured with the Interpersonal Reactivity Index (Davis, 1983). It consists of 28 items answered on a 5-point scale (e.g., "After seeing a play or movie, I have felt as though I were one of the characters" or "I sometimes try to understand my friends better by imagining how things look from their perspective"; 1 = *does not describe me well*, 5 = *describes me well*;  $M = 3.40$ ,  $SD = .42$ ,  $\alpha = .82$ ). The IRI and RS were not significantly correlated in this sample ( $r = .11$ ,  $p = .23$ ).

**Self-esteem.** Self-esteem was measured with Rosenberg's (1965) self-esteem scale. Participants used a 6-point scale to indicate their agreement with each item (1 = *completely disagree* to 6 = *completely agree*). Scores were computed by reverse-coding the necessary items and then averaging across the 10 items to obtain an index for which higher numbers indicate higher self-esteem ( $M = 4.81$ ,  $SD = 0.90$ ,  $\alpha = .89$ ). As in past research, self-esteem and RS were negatively correlated ( $r = -.53$ ).

**Computer task.** A computer program presented the videos in random order. Each participant saw 18 muted, 8-s videos of opposite sex individuals.<sup>3</sup> Each video was followed by two questions, presented in random order, that mirrored those posed to the target: "In the video, how positive do you think were the feelings the person felt?"; "In the video, how negative do you think were the feelings the person felt?" These questions were answered using the same 9-point scale used by targets. These ratings are the **estimates** of emotion that we

<sup>3</sup> 8.5% of participants reported being gay, lesbian, or bisexual. To prevent disengagement in the Self-Relevant condition, these participants were placed in the Not Self-Relevant condition. When these participants are removed from the sample, the results reported below hold.

used as dependent variables in our analyses (Negativity  $M = 3.70$ ,  $SD = 2.09$ ; Positivity  $M = 4.24$ ,  $SD = 1.92$ ).<sup>4</sup>

## Results

### Operationalizing Bias and Tracking Accuracy

Our goal was to assess the extent to which RS or empathic ability impact the estimates made by participants through influencing either, or both, tracking accuracy and bias. Using Proc Mixed in SAS, we modeled the estimates that participants made of the targets' emotion as a function of RS, empathy, condition and the target's self-reported emotion. The model included the three-way interaction of each disposition with target emotion and condition, including all the necessary two-way interactions (Condition  $\times$  Target Negativity, Disposition  $\times$  Target Negativity, Disposition  $\times$  Condition)<sup>5</sup>. If the three-way interaction was not significant, it was removed and the model was recomputed with only the two-way interactions. Thus, the bias effects that we report emerge when accounting for tracking accuracy, and the tracking accuracy effects we report emerge controlling for bias effects. In addition, we controlled for sex as a dummy variable (0 = women and 1 = men) that was centered and entered as a continuous variable. We controlled for sex to account for the differences that may have emerged from the sex of the participants and from the evaluation of different stimuli. From these models we can look at bias and tracking accuracy separately:

1. To estimate *bias*, we looked at whether the dispositions (RS or trait empathy) predicted participants' estimates, that is, we tested if higher levels of RS or trait empathy predicted lower or higher estimates of negativity or positivity. The Condition  $\times$  Disposition interaction tested if the bias effect associated with the disposition differed significantly by condition.
2. To look at *tracking accuracy*, we looked at the relation between Target Emotion and participants' estimates as a function of the dispositions. Thus, the interaction of Target Emotion  $\times$  Disposition indicated change in tracking accuracy as a function of the disposition. The significance of three-way interaction of Condition  $\times$  Target Emotion  $\times$  Disposition tests whether tracking accuracy associated with the disposition differed by condition. In addition, the Disposition  $\times$  Target Emotion interaction can be interpreted as indicating that the same level of Target Emotion elicits different estimates from participants depending on the participants' level of the disposition, for instance their RS. Thus, this tracking accuracy index also tests the possibility that higher levels of RS could be associated with a greater (or lesser) bias toward seeing negativity in a facial expression as the level of negativity expressed increases.

This modeling approach is supported by a range of research on empathy and mind-reading in close-relationships (cf. Fletcher & Kerr, 2010; Gagné & Lydon, 2004; Kenny & Acitelli, 2001). Both bias and tracking accuracy can manifest simultaneously. An individual can have high, but not perfect, tracking accuracy. Deviation from perfect accuracy can entail systematic bias or nonsystematic or ran-

dom error. For instance, Paul, Jake, and Michael may report how negatively they feel on a Likert-type scale as 5, 6, and 7, respectively. When asked to estimate their negative mood, Mary may say 3, 4, and 5, respectively. Mary would show high tracking accuracy, a high correlation of her estimates and the "actual" criteria. But, Mary's ratings would also show her bias to systematically underestimate despite showing an ability to accurately differentiate among levels of negativity expressed by Paul, Jake, and Mike.

We report the findings for negativity first, followed by those for positivity.

### Negativity

Participants' estimates were significantly predicted by Target Negativity,  $\gamma = .18$ ,  $t(122) = 13.20$ ,  $p \leq .0001$ . This relation did not vary by whether the condition was Self-Relevant, Condition  $\times$  Target Negativity,  $F(1, 126) = .04$ ,  $p \leq .83$ . The interaction of Condition, Target Negativity, and Empathy was significant,  $\gamma = -.16$ ,  $t(122) = -2.31$ ,  $p \leq .02$ , whereas the three-way interaction involving RS was not,  $\gamma = .002$ ,  $t(122) = .21$ ,  $p \leq .84$ . Dropping the three-way interaction involving RS resulted in a model in which both the three-way interaction involving empathy and the Condition  $\times$  RS interaction were significant (see Appendix Formula 1 for the model). Table 1 gives the coefficients estimated using this model, which we use as the basis for considering the tracking accuracy and bias effects associated with RS.

**Bias.** Given the significant Condition  $\times$  RS interaction, Self-Relevant as base:  $\gamma = -.10$ ,  $t(122) = -2.04$ ,  $p \leq .05$ , we computed the equivalent of the simple slope of RS (Aiken & West, 1991) in each condition. RS was significantly related to participants' estimates of negativity only in the Self-Relevant condition, Not self-relevant:  $\gamma = .001$ ,  $t(122) = .02$ ,  $p \leq .98$ ; Self-Relevant:  $\gamma = .03$ ,  $t(122) = 2.66$ ,  $p \leq .009$ . Figure 1 illustrates the effect of Self-Relevance on the association between Target Negativity and participants' estimates of Target Negativity for participants low in RS (1  $SD$  below sample mean) and high in RS (1  $SD$  above sample mean). Relative to a person of average RS and Empathy, low RS participants of average empathy in the self-relevant condition made significant lower estimates of negativity. The estimates of low RS participants in the self-relevant condition were also lower than those of high RS people in both conditions. High RS participants' estimates did not differ significantly from those of a person of average RS and empathy in either condition.

Across levels of negativity, low and high RS people made similar estimates of negativity in the Not Self-Relevant Condition. However, relevant contrasts showed that low RS participants saw less negativity in the Self-Relevant condition than in the Not Self-Relevant condition, Self-Relevant  $\gamma = -.19$ ,  $t(122) = -2.49$ ,  $p \leq .01$ , Cohen's  $d = .26$ , but high RS participants did not show this effect, Self-Relevant  $\gamma = .03$ ,  $t(122) = .43$ ,  $p \leq .67$ , Cohen's  $d = .04$ . This pattern supports the hypothesis that low RS people perceive facial expressions as less negative when those expressions provide personally threatening in-

<sup>4</sup> RS scores were unrelated to the range or SD of the estimates made by participants ( $p \geq .30$ ).

<sup>5</sup> For all analyses, we standardized the Target Emotion and the estimates by subtracting the mean and dividing by the standard deviation of the Target Emotion (Negativity  $M = 3.83$ ,  $SD = 2.98$ ; Positivity  $M = 3.66$ ,  $SD = 2.74$ ). RS and Empathy scores were centered around their respective means.

Table 1  
Mixed Model for Participant Estimates of Target Negativity

Term	$\gamma$ estimate	SE of estimate	<i>t</i> -stat	<i>p</i>
Intercept	-.077	.038	-2.04	.04
Condition (effect of being in Not Self-Relevant Condition)	.079	.054	1.46	.15
RS	.037	.013	2.74	.007
Condition $\times$ RS	-.033	.016	-2.04	.04
Empathy	.143	.10	1.43	.16
Condition $\times$ Empathy	.097	.13	.73	.47
Target Negativity	.18	.02	9.10	.0001
Condition $\times$ Target Negativity	.008	.028	.28	.78
Target Negativity $\times$ RS	.003	.004	.76	.45
Target Negativity $\times$ Empathy	.15	.05	3.03	.003
Condition $\times$ Target Negativity $\times$ Empathy	-.16	.068	-2.31	.023
Sex (centered)	.10	.054	1.80	.074

Note. The base condition is the Self-Relevant Condition. Thus, the effect of the condition parameter is the difference between the base condition and the Not Self-Relevant condition.

formation. This bias emerges above and beyond any tracking accuracy effects of RS or of empathy.

The effect of empathy on perceived negativity did not differ significantly by condition, Condition  $\times$  Empathy:  $\gamma = .10$ ,  $t(122) = .76$ ,  $p \leq .45$ . However, across conditions, empathy significantly predicted estimating more negativity,  $\gamma = .19$ ,  $t(122) = 2.84$ ,  $p \leq .005$ .

**Tracking accuracy.** RS did not significantly impact tracking accuracy. The interaction of RS  $\times$  Target Negativity, which indexed how tracking accuracy changed as a function of RS, did not show a significant cross-condition effect,  $\gamma = .003$ ,  $t(122) = .76$ ,  $p \leq .45$ , nor did the interaction differ significantly by condition,  $p \leq .85$ .

By contrast, empathy did significantly impact tracking accuracy, but only in the self-relevant condition. The significant Condition  $\times$  Target Negativity  $\times$  Empathy interaction,  $\gamma = -.15$ ,  $t(122) = -2.21$ ,  $p \leq .03$ , indicates that the impact of Empathy on tracking accuracy varies significantly as a function of condition, so we examined the Target Negativity  $\times$  Empathy effects by condition. In the Not Self-Relevant condition, a nonsignificant Target Negativity  $\times$  Empathy interaction showed that tracking accuracy was not moderated by empathy,  $\gamma = .003$ ,  $t(122) = .07$ ,  $p \leq .94$ . In the Self-Relevant condition, a significant Target Negativity  $\times$  Empathy interaction showed that the correspondence between the Target

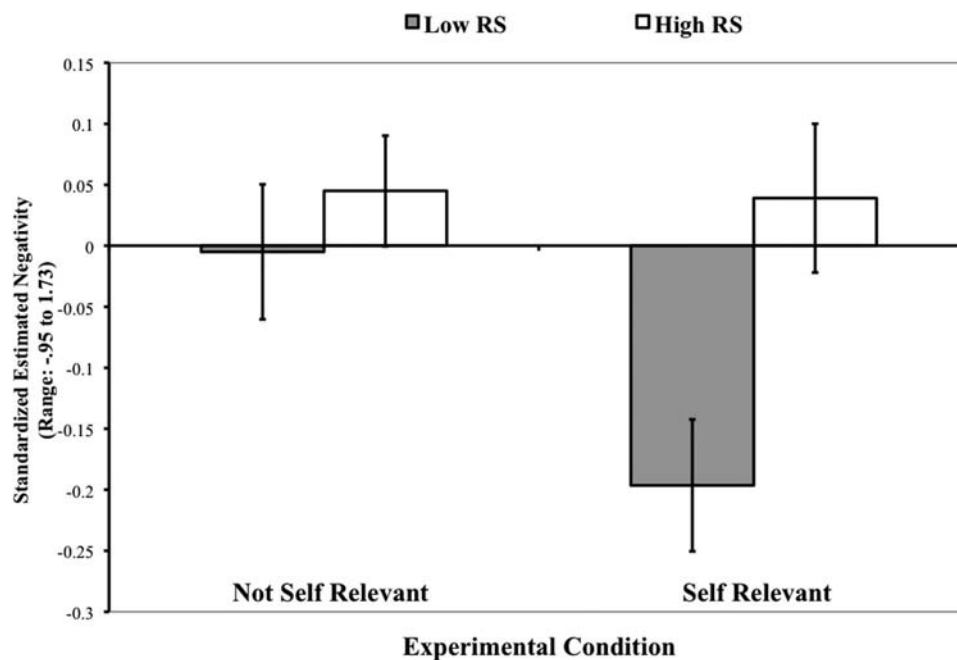


Figure 1. Estimates of Negativity Made by Participants Low and High in RS in Both Experimental Conditions, with Target Negativity at the Mean Level. Note: Low RS participants are those 1 SD below the sample mean. High RS participants are those 1 SD above the sample mean. Estimates and Target Negativity are standardized as Z-scores using the mean and SD of Target Negativity. Errors bars are standard errors of the estimates.

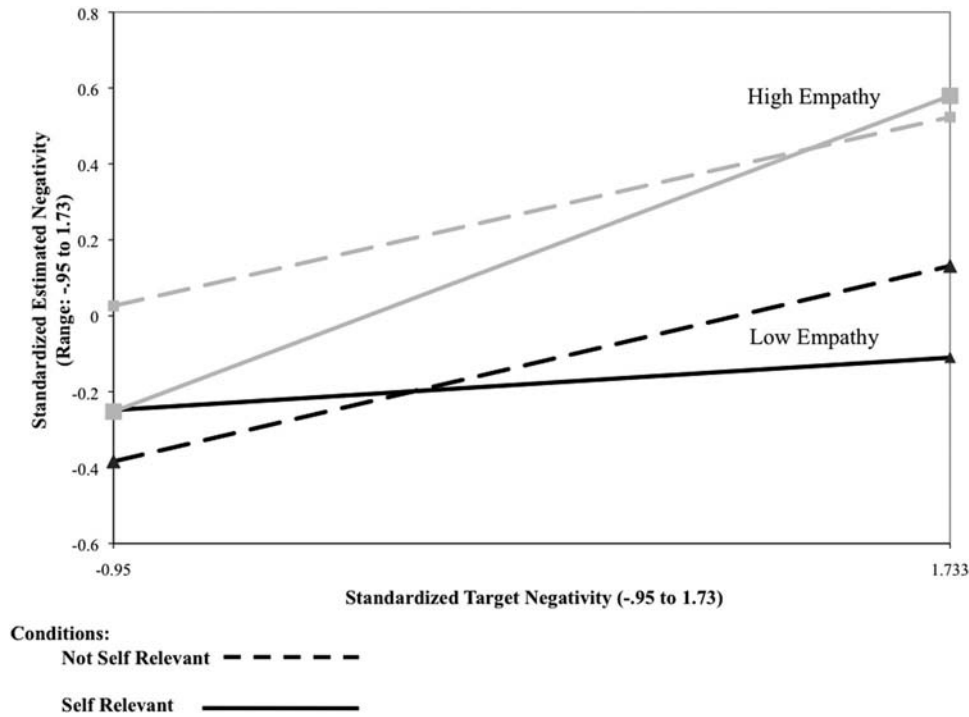


Figure 2. Estimates of Negativity Made by Participants Low and High in Empathy in Both Experimental Conditions across the Range of Possible Target Negativity Scores. Note: (a) Low Empathy participants are those 1 SD below the sample mean. High Empathy participants are those 1 SD above the sample mean. Estimates and Target Negativity are standardized as Z-scores using the mean and SD of Target Negativity. (b) Each line is the association of the actual Target Negativity (X axis) and the estimate made by participants (Y axis). (c) Dashed lines depict participants in Not Self-Relevant condition and solid lines those in the Self-Relevant condition.

Negativity and the perceivers' estimates became greater as empathy increased,  $\gamma = .15$ ,  $t(122) = 3.0$ ,  $p \leq .03$ .

Figure 2 depicts estimates of negativity as a function of Target Negativity and Condition for Participants 1 SD above (high empathy, gray lines) and below (low empathy, black lines) the sample mean in Empathy. Each line is the association of the actual Target Negativity (X axis) and the estimate made by participants (Y axis). Dashed lines depict participants in Not Self-Relevant condition and solid lines those in the Self-Relevant condition. In the Self-Relevant condition, higher Empathy predicts a stronger positive association between Target Negativity and estimated negativity, as illustrated by the two solid lines, with different slopes. By contrast, the dashed lines that depict the Not Self-Relevant condition are parallel, illustrating that Empathy does not moderate tracking accuracy in this condition. High empathy participants made, across conditions, higher estimates of negativity, consistent with the empathy bias reported above.

### Positivity

Neither the interaction of Condition  $\times$  Target Positivity  $\times$  RS (Self-Relevant as comparison,  $\gamma = .0006$ ,  $t(122) = .05$ ,  $p \leq .96$ , nor the interaction of Condition  $\times$  Target Positivity  $\times$  Empathy,  $\gamma = -.09$ ,  $t(122) = -.09$ ,  $p \leq .38$ , were significant. The two-way interactions involving RS and the main effect of RS were nonsignificant, even when the three-way interaction was dropped from the model,  $p \geq .76$ . Thus, in our final model for positivity, RS is entered as a

control. The three-way interaction involving Empathy was not significant, and neither was the two-way interaction of Condition  $\times$  Target Positivity, so they were removed. However, participants' estimates of Target Positivity were associated with actual positivity,  $\gamma = .28$ ,  $t(122) = 14.08$ ,  $p \leq .0001$ , regardless of condition,  $F(1, 122) = .03$ ,  $p \leq .85$ .

The Appendix outlines the model for positivity and Table 2 presents the parameter estimates that result from this model.

Table 2  
 Mixed Model for Participant Estimates of Target Positivity

Term	$\gamma$ Estimate	SE of Estimate	<i>t</i> -stat	<i>p</i>
Intercept				
Condition (centered)	.20	.03	7.03	.0001
RS	.004	.008	.50	.62
Empathy	-.005	.063	-.07	.95
Target Positivity	.28	.02	14.08	.0001
Target Positivity $\times$ Empathy	.12	.05	2.48	.01
Sex (centered)	-.12	.06	-2.02	.05

Note. Given the absence of significant interactions with condition, condition was centered and entered as a control. Higher numbers indicate Self-Relevance condition. On average participants made higher estimates of positivity in the Self-Relevant condition, consistent with a positive illusion.

**Bias.** None of the two- or three-way interactions with RS were significant, and there was no main effect of RS (all  $ps \geq .76$ ). Thus, RS was not associated with a systematic bias in estimating positivity. There was no significant main effect of Empathy in either the model that included the three-way interactions ( $p \leq .74$ ) or in the final model reported in Table 2.

**Tracking accuracy.** In the final model, a significant Target Positivity  $\times$  Empathy interaction indicated greater correspondence between Target Emotion and participants' estimates, regardless of bias, among people high in empathy relative to those low in empathy,  $\gamma = .12$ ,  $t(122) = 2.49$ ,  $p \leq .01$ .

### An Alternative: Self-Esteem as a Predictor

To test if self-esteem could explain the differences between low and high RS people in the self-relevant condition and between low RS participants across conditions, we modeled estimates of negativity as a function of the three-way interaction of Condition, Target Negativity, and Self-Esteem, with all the necessary second-order interactions, with sex as a control, but without empathy or RS in the models. The three-way interaction, the two-way interactions and the main effect of self-esteem did not approach significance,  $ps \geq .40$ . The models were rebuilt with RS as a control, but no significant self-esteem effects emerged,  $ps \geq .48$ .

We then tested a model in which RS, empathy, and self-esteem were entered as predictors and allowed to interact with condition and Target Negativity, controlling for sex. The Condition  $\times$  Target Negativity  $\times$  Self-Esteem interaction was not significant,  $p \leq .43$ . The interaction of Condition  $\times$  Self-Esteem was marginally significant,  $p \leq .06$ . Thus, we built a model like that in Table 1, adding self-esteem and the Condition  $\times$  Self-Esteem interaction. While the interaction of RS  $\times$  Condition remained significant,  $p \leq .007$ , and the simple slopes of RS were almost identical to those reported in Table 1, neither the interaction of Condition  $\times$  Self-Esteem nor the simple slopes of self-esteem in each condition were significant.

Finally, we rebuilt all the models with estimated positivity as a DV, but self-esteem was not significantly associated with the estimates made by participants in any model, all  $ps \geq .20$ .

### Discussion

When evaluated by potential dating partners, people who tend to confidently expect acceptance slightly, but systematically, underestimated the negativity of their prospective partners toward them relative to people who tend to anxiously expect rejection. No such difference was evident when participants believed they were estimating the feelings of online daters reacting to the biographical sketches of other potential partners. These results are consistent with neuroimaging data that suggest that low RS individuals, people who expect acceptance, engage higher-level cognitive self-regulatory systems to down-regulate their distress in response to social threat (Kross et al., 2007). The results are also consistent with Simpson et al.'s (1999) findings that securely attached individuals showed motivated inaccuracy when estimating their romantic partners' thoughts and feelings in a situation that might threaten the relationship. More broadly, these findings support functionalist perspectives on interpersonal perception and show that people's interpersonal optimism, which is likely to be rooted

partly in prior experiences of acceptance (London, Downey, Bonica, & Paltin, 2007), can shape what they perceive in ways that can foster relationship formation, for instance, by activating approach goals that promote connectedness (Murray, Derrick, Leder, & Holmes, 2008).

The finding that RS influenced estimates of negativity but not of positivity is consistent with the view that RS has a specific effect on how individuals process rejection-relevant cues. The RS system seems to be attuned singularly to cues of the feared threat, and it seems to not influence the perception of acceptance cues. Other research suggests that experiences of acceptance are not interpreted differently by low versus high RS people (cf. Ayduk et al., 1999; Ayduk et al., 2008; Romero-Canyas & Downey, 2005). This focus on cues of rejection distinguishes RS from a need to belong (Pickett et al., 2004) that has been posited as effecting the motivation to seek social cues that indicate belonging, whether those cues are positive or negative (Gardner, Pickett, & Brewer, 2000).

High RS individuals did not show a bias toward perceiving increased negativity in the Self-Relevant situation relative to the Not Self-Relevant situation. Such a bias might be expected given prior evidence that high RS people show a heightened vigilance toward rejection cues and a greater physiological response indicative of threat in the presence of those cues (Downey et al., 2004). This affirms the importance of distinguishing between low-effort, relatively automatic, selective attention that supports threat-detection from the perception of complex social information, which likely entails high cognitive effort.

### Different Biases at Different Stages of Impression-Formation

The findings of this study contribute to a growing literature on the functioning of systems that have evolved to manage social threat. The strategic bias displayed by low RS individuals in the study should be evident among individuals who expect acceptance in general, such as people high in self-esteem. However, in this study self-esteem was not associated with estimates of positivity or of negativity, nor did inclusion of self-esteem in the models change the impact of RS on participants' estimates. This may seem to contradict recent work by Cameron, Stinson, Gaetz, and Balchen (2010) showing that (a) low self-esteem individuals tend to underestimate acceptance in situations of social risk relative to high self-esteem individuals in the same situation and relative to low self-esteem individuals in less risky situations, and (b) those with high self-esteem tend to overestimate acceptance under risk compared to high self-esteem peers in less risky situations. Contradictory as they may seem, the findings of Cameron et al.'s studies and ours are potentially complimentary. Our study captured bias at an early stage of person perception, when initial impressions are formed on the basis of minimal and subtle information. Our targets never spoke on camera and were seen for only 8 seconds; thus, participants had a brief and subtle signal from which to infer the target's feelings. In Cameron et al.'s studies, the cues of acceptance and rejection were stronger than most present in our stimuli and were conveyed through various channels, including ongoing speech and body language. Perhaps when exposed to stronger, explicit signals of rejection, high and low RS people would show different biases, more consistent with those documented by Cameron et al.

Three methodological features could explain the differences between our study and Cameron et al.'s. First, in our study the relational threat was lower than in the high risk-condition in Cameron et al.'s studies; our self-relevant manipulation was more similar to the low-risk manipulation used by Cameron et al. (cf. Cameron et al., 2010, Studies 4 and 5). Our self-relevant manipulation may not have been sufficiently risky to activate the rejection-prevention goals of low self-esteem individuals. Second, rather than considering participants' response to one target, we exposed participants to 18 different social targets who were not confederates. Their self-ratings of their emotions were included in the statistical models, allowing for tests of how individual differences were associated with tracking accuracy. This allowed us to separate tracking accuracy from the bias associated with RS, and from the impact of the negativity expressed by the target, as prescribed by methodologists interested in person perception (Cronbach, 1955; Kenny & Acitelli, 2001). Finally our dependent variables cannot be characterized as each participants' self-reported assessment of how accepted they felt, the measure used by Cameron et al. in their studies. Making that global assessment and estimating the facial expression of positivity and negativity are two related processes sufficiently distinct as to be affected by different biases. Perhaps if we had asked participants at the end of our study to make a global assessment of how they were regarded by the people in the videos we would have captured a self-esteem bias or a tendency for high RS people to make a less favorable global assessment of how they were regarded by other individuals in the online dating pool.

## Empathy

Whereas RS did not affect tracking accuracy, empathic ability did. As expected, to the extent that participants were high in trait empathy there was a greater correspondence between their perceptions and the target's self report of positivity, regardless of self-relevance. For negativity, this correspondence increased significantly as trait empathy increased, but only when the situation was self-relevant. However, empathy also predicted bias, as it was positively associated with estimated negativity regardless of self-relevance. It appears that empathy has a more complex relationship with facial expressions conveying negativity than with those conveying positivity. As posited by various research groups, different situation-contingent motives can influence bias and accuracy (Fletcher & Simpson, 2000; Fletcher, Simpson, & Thomas, 2000; Gagné & Lydon, 2004). Perhaps in relationally risky, self-relevant, and social-evaluative situations, people's resources, including those that make highly empathic people more sensitive to others, are activated to direct people to monitor social cues and deploy their resources to counter or manage potential threat, increasing the likelihood of a positive social interaction. By contrast, when the negative information is not self-relevant, these empathic skills are not recruited. Given that positive information does not signal threat in most contexts, there is no need for increased sensitivity to this information when the individual is exposed to it during social evaluative situations. Nonetheless, individuals who have learned to be more empathic would, overall, show greater tracking accuracy in identifying interpersonal positivity relative to those low in empathy.

Our empathy findings using Davis' IRI scale are consistent with recent work (cf. Zaki et al., 2008), but other researchers have found no association between IRI scores and empathic accuracy (Ickes, Stinson, Bissonnette, & Garcia, 1990), the ability to accurately identify another person's emotions (Ickes, 1993). There are some significant methodological differences in our study that may account for this discrepancy. As with the recent studies by Zaki et al., our paradigm consisted of asking participants to make ratings along a continuum, a procedure that allows us to statistically model bias and tracking accuracy. In some of the earlier studies (Ickes et al., 1990), the task asked participants to state what emotions they thought the target was feeling. If the participant's response matched the target's report, this served as an indication of accuracy. Second, in our paradigm, participants are exposed only to information that is conveyed by facial expressions. The medium through which information is conveyed impacts people empathic accuracy (cf. Zaki et al., 2009). Further research combining the strengths of the different paradigms used could reveal the processes that account for the differences in the literature.

## Implications for Future Research

**Implications for research on RS.** Although in this research we did not examine the behavioral implications of downplaying self-relevant negativity for those low in RS, the threat management strategy they displayed may help explain why they are better at initiating (Crew et al., 2010) and maintaining their relationships (Downey et al., 1998) compared to high RS people. Expecting acceptance can set off a series of positive behaviors in social situations by, for instance, preventing people from trying too hard to make a positive impression (Aguilar, Downey, Krauss, Pardo, & Bolger, 2011) or giving up too easily in threatening circumstances (Downey et al., 1998). Thus, like self-enhancers (cf. Taylor et al., 2003), those who downplay negativity during social interactions can thrive socially, and navigate threatening environments. This benefit of expecting acceptance in threatening social situations is particularly well-illustrated in Rabiner and Coie's (1989) study of peer-rejected children. When such children were led to expect acceptance from peers they were about to meet, they were subsequently better accepted than peer-rejected children not led to expect acceptance.

Additionally, research on RS could focus also on the costs of being low in RS. As noted above, low RS people are more likely to initiate romantic relationships (Crew et al., 2010), but this is true of low RS people even when they are already involved in a romantic relationship. This suggests that their overconfidence may blind them to the potential harm they can cause others. Their secure belief in their acceptability may drive low RS people to persist in their pursuit of others even after those others have rejected them. Downplaying negativity and assuming acceptance may refrain low RS people from mobilizing their resources in contexts where the social risk really is high, for instance in a relationship where the partner of a low RS person is feeling unsatisfied and thinking of ending the relationship. In other domains where interpersonal factors matter, low RS people may not feel sufficiently threatened to engage in the kind of preparations that would lead to success, such as when applying for competitive jobs.

The findings of this article also have implications for research intended to aid individuals with levels of RS so high that their social functioning is severely impaired, such as individuals diagnosed with borderline personality disorder. Teaching high RS people to self-regulate during social interactions in ways that downplay interpersonal negativity may dampen the strong affective and behavioral reactions that high RS people show to cues of potential rejection, thus breaking the self-fulfilling prophecy in which rejection-sensitive individuals are sometimes trapped.

Finally, the findings of this study aid in understanding the differences between being highly rejection-sensitive and being low in global self-esteem. Self-esteem and rejection-sensitivity are negatively correlated (Downey & Feldman, 1996). However, being high in RS does not equate being low in self-esteem. RS entails more than the expectation of rejection; at its core are anxious concerns about relationships and a corresponding activation of a defensive-motivational system *singularly* focused on rejection (Downey et al., 2004). A person could, conceivably, expect rejection, but do so with equanimity, posed to manage the social pain. This person would not be high RS, but could nonetheless be low in self-esteem. Low RS people expect acceptance and experience little or no anxiety about social interactions, which should allow them to interact with others in ways that lead to acceptance, even when faced with negativity (Downey et al., 1998). Such a person is likely to be high in self-esteem, but that is not necessarily the case; they may feel confident about their interpersonal acceptability, but insecure and “unworthy” in other domains that they value (e.g., their intelligence).

Despite the absence of self-esteem effects, the findings in this study are consistent with work showing that low self-esteem people are particularly attuned to indications of social threat (Dandeneau & Baldwin, 2004; Dandeneau, Baldwin, Baccus, Sakellariopoulou, & Pruessner, 2007). High RS people in the present study seem to prefer vigilance for threat to strategic downplaying threat. High RS participants made similar estimates of negativity in the two conditions. But, in the self-relevant condition, on average, high RS participants' estimates were closer to the target's self-ratings than were the estimates made by low RS participants. This may result from their preference to assess threat accurately early in interaction. Perhaps with stronger, less subtle signals a bias toward exaggerating the level of threat would also emerge.

**Implications for research on positive illusions and self-enhancement.** The strategic bias to downplay negativity in first meetings may reflect a process analogous to those that give rise to perceptual biases within established relationships. For example, the tendency to idealize partners is known to have positive benefits for relationships (Murray, Holmes, & Griffin, 1996). The degree to which people see their romantic partners in a more positive light than their partners see themselves predicts greater relationship satisfaction. These positive illusions and the strategic threat management shown by low RS people may operate in similar ways, allowing people to form or maintain connection with others by facilitating a focus on positive aspects of nascent or established relationships. Considering how these processes play out across time in relationships can elucidate how people form and maintain healthy relationships.

Being low in RS seems to help support and promote relationships and boosts interpersonal resilience by downplaying doubts rather than creating a rosy glow through self-enhancement.

Though people generally show a tendency to believe that others think well of them (e.g., McDougall, 1933; Shrauger, 1975), they also seek and prefer information that verifies their own self-views (Swann & Ely, 1984), thus permitting them to manage their social world. Despite this, it was theorized that people with negative self-views (e.g., low in self-esteem) would be more likely to self-enhance, but data have not supported this hypothesis (Swann, Pelham, & Krull, 1989). Our study suggests that when considering specific self-views (how likable one is), people with negative self-views may actually be less likely to downplay what they see as negative about themselves (or self-enhance by exaggerating the positive). In the case of high RS people, this pattern may be the result of a need to protect the self by avoiding false positives that could lead to rejection; for high RS people, avoiding further rejection trumps self-enhancement. Conversely, for low RS people, the best defense against social difficulties is to preemptively believe that others dislike them slightly less than may be true.

## Conclusion

Our approach allowed us to capture the effect of self-relevance on bias and accuracy in interpersonal perception in a design that shares the ecological validity of the empathic accuracy design (Ickes, 2001). The results make clear the importance of distinguishing systematic bias from random inaccuracy and of a design that permits establishing whether bias reflects a lower threshold for detecting negativity, as might have been expected for those high in RS, or an apparent down-regulation of negativity as might be expected for those low in RS.

This approach may be useful in future studies that seek to map the processes whereby functional and motivational influences modify people's estimation of the emotions of others and the inferences and impressions that are formed as a result of those processes. The approach is also helpful in understanding how processes of interpersonal perception and mind-reading play out in the earliest stages of relationship-formation, behavior that has rarely been studied in depth (Fletcher & Kerr, 2010).

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## Appendix

### Formulas from the Mixed Models of Participants' Estimates of Target Emotion

#### Formula from the Mixed Models of Participants' Estimates of Target Negativity

$$\begin{aligned}
 ETN_{ijklm} = & b_0 + b_1C_{ijklm} + b_2RS_{ijklm} + b_3C \times RS_{ijklm} \\
 & + b_4TN_{ijklm} + b_5E_{ijklm} + b_6C_{ijklm} \times E_{ijklm} \\
 & + b_7C_{ijklm} \times TN_{ijklm} + b_8TN_{ijklm} \times E_{ijklm} \\
 & + b_9C_{ijklm} \times TN_{ijklm} \times E_{ijklm} + b_{10}Sex_{ijklm} + e_{ijklm} \quad (1)
 \end{aligned}$$

ETN is the estimate of negativity made by a participant of mean levels of RS ( $i$ ) and Empathy ( $k$ ) after observing a target of average negativity ( $j$ ) in the Self-Relevant condition ( $l$ ) averaging across the sexes ( $m$ ).  $C$  is the condition dummy code, so that  $b_1$  is the mean difference between the two conditions for a participant of average RS and Empathy looking at a target of mean negativity.  $RS$  is the rejection-sensitivity score and  $b_2$  is the parameter that captures the bias associated with RS in the Self-Relevant condition for a participant of average Empathy looking at a target of average negativity. Thus,  $b_3$  is the parameter testing the difference of the bias associated with RS in the Not Self-Relevant condition versus the Self-Relevant conditions for a participant of average Empathy looking at a target of average negativity.  $TN$  is the Target Negativity, so that  $b_4$  is the index of tracking accuracy for a participant of average RS and Empathy looking at a target of average negativity in the Self-Relevant condition.  $E$  is Empathy, so that  $b_5$  is the coefficient of bias associated with Empathy for a participant of average level of RS in the Self-Relevant condition looking at a target of average negativity. Thus,  $b_6$  serves as a test of the statistical significance of the difference between the biases associated with Empathy in the Not Self-Relevant condition versus the Self-Relevant condition for a participant of average level of RS. Similarly, the slope  $b_7$  is a test of the condition difference in tracking accuracy for a participant of average levels of RS and Empathy who is estimating the emotions of a target of average negativity. The slope  $b_8$  is the test of how tracking accuracy is moderated by Empathy for a participant of average levels of RS looking at a target of average negativity in the Self-Relevant condition. The slope  $b_9$  is a test of the condition effects on  $b_8$ , that is, it can serve as a test of whether the effect of Empathy on tracking accuracy depends on condition.  $Sex$  is the sex of the

participant, dummy coded, but centered so as to control for the main effect of sex in generating the parameter estimates. Finally  $e$ , is the error term associated with the estimate made by a participant of average levels of RS and Empathy when estimating the negativity of a target of average negativity in the Self-Relevant condition.

#### Formula from the Mixed Models of Participants' Estimates of Target Positivity

$$\begin{aligned}
 ETP_{ijkl} = & b_0 + b_1C_{ijkl} + b_2RS_{ijkl} + b_3E_{ijkl} + b_4TP_{ijkl} \\
 & + b_5E \times TP_{ijkl} + b_6Sex_{ijkl} + e_{ijkl} \quad (2)
 \end{aligned}$$

$ETP$  is the estimate of positivity made by a participant of mean levels of RS ( $i$ ) and Empathy ( $k$ ) after observing a target of average negativity ( $j$ ) averaging across conditions ( $l$ ) and sexes ( $m$ ).  $C$  is the condition dummy code, so that  $b_1$  is the mean difference between the two conditions for a participant of average RS and Empathy looking at a target of mean positivity.  $RS$  is the rejection-sensitivity score and  $b_2$  is the parameter effect representing the bias associated with RS across conditions when a participant of average levels of Empathy is looking at a target of average levels of positivity.  $E$  is Empathy, and  $b_3$  is the bias associated with Empathy across conditions when a participant of average level of RS is looking at a target of average positivity.  $TP$  is the Target Positivity, so that  $b_4$  is the index of tracking accuracy for a participant of average RS and Empathy looking at a target of average positivity across conditions. Thus,  $b_5$  is the coefficient that tests the degree to which tracking accuracy is moderated by Empathy across conditions for a participant of average level of RS looking at a target of average level of positivity.  $Sex$  is the sex of the participant, dummy coded, but centered. Thus,  $b_6$  is the sex difference that emerges, on average, between men and women, when all other variables are at their means. Finally  $e$ , is the error term associated with the estimate made by a participant of average levels of RS and Empathy when estimating the negativity of a target of average positivity across conditions.

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