

Self-Esteem and Affect as Information

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This research tests whether people with high self-esteem are more informed by their emotions than are people with low self-esteem. In Study 1, participants listened to a series of disturbing baby cries, rated how much distress these cries conveyed, and reported their own emotional reactions to the cries. As predicted, the relation between participants' emotional reactions and their cry ratings was strongest at higher levels of self-esteem. In Study 2, self-esteem again determined how strongly participants' own emotional reactions influenced their baby cry ratings, even though esteem was measured weeks before the experiment and even after controlling for social desirability. Study 3 manipulated self-regard and showed that the correlation between participants' emotional reactions and their cry ratings was strong for high-regard participants, moderate for control participants, and weak for low-regard participants. These results suggest that self-esteem serves to validate the informational value of feelings.

Keywords: emotions; self-esteem; affect as information; judgment

Emotions are increasingly recognized as adaptively informing behavior. Herbert Simon (1967) argued that emotions function like an internal early-warning system, directing attention toward important changes in the environment. Similarly, George Mandler (1975) posited that emotions serve as discrepancy detectors, causing us to examine circumstances that contradict expectations. Recent advances in neuropsychology indicate that the speed and urgency of affect permits more rapid response to challenges than does more elaborate deliberation (Damasio, 1994).

This approach to affect as enhancing purposeful action has gathered increased currency. Recent research shows that emotions facilitate flexible planning, creative thinking, and psychological and physical health (Salovey & Mayer, 1990); communication (Booth-Butterfield & Booth-Butterfield, 1990); successful social integration (Denham & Kochanoff, 2002); and risk-assessment (Parrott, 2002). Emotions appear to enhance social

judgment in areas ranging from understanding others' feeling states (Elfenbein, Marsh, & Ambady, 2002) to assessing the adequacy of one's own coping resources (Morris, 1992). Decision making under uncertainty and under tight time constraints is aided by emotional input (Damasio, 1994) and, literally, by "gut feelings" (Gershon, 1998). People often gain important insight into major events in their lives, and regain a sense of meaning following trauma, by exploring their emotional responses to these events (Harber & Pennebaker, 1992). In sum, there is increasing and wide-ranging evidence that people use their emotions to guide their judgment and shape their behavior.

Affect as Internal Persuasion

How do people make use of their emotions? The "affect-as-information" approach (Clore, Gasper, & Garvin, 2001; Schwarz & Clore, 1996) provides a straightforward and well-validated answer to this question. This model suggests that emotions act as persuasive messages from the self to the self, urging people to regard the things they encounter as good or bad (Clore & Colcombe, 2003). These affective signals indicate when significant events occur, what attitude to take toward them, and how urgent is the need to respond to them (Gohm & Clore, 2002).

Although the affect-as-information studies often involve mood, the approach is not limited to mood but in

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fact applies to any affective state, including discrete emotions (Clore, Wyer, et al., 2001). In fact, the original "mood as information" designation was changed to the more inclusive "affect as information" for just this reason. Furthermore, although the classic Schwarz and Clore (1983) "mood as information" study used a misattribution design to demonstrate the informational role of affect, the intent was not to suggest that affective cues are typically erroneous. Rather, the affect-as-information approach holds that feeling states generally supply valid information and are therefore adaptive (Clore, Wyer, et al., 2001).

There are important constraints to the affect-as-information model; people tend to consult their emotions when dealing with ambiguous rather than clearly defined events, when response options are not overly directed by scripts or motives, and when personal relevance is low (Forgas & Vargas); when moderate (as opposed to minimal or intense) thought is required (Albarracín & Kumkale, 2003); and when feelings are perceived as a response to the object of evaluation rather than to extraneous sources (Schwarz & Clore, 1996). However, within these bounds, people use their emotions to evaluate things and events (Gohm & Clore, 2002).

Who uses emotions as information? These constraints on affect as information can be largely regarded as situational. However, there may also be "person constraints" such that some people draw on emotions more than do others. For example, the degree to which people use affect as information is associated with attention to one's own emotions (Gasper & Clore, 2000) and with emotional intelligence generally (Gohm & Clore, 2002). People who most often use their emotions as information value their own emotions, experience their emotions as intense, and are good at identifying their emotions. For example, firefighters who can clearly identify their own emotions handle crises better than do their more emotionally obtuse counterparts (Gohm, Baumann, & Sniezek, 2001).

The reason why people differ in their ability to use emotions as information is not well understood. However, Gohm and Clore (2002) provide an intriguing clue to this question. They have identified a subset of people who have intense emotions but demonstrate only average skills at attending to their own emotions and have difficulty clearly identifying their emotions. According to Gohm and Clore, people who exhibit this "overwhelmed" profile "may be thought of as a group *who do not believe in the wisdom of feelings*" (p. 98, italics added). This raises an important, and arguably crucial, question: What determines whether people regard their own emotions as "wise"?

The Self as a Credible Persuader

People face an epistemological challenge when using their emotions as information. Unlike matters of fact or common knowledge, emotions have no ultimately confirming referents.¹ For example, if I recall hearing that the Brooklyn Bridge is one of the premier technological feats of the 19th century, I can consult an encyclopedia to establish that this is so. However, if I sense that the person trying to sell me the bridge is untrustworthy I may have, at that moment, only my own feelings as evidence. Although I can identify the conditions that give rise to my feelings (e.g., the person's twitching smile or sweaty brow), I cannot be assured that my emotions, themselves, are appropriate in kind or degree to these conditions (e.g., maybe I am overreacting, or projecting, or avoiding success). For this reason, using emotions as information may be something of an act of faith. But faith in what?

Classic work on persuasion (e.g., Hovland, 1954), and more recent research on this topic (Petty & Wegener, 1998), indicate that people attend more closely to, and are more fully swayed by, messages delivered by high-credibility sources. Source credibility is determined by such attributes as moral rectitude, intelligence, competence, attractiveness, stability, certainty, and likeability (Hovland, 1954; Petty & Wegener, 1998). These are among the same attributes that form the basis of self-esteem (Baumeister, 1998). If emotions are persuasive messages from the self to the self, are they also subject to the same "source credibility" criteria as are other persuasive messages? That is, are people more likely to use their emotions as information if they have high self-esteem but less likely to do so if they have low self-esteem? There is circumstantial evidence suggesting that they do.

Emotional intelligence is positively related to self-esteem. Emotional intelligence involves clarity about, and attention to, one's emotions as well as the ability to manage emotions (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). If people with high self-esteem more frequently use their own emotions as information they should (due to practice and reinforcement) show greater emotion-related skills than do low-esteem people. It appears that they do. Self-esteem has been positively and repeatedly related to emotional intelligence (Ciarrochi, Chan, & Bajgar, 2001; Schutte, Malouff, Simunek, McKenley, & Hollander, 2002).

Self-esteem and emotional ambivalence. Emotional ambivalence refers to uncertainty as to whether one's own emotions justify behavior (King & Emmons, 1990). King and Emmons (1990) report that self-esteem is moderately correlated to emotional ambivalence, such that people who hold themselves in high regard are more

confident about acting on their own feelings than are people with low self-regard.

Self-esteem is negatively related to self-doubt. If emotions inform judgment, and self-esteem promotes trust in one's own emotions, then high-esteem people should display less self-doubt than do low-self-esteem people. It appears that they do. The negative relation between self-esteem and self-doubt is moderate to high (r s ranging from $-.44$ to $-.68$), indicating that people with high self-esteem experience less self-doubt than do their low-esteem counterparts (Hermann, Leonardelli, & Arkin, 2002; Oleson, Poehlmann, Yost, Lynch, & Arkin, 2000).

Self-esteem is positively related to autonomy. If self-esteem promotes trust in one's own emotions, then high-esteem people should be less susceptible to outside influence than low-esteem people. In fact, people with high self-esteem are less susceptible to influence attempts by others (Janis, 1954), are less affected by feedback from others (Brockner, 1984), and are less reactive to self-relevant external cues (Campbell & Lavellee, 1993) than are people with low self-esteem. Brockner has coined the term "low self-esteem plasticity" to capture the malleability that characterizes low-esteem people.

None of these arguments are themselves sufficient evidence that self-esteem moderates the use of emotions as information. Each is subject to alternative explanations (e.g., greater fidelity to one's own emotions might boost self-esteem and more frequent exercise of autonomy might simultaneously enhance both self-esteem and regard for one's own emotions). Collectively, however, these arguments and the research that support them provide a strong case for testing whether self-esteem determines the use of emotions as information. Doing so is the purpose of the present research.

Testing Whether Self-Esteem Moderates Affect as Information

Clore and Colcombe (2003) write, "the information from feelings is convincing because it is experienced as arising spontaneously from within [ourselves]" (p. 10), and add, "We presumably find ourselves to be particularly credible sources." These statements imply that the credibility of emotions rides on the credibility of the self. The three studies comprising the present research were designed to confirm this implication and test whether self-esteem moderates the use of affect as information. Studies 1 and 2 related differences in trait self-esteem to the use of affect as information. Study 3 experimentally manipulated self-regard prior to a judgment task. In all three studies, people with high self-esteem (or self-regard) were predicted to show stronger associations between their own affective reactions to, and their judgments of, emotionally arousing stimuli than are people

with low self-esteem. The studies also investigated whether general mood shifts (Study 1) and social desirability motives (Study 2) confound the predictions of this research.

Infant cries as targets of evaluation. Infant distress cries were used in all three experiments as both the source of emotional arousal and as the target of evaluation. Infant cries have properties well suited to research on affect as information. According to the affect-as-information approach, people consult their emotions in reference to specific, discrete events that are clearly the source of their emotional reactions but are not directly related to the self (Gasper & Clore, 1998). Baby cries meet these conditions. Baby cries tend to evoke strong reactions in most people, and people appear to use their own emotional reactions to gauge the distress baby cries convey (Bachorowski & Owren, 2002). Baby cries are also ambiguous in meaning and thereby provide the interpretive space within which affect can shape judgment (cf. Forgas & Vargas, 2000). Last, there are distinct individual differences in sensitivity to the emotional component of sound (Bachorowski & Owren, 2002), which provides reason to search for moderation.

STUDY 1

Participants listened to a set of 12 baby cries, of varying intensities, and rated how much distress babies conveyed through these cries. Participants then completed a questionnaire packet that sampled their emotional reactions to the cries, their self-esteem, and their current mood states. Cry ratings and emotional reactions were expected to be strongly related when esteem was high and weakly related when esteem was low.

Method

PARTICIPANTS

Sixty female undergraduates participated in this study for psychology course credit. Participants were run individually in 30-min sessions.

PROCEDURE

Participants were brought to an experiment room and informed that the study examined differences in how people interpret social signals. They were given a Walkman-style tape player with headphones and told that the information needed to complete the study would be supplied through that device. They also were given a survey packet containing a cry-rating form, a self-esteem measure, a mood measure, and a set of background questions. The participants completed most of the study on their own, with no experimenter contact other than the initial instructions and the debriefing. There are two distinct advantages to this format. Supply-

ing most instructions via tape player greatly increases the consistency with which these instructions are presented (Aronson, Ellsworth, Carlsmith, & Gonzales, 1990). In addition, because participants completed the study in solitude, their feelings of sympathetic distress arising from experimental stimuli could not be allayed or otherwise affected by interactions with experimenters.

Cry rating. Participants activated the tape player after the experimenter left the room. The tape presented a series of 12 baby cries sampled from male infants undergoing surgical circumcision. Each cry sample lasted about 12 s and was followed by a 5-s pause during which time participants rated the distress conveyed by the cry on a 7-point Likert scale with response options ranging from 1 = *not at all distressed* to 7 = *extremely distressed*. The cries varied in intensity from mild whimpers to shrill, staccato squalls and were presented in a mixed order.²

Before the cry samples were delivered, the male narrator on the tape informed participants of the nature and source of the baby cries and explained in detail the surgical procedures that the babies underwent. This was a fairly graphic depiction of the procedure, emphasizing that it was being conducted without anesthesia. This information was provided to heighten participants' own levels of empathic distress. In addition, informing participants that the cries arose from a surgical procedure would likely deter participants from attributing the babies' distress to the babies' temperament (e.g., "an overly fussy baby"). Such dispositional attributions might reduce participants' feelings of empathic distress (cf. Pulliam, 1993) and thereby diminish the affect/judgment connection that is central to this study.

Participants' emotional reactions to the baby cries. After the final cry sample was delivered and rated, the narrator on the tape directed the participant to proceed to the second page of the *Cry Rating Sheet*. This page contained a single item that asked participants, "To what degree did the baby cries upset you?" followed by a 5-point Likert scale with responses ranging from *not at all* to *a great degree*.

Participant esteem and demographics. Instructions on the *Cry Rating Sheet* directed participants to the *Background Survey*. The *Background Survey* included the Rosenberg Self-Esteem Scale (Rosenberg, 1965), which is a widely used 10-item measure of global self-esteem with established validity (Gray-Little, Williams, & Hancock, 1997). The *Background Survey* also included a mood measure in which participants rated their current levels of happiness, sadness, anger, and fear on 5-point Likert scales. Mood was measured to help distinguish discrete affective reactions to the cries from more global mood states that may co-occur with self-esteem (cf. Watson & Clark, 1984) as well as mood shifts arising from exposure to the

TABLE 1: Pearson Correlations Between Variables, Study 1 (N=60)

Variable	1	2	3	4
1. Cry ratings	—	.47**	.10	.02
2. Reactions to cries		—	-.26*	.26*
3. Self-esteem			—	-.25*
4. Negative mood				—

* $p < .05$. ** $p < .01$.

cries. After completing the *Background Survey*, participants were fully debriefed, thanked for their contribution, and dismissed.

Results and Discussion

PRELIMINARY ANALYSES

Data reduction. The 12 cry ratings were summed and averaged to create a single score ($\alpha = .80$), with higher scores representing greater perceived distress. The four mood items were summed and averaged into a single mood index (with happiness reverse-coded), $\alpha = .82$, and the 10 self-esteem items were summed and averaged into a single scale score, $\alpha = .91$.

Manipulation checks. The main hypothesis of this study was itself predicted on two subsidiary outcomes: that hearing cries from babies undergoing surgical circumcision would create disturbing emotions and that these emotions would be positively related to cry ratings. Both requirements were confirmed. On average, participants reported their own levels of cry-related upset at $M = 3.25$, $SD = 1.18$, or as "moderate." Participants' emotional reactions to the cries were positively related to the distress that they inferred from the cries, $r(60) = .47$, $p < .01$ (see Table 1 for correlations between variables). Thus, in keeping with the affect-as-information framework, participants' own emotional reactions appear to have informed their cry ratings.

Main analyses. The main hypothesis of this experiment was that self-esteem would moderate the relationship between emotional reactions to the baby cries and perception of the cries. The correspondence between emotional reactions and cry ratings was predicted to become stronger at higher levels of esteem and weaker at lower levels of esteem. This hypothesis was tested in a hierarchical linear regression model. Step 1 tested the effect of mood, Step 2 tested the effects of self-esteem and emotional reactions, and Step 3 tested the Upset \times Esteem interaction. Results confirmed the predicted Upset \times Esteem interaction, $\Delta R^2 = .09$, $F(4, 55) = 7.89$, $p < .001$ (see Table 2), indicating that self-esteem moderated the influence of emotional reactions to the cries on cry ratings. Moreover, by accounting for general mood

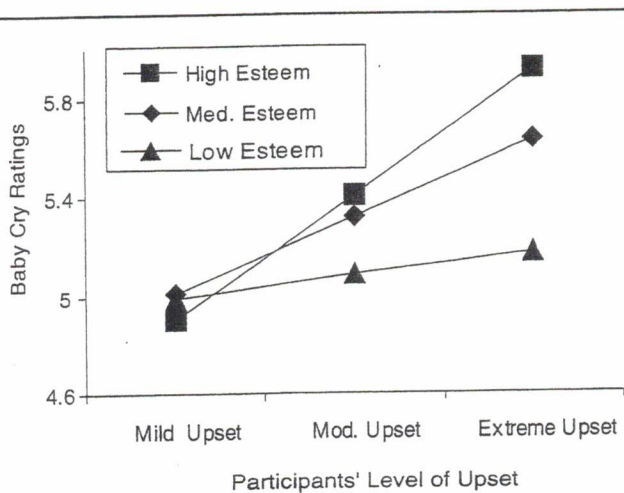


Figure 1 Relation between participants' own emotional reactions to baby cries ("upset") and their ratings of the distress conveyed by these cries as a function of having high, moderate, or low self-esteem, Study 1.

NOTE: Mild upset = 1 SD below upset mean, moderate upset = upset mean, extreme upset = 1 SD above the mean.

effects, this analysis shows that the $Affect \times Esteem$ interaction derives from discrete reactions to the cries themselves and not from co-occurring mood states or from mood shifts that the cries may have incidentally induced.

Analyses of simple slopes (Aiken & West, 1991) showed a positive relation between participants' own distress and their cry ratings for high-esteem participants, $b = .41$, $t = 5.12$, $p < .001$, and for average-esteem participants, $b = .25$, $t = 4.72$, $p < .001$. However, for low-esteem participants, feelings generated by hearing the cries were unrelated to cry ratings, $b = .10$, $t = 1.18$, $p = .25$ (see Figure 1).

Self-esteem main effect. The full regression model indicates that after accounting for the $Esteem \times Upset$ interaction, self-esteem was negatively related to cry ratings such that people with high esteem rated the cries as conveying less distress (see Table 2). Although this effect was unanticipated, it is consistent with current work on self-esteem as a bulwark against daily stresses and threats (Greenberg et al., 1991; Reed & Aspinwall, 1998). In sum, Study 1 confirmed that self-esteem moderates the influence of affect on judgment. Furthermore, this effect was not due to mood-related artifacts.

STUDY 2

Study 1 confirmed that self-esteem moderates the influence of affect on judgment. However, Study 1 did not rule out the possibility that self-esteem scores may have themselves been influenced by exposure to the baby cries. Participants who reacted more strongly to the cries also reported more negative moods, and negative

TABLE 2: Summary of Hierarchical Regression Analysis Testing the Interactive Effect of Self-Esteem and Emotional Reaction on Judgments of Baby Cries, Study 1 ($N = 60$)

Variable	B	SE B	β
Step 1			
Mood	.001	.08	.002
Step 2			
Mood	-.05	.07	-.08
Emotional reaction	.27	.06	.55**
Self-esteem	.15	.08	.22*
Step 3			
Mood	-.07	.07	-.123
Emotional reaction	-.53	.30	-1.09
Self-esteem	-.55	.27	-.79*
Reaction \times Esteem	.20	.07	1.72**

NOTE: $R^2 = .001$ for Model 1; $\Delta R^2 = .28$ for Model 2 ($p < .001$); $\Delta R^2 = .09$ for Model 3 ($p < .01$).

* $p < .05$. ** $p < .01$.

moods predict lowered self-esteem (Levine, Wyer, & Schwarz, 1994). If self-esteem is itself altered by emotionally arousing events, then the moderating effect of self-esteem on affect-based judgment becomes less clear. Study 2 was designed to rule out the possibility that negative emotions induced by the baby cries depressed self-esteem. This was done by measuring self-esteem several weeks before the experiment.

Another issue arising from Study 1 concerned the manner in which participants' levels of upset was assessed. In Study 1, "upset" was measured using a single item that read, "How upset did the baby cries make you feel, overall?" Although this is a straightforward and face-valid item, it may be subject to interpretation. For example, some participants may consider the images that the cries evoked and others may assess their own physical reactions to the cries. To address this issue of interpretation, a set of six items were introduced that assessed upset in terms of specific mental, physical, and behavioral reactions. The composite score on this more comprehensive set of items constituted the new measure of emotional reaction to the baby cries.

A third concern regarding Study 1 results was whether they were confounded by social desirability. For example, low-esteem participants may not want to appear either insensitive or hypersensitive to infant cries and might therefore attempt to rate cries based on assumed norms (for example) rather than on their own internal, affective reactions. Thus, even if low-esteem people were using their feelings to gauge the cries, they may have suppressed these affect-informed judgments due to impression management. Social desirability was therefore measured to address this confound.

If self-esteem uniquely moderates the affect/judgment relationship, then neither the timing of self-esteem mea-

surement, the manner in which upset is measured, nor social desirability should explain Study 1 results. Study 2 tested whether this is so.

Method

PARTICIPANTS

Fifty-seven female undergraduates participated in this study for psychology course credit. Participants were run individually in 30-min sessions.

PROCEDURE

This study followed all the procedures described in Study 1, with the following exceptions. First, all participants completed the Rosenberg (1965) self-esteem inventory as part of a mass testing conducted several weeks prior to individual experiment sessions. Participants were not told that this measure was related to the cry rating study and an instructor unaffiliated with the study conducted the mass testing. Pretesting esteem ensured that responses would not be affected by the baby cry-rating task.

The second major change from Study 1 was the manner in which participants' own upset upon hearing cries was assessed. Instead of the single item used in Study 1, a set of six specific items was introduced. These included the presence of disturbing images, efforts to block out the cries, physical reactions (i.e., sweaty palms, upset stomach), likelihood of ruminating about the cries, efforts to avoid being bothered by the cries, and efforts to suppress thinking about the cries. The composite score on these six upset items constituted the new upset measure.

Finally, the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1988) was included in the background survey administered after cry ratings were collected. The BIDR measures both self-deceptive biases as well as conscious impression management efforts. Other than these changes, all procedures in Study 2 were identical to those employed in Study 1.

Results and Discussion

PRELIMINARY ANALYSES

Data reduction. The 12 cry ratings were again summed and averaged to create a single score, $\alpha = .81$. The six items comprising emotional reaction to the baby cries were summed into a single composite measure of upset, $\alpha = .85$. This composite score was used in computing the Esteem \times Upset interaction term. The 10 self-esteem items were summed and averaged into a composite score, $\alpha = .84$.

Main analyses. The main hypothesis of this experiment was that self-esteem would moderate the influence of emotional reactions on judgment, as was shown in

TABLE 3: Pearson Correlations Between Variables, Study 2 ($N = 57$)

Variable	1	2	3	4
1. Cry ratings	—	.42**	.06	.22
2. Reactions to cries		—	.06	.16
3. Self-esteem			—	.35**
4. BIDR				—

NOTE: BIDR = Balanced Inventory of Desirable Responding.
* $p < .05$. ** $p < .01$.

TABLE 4: Summary of Hierarchical Regression Analysis Testing the Interactive Effect of Self-Esteem and Emotional Reaction on Judgments of Baby Cries, Study 2 ($N = 57$)

Variable	B	SE B	β
Step 1			
Social desirability (BIDR)	.01	.01	.10
Step 2			
Social desirability (BIDR)	-.01	.01	-.03
Emotional reaction	.27	.08	.42**
Self-esteem	.02	.12	.03
Step 3			
Social desirability (BIDR)	-.01	.01	.05
Emotional reaction	-.81	.52	-1.24
Self-esteem	-.76	.39	-.85
Reaction \times Esteem	.26	.12	1.93*

NOTE: BIDR = Balanced Inventory of Desirable Responding. $R^2 = .01$ for Model 1; $\Delta R^2 = .17$ for Model 2 ($p < .01$); $\Delta R^2 = .07$ for Model 3 ($p < .04$).

* $p < .05$. ** $p < .01$.

Study 1, even when esteem was measured prior to the rest of the study, when upset was more concretely defined, and when social desirability influences were controlled. This hypothesis was tested in a hierarchical linear regression model. Step 1 tested social desirability, Step 2 tested emotional reactions to the cries and self-esteem, and Step 3 tested the Emotional Reactions \times Self-Esteem interaction (see Table 3 for correlations between variables). Results confirmed the predicted Upset \times Esteem interaction, $\Delta R^2 = .07$, $F(4, 52) = 4.23$, $p < .005$ (see Table 4), indicating again that self-esteem moderated the relation between emotional reactions to the cries and how the cries were perceived.

Analyses of simple slopes again showed that the relation between participants' emotional reactions and their cry ratings became stronger at higher levels of self-esteem (see Figure 2). For "high-esteem" participants and for average-esteem participants, emotional reactions to the baby cries predicted cry ratings, $b = .31$, $t = 4.34$, $p < .001$ (high esteem); $b = .21$, $t = 3.84$, $p < .001$ (average esteem). However, for low-esteem participants, the feelings generated by hearing the cries were unrelated to cry ratings, $b = .11$, $t = 1.26$, $p = .22$.

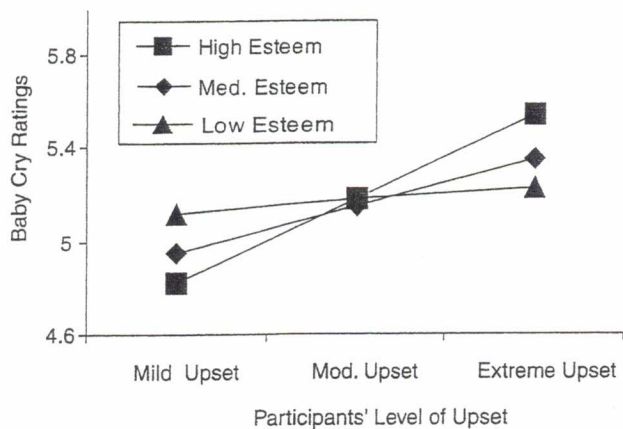


Figure 2 Relation between participants' own emotional reactions to baby cries ("upset") and their ratings of the distress conveyed by these cries as a function of having high, moderate, or low self-esteem, Study 2.

NOTE: Mild upset = 1 SD below upset mean, moderate upset = upset mean, extreme upset = 1 SD above the mean.

Study 2 replicated Study 1 and provided further evidence that self-esteem moderates the association between affective states and social judgments. Study 2 results also showed that this effect is not an artifact of when esteem is measured, and it is not explained by social desirability. In addition, the moderating effect of esteem on the affect/judgment relation was demonstrated even when affect (i.e., upset upon hearing the baby cries) was more concretely defined.

Self-esteem main effect. Self-esteem was marginally predictive of cry ratings, but only in the full regression model, $p < .06$ (see Table 4). This replicates the main effect for esteem found in Study 1 and suggests that the underlying relation between self-esteem and evaluations of disturbing stimuli is reliable.

STUDY 3

The central hypothesis in this research is that self-esteem determines the degree to which people use their emotions as information. Studies 1 and 2 provide data consistent with this prediction, but results from those studies are correlational and therefore subject to alternate interpretations. For example, the causal path may in fact be reversed, such that people who habitually consult their emotions garner life benefits (e.g., more satisfactory choices and more accurate judgments) that translate into higher esteem. Or, some unidentified third variable may simultaneously affect self-esteem and the propensity to use affect as information.

One way to test whether esteem promotes the use of emotions as information is to experimentally manipulate feelings of self-regard prior to measuring the relation between affect and judgment. If people induced to feel good about themselves show a stronger link between their emotional reactions and their judgments than do people induced to feel badly about themselves, then the contribution of self-regard to affect as information would be more clearly established. Although trait self-esteem is resistant to experimental manipulation (Brown & Marshall, 2001), more transitory feelings of self-regard are amenable to laboratory procedures (Reed & Aspinwall, 1998; Steele, 1988). The present study predicts that elevating people's self-worth will lead them to make judgments reflecting their emotional reactions, whereas depressing their self-worth will weaken the link between their judgments and emotions.

Method

OVERVIEW

Participants first recalled a time when they had greatly helped someone important in their lives (enhanced self-worth), glaringly failed to help someone important in their lives (decreased self-worth), or completed a mundane household chore (unchanged self-worth).³ These self-worth manipulations simultaneously addressed both the moral goodness as well as the competence aspects of self-worth. Participants then heard and rated the sequence of disturbing baby cries presented in Studies 1 and 2. The affect/judgment link was predicted to be strongest among participants in the enhanced self-worth condition, weakest among participants in the decreased self-worth condition, and at an intermediate level among participants in the control condition.

PARTICIPANTS

Forty-two female undergraduates participated in this study for psychology course credit. Participants were run individually in 30-minute sessions.

PROCEDURE

Participants were brought into an experiment room, provided a consent form, and informed that the study involved the relationship between mental imagery and listening. They were given a Walkman-style tape player, instructed in its use, and then told that the remainder of the study would be conducted through instructions delivered on the tape. After the experimenter left the room, the participants activated the tape player. A male narrator on the tape guided the participants through the two main phases of this study: a mental imagery/self-worth induction and the baby cry-rating task.

Mental imagery/self-worth induction. The tape first described the study as an investigation of mental

imagery and listening. Participants were then told that they would initially complete a mental imagery task involving a scene from their own lives and then complete the listening task. Before being introduced to their respective imaging topics, participants followed a 60-s relaxation induction to help them better engage in the subsequent imagery task. In each imaging condition, participants were given a topic to recall and then walked through five imaging probes. Each probe involved a brief instruction followed by a 30-s interval during which participants completed the instruction.

Enhanced self-worth. Enhanced self-worth participants recalled an actual time when they provided substantial help to someone of great importance to them. Their five imaging probes included (a) thinking in detail about the person they helped and how they feel about this person; (b) recalling the situation in which this person needed help; (c) recalling their own actions on this person's behalf; (d) recalling how their actions made this person feel about his or her problem, about himself or herself, and about the participant; and (e) reflecting on how they, the participants, feel about themselves in regard to this situation and focusing on the scenes that made them feel best about themselves.

Reduced self-worth. Reduced self-worth participants recalled a time where they failed to help someone of great importance in their lives or betrayed that person's trust. The five imaging probes in this condition included (a) thinking about the person they failed to help and how they feel about this person; (b) recalling the situation in which this person needed help; (c) recalling how they, the participants, failed to help this person or made this person's situation worse; (d) recalling how their own actions or inaction made this person feel about his or her own situation, about himself or herself, and about the participant; and (f) reflecting on how they, the participants, feel about themselves in regard to this situation and focusing on the scenes that made them feel worst about themselves.

Control participants. Participants in the control/self-worth unchanged condition recalled washing their laundry. The five probes in this condition included (a) recalling where they do their laundry, (b) thinking about the steps involved in the wash phase, (c) thinking about the steps involved in the drying phase, (d) thinking about folding laundry, and (e) considering thoughts and feelings about doing laundry.

Cry-rating task. After the imaging/self-worth induction ended, the narrator on the tape introduced the baby cries and the cry-rating task. These instructions were identical to those used in Studies 1 and 2 and included the same set of 12 cries and the same infor-

mation about the origin of these cries. After rating the cries, participants completed the six-item emotional-reactions scale developed in Study 2 and the background survey.

Background survey. The background survey included a set of three questions designed to gauge the effect of the self-worth manipulation. Two items assessed whether the imaging task made participants feel good about themselves or bad about themselves. An additional item, which gauged the intensity of the self-worth manipulation, asked whether participants continued to be affected by the imaging task. Responses consisted of Likert scales ranging from 1 (*not at all*) to 5 (*to a great degree*). Additional items in the background survey included the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and the mood measure used in Study 1. After completing the background survey, participants were debriefed, thanked for their contribution, and dismissed.

Results and Discussion

PRELIMINARY ANALYSES

Data reduction. The 12 cry ratings were summed and averaged to create a single score ($\alpha = .79$), with higher scores representing greater perceived distress. The four negative mood items (sadness, fear, anger, and happiness [reverse-coded]) were summed into a composite negative mood index, $\alpha = .69$. Participants' emotional reactions to the cries was computed as was done in Study 2, $\alpha = .78$.

Manipulation checks. The three imaging-task questions indicated that the imaging exercise affected self-worth as intended (see Table 5). Participants in the enhanced self-worth condition felt better about themselves than did control participants, who in turn felt better about themselves than did participants in the reduced self-worth condition. Similarly, participants in the reduced self-worth condition felt worse about themselves than did participants in the other two conditions. As intended, enhanced self-worth participants and reduced self-worth participants were more strongly affected by their respective imaging tasks than were control participants. The three experimental conditions did not differ in terms of the Rosenberg self-esteem measure. However, it is rare for trait self-esteem to be affected by transitory changes in self-worth (Baumeister, 1998). The self-worth manipulations did not affect either positive mood or negative mood, as indicated in Table 1. This is important because it differentiates specific feelings about the self, which are central to the present research, from general mood states, which are not.

Participants in the three experimental conditions did not differ in the degree to which they were upset by the cries; *self-worth enhanced* ($M = 2.81$, $SD = 0.75$), *control* ($M =$

TABLE 5: Effects of Imaging Task on Self-Worth and Mood by Condition, Study 3

Manipulation Checks and Mood Indices	Enhanced Self-Worth (N = 14)	Unchanged Self-Worth (N = 14)	Lowered Self-Worth (N = 14)
Imaging made you feel good about self	3.93 _a (0.83)	2.71 _b (1.49)	1.00 _c (0.00)
Imaging made you feel bad about self	1.38 _a (0.63)	1.21 _a (0.80)	3.93 _b (1.00)
Still affected by imaging	2.88 _a (1.19)	1.43 _b (0.85)	3.00 _a (1.47)
Rosenberg self-esteem	3.86 _a (0.75)	3.99 _a (0.89)	3.74 _a (0.96)
Positive mood (happy)	2.86 _a (1.17)	2.71 _a (1.07)	2.36 _a (0.93)
Negative mood (composite)	1.88 _a (1.03)	1.28 _a (0.43)	1.90 _a (0.89)

NOTE: Means with differing subscripts (across rows) represent post hoc (Tukey) difference of $p < .01$.

TABLE 6: Differences in Correlations Between Emotional Reactions Evoked by Hearing Baby Cries and Ratings of Distress Conveyed by Cries as a Function of Induced Self-Regard, Study 3

	Enhanced Self-Regard (N = 14)	Unchanged Self-Regard (N = 14)	Lowered Self-Regard (N = 14)
Correlation between own upset and distress conveyed in cries	.65 *	.39	-.15
r' transformation of the upset/distress correlation, above	.78 _a	.41 _{ab}	-.15 _c

NOTE: r' coefficients with "a" versus "c" subscripts differ at $p < .05$ (per Z tests), and r' coefficients with "b" versus "c" subscripts differ at $p < .10$. * $p < .05$.

3.27, $SD = 0.74$), *self-worth reduced* ($M = 3.30$, $SD = 0.77$), $F(2, 39) = 1.85$, $p = .17$. As in the previous studies, participants rated exposure to the cries as moderately upsetting ($M = 3.13$ on a 5-point scale). The degree to which participants, overall, were upset by the cries was positively related to their judgments of how much distress the cries conveyed, $r(42) = .30$, $p = .05$. This result is in accord with the general affect-as-information framework and with the prior two studies.

Participants in the three conditions did not differ in their ratings of distress conveyed by the cries; *self-worth enhanced* ($M = 5.03$, $SD = 0.61$), *control* ($M = 5.02$, $SD = 0.47$), *self-worth reduced* ($M = 5.15$, $SD = 0.60$), $F(2, 39) = 0.24$, $p = .79$. Groups were not expected to differ in their cry-rating judgments but only in the degree to which they used their own affective reactions to make these judgments.

MAIN ANALYSES

The main hypothesis of this study was that induced self-worth would determine how closely emotions evoked by the cry-rating task related to actual cry ratings. This hypothesis was tested by first correlating participants' own emotional reactions to their cry ratings. These correlations were separately computed for each of the three self-worth conditions and then the differences between each of these correlations were analyzed (see Table 6). Results confirm predictions. Among participants in the enhanced self-worth condition, emotional reactions to the baby cries were closely related to the distress perceived in the cries, suggesting that this group

was using its own affective reactions to interpret the baby cries. Among participants in the control condition, the correlation between emotional reactions to the cries, and cry ratings, was positive but did not reach significance ($p = .16$). Among participants in the reduced self-worth condition, the relation between own upset and cry ratings was negligible. The difference in correlations between the enhanced self-worth group and the reduced self-worth group was significant, and the difference between the control condition and the self-worth reduced group was marginally significant.

These results indicate that induced changes in self-worth may affect the degree to which people use their own feelings to interpret emotionally arousing situations. They therefore provide more solid evidence that self-regard moderates the use of emotions as information. In addition, Study 3 reinforces the general pattern of results produced in Studies 1 and 2, which indicated that the association between emotional reactions and judgment is determined by self-esteem.

GENERAL DISCUSSION

The three studies comprising this research confirm that self-esteem moderates the use of emotions as information. In these studies, participants rated how much distress babies conveyed through their cries and also reported their own emotional reactions to these cries. Studies 1 and 2 showed that participants' emotional reactions and their cry ratings were strongly related at

higher levels of self-esteem but were weakly related at lower levels of self-esteem. Study 3 experimentally manipulated participants' self-regard. The association between emotional reactions and cry ratings was strong for "high-self-regard" participants, moderate for control participants, and weak for "low-self-regard" participants. Collectively, the three studies provide solid and consistent evidence that self-esteem moderates the use of affect as information.

Alternative Explanations

Affect, self-esteem, and judgment are richly and complexly related (Forgas & Vargas, 2000) and might therefore contribute to the present outcomes in ways other than the predicted moderation model. Not all the competing explanations can be considered in a single set of studies, but several important ones are addressed here. These are now briefly reviewed.

Direction of causality. Self-esteem may be regarded as a moderator of affect as information if the affect/judgment relation becomes stronger when esteem is high and weaker when esteem is low (cf. Baron & Kenny, 1986). However, self-esteem may covary with the strength of this relation without operating causally on it. Study 2 controlled for this possibility by obtaining esteem scores several weeks before presenting the cry-rating task. Results from Study 2 closely replicated those of Study 1 (where esteem was measured after cry ratings), indicating that the moderation was genuine and not (for example) an artifact of self-esteem being itself affected by participants' emotional reactions to the baby cries.

Study 3 directly tested whether self-regard moderates the relation between affect and judgment. It showed that the association between reactions to the baby cries, and cry ratings, was strongest for participants whose self-regard was experimentally elevated and weakest for those whose self-regard was experimentally depressed. Because self-regard was manipulated in Study 3, the causal role of self-worth on the affect/judgment relation is strongly indicated.

In sum, there is good reason to believe that different levels of self-esteem are a cause, rather than a consequence or a co-occurrence, of variation in the affect/judgment relationship.

Social desirability. The cry-rating task may have carried social-desirability pressures that were selectively influential on the cry ratings of low-esteem participants. For example, lack of compassion may have been implied by underrating cries, and lack of fortitude may have been implied by overrating cries. Selective sensitivity to these concerns among low-esteem participants, rather than a general tendency to disregard their own emotional

signals, may have explained why their judgments appear unrelated to their emotional reactions. Results from Study 2 indicate that this was not the case. The Esteem \times Upset interaction remained significant even after controlling for social desirability, as measured by the BIDR.

Consistency explanation. Across the three studies, participants first rated the cries and then rated their emotional reactions to the cries. It may be that the correspondence between cry ratings and emotional reactions reflects a consistency motive, such that participants wished to show—to themselves or to the experimenter—that their cry reactions matched their cry ratings. However, there are several reasons to suspect that results are not a consistency artifact. First, if consistency was driving these results, then it should have selectively influenced high-esteem participants because they showed the highest rating/reaction correlations. But research suggests that high-esteem people are selectively inured to consistency pressures. People who have had their self-worth boosted are less likely to realign their attitudes to match their own counterattitudinal behavior (Steele & Lui, 1983). Similarly, making esteem salient reduces dissonance reduction among high-esteem people but accentuates it among low-esteem people (Spencer, Josephs, & Steele, 1993). In addition, low-esteem people may be especially influenced by consistency motives—at least in the important domain of self-appraisal (Swann, 1992). In sum, if the study induced consistency pressures, these pressures should have targeted low-esteem rather than high-esteem participants, yet our results—as predicted—show greater correspondence between affect reports and cry ratings among the high-esteem/high-self-worth participants.

Mood effects. Another alternative explanation is that generalized mood shifts arising from, or simply co-occurring with, the cry-rating task may account for the present results. For example, negative moods can lead to more systematic, and less emotion-guided, judgments (Forgas & Vargas, 2000), and low-esteem people are selectively sensitive to negative mood shifts (Watson & Clark, 1984). However, this issue was addressed in Study 1, where the esteem-moderated relation between participants' own upset and their cry ratings remained significant even after controlling for general mood. This result further reinforces the distinction between discrete emotions and general moods, as they respectively relate to event appraisal.⁴

Selective focus on negative affect. This study only tested whether self-esteem moderates the use of negative emotions (i.e., those aroused by the baby cries). Positive emotions were not explored. It may be that for high-esteem people, negative emotions are less common and are thus

more diagnostic than they are for low-esteem people, and therefore have more influence on judgment. However, there are reasons to suspect high-esteem people are not selectively attentive to negative emotions. Depressed people, who are typically saddled with low self-esteem (Tennen & Herzberger, 1987), selectively focus on negative events (Pyszczynski & Greenberg, 1987) and may sustain their depression as a result. Studies on happiness, which is closely related to self-esteem (Baumeister, 1998), show that happy people are less likely than unhappy people to focus on negative aspects of events (Lyubomirsky & Tucker, 1998). Similarly, people placed in happy mood states appear to selectively attend to positive events, and people in unhappy states attend to negative events (Bower, 1983). Collectively, these findings suggest that high-esteem people were not selectively attentive to the negative cries due to, for example, hedonic contrast. Nonetheless, the role of emotional valence on the present research is an important consideration and merits examination.

The Function of Self-Esteem

Baumeister (1998) notes an apparent paradox surrounding self-esteem. Maintaining self-esteem is one of the two most powerful self-motives (control being the other), and threats to self-esteem generate powerful emotions. Yet, says Baumeister, "There is a serious lack of evidence for beneficial or adaptive consequences of self-esteem" (p. 695). The current research may help resolve this mystery. It indicates that self-esteem serves the vital function of validating the informational value of one's own emotions.

There are many circumstances where decisions must be made without all the pertinent facts, prior experience, or access to experts. Perhaps equally daunting are situations where facts, experience, and experts conflict. Emotional cues may provide the essential arbitration that breaks these deliberative deadlocks. Indeed, advances in emotions research indicate that emotions provide approach/avoidance signals that become especially useful in the absence of declarative knowledge, sufficient objective information, or when there is insufficient time to consult memories or data (Clare, Wyer, et al., 2001). Damasio (1994) suggests that without the counsel of emotions, "pure" reason would spin out interminably before resolving into action. Emotional intelligence research (Salovey & Meyer, 1990) also indicates that attention to one's own emotions can adaptively guide behavior, particularly in ambiguous situations. Thus, like a pilot who depends on onboard navigation to penetrate a cloudbank, people use their emotions to negotiate situations that are novel, poorly defined, or conflicted. But, like the pilot, they must trust in the efficacy of their "onboard" (i.e., emotional) navigation sys-

tems. If they do not, then their emotional signals may become nondiagnostic. The present research indicates that self-esteem provides the basis for trusting in, and therefore profiting from, one's own emotional compass.

Understanding self-esteem in this light may have implications for decision making under extrinsic constraint. In Milgram's classic studies of obedience (Milgram, 1965), participants induced to shock a confederate displayed intense emotional turmoil. Their faces, body postures, and voice tone typically conveyed a strong emotional impulse to stop the shock administration. Competing against this emotional signal was an external authority persuading them that "the experiment must go on." Framed this way, the dilemma these people faced was whether to act on their own affective signals to quit or to follow the external demand to continue. The present research suggests that those who refused to comply may have had sufficient self-esteem to favor their internal, affective cues over the instructions of an external authority figure.⁵

The effect of self-esteem on resistance to extrinsic pressure has been demonstrated in both correlational studies and experiments (Arndt, Schimmel, Greenberg, & Pyszczynski, 2002), and the relation between self-esteem and autonomy is central to self-determination theory (cf. Sheldon & Kasser, 1998). Although the link between esteem, trust in emotions, and autonomy has not been established empirically, for Rogers (whose writing informs self-determination theory), this connection is essential. According to Rogers, accepting the merit of one's own emotions is a precondition of self-worth, and together, self-worth and emotional clarity permit less rigid, less defensive, and hence more accurate judgment (Rogers, 1961). Thus, an important implication of this research is that high-esteem people are less reactive to external cues (Campbell & Lavellee, 1993), are less susceptible to others' influence attempts (Janis, 1954), and are less affected by others' feedback (Brockner, 1984) because they are more confident in their own internal, affective responses.

Is there a downside to the self-esteem and affect-as-information connection? Perhaps people with excessively high self-esteem attend to their feelings to the exclusion of important external cues. This might help explain why high-self-esteem people are especially likely to act on their anger (Baumeister, Smart, & Boden 1996). Whether high self-esteem typically leads to hazardous emotional myopia or to beneficial affective sensitivity is an empirical question. However, self-affirmation theory (Steele, 1988) contends that people are typically motivated to attain sufficient rather than surplus levels of self-worth, which suggests that esteem generally clarifies rather than distorts the emotional contribution to judgment and decision making.

Practical Considerations

Recent advances in social development indicate that infants' well-being may be dramatically affected by caregivers' ability to interpret infants' emotional cues (Stern, 1985). To comprehend infants' states caregivers must often monitor their own reactions to infants' emotional expressions. The present research suggests that caregivers with high self-esteem may have more confidence in their own emotional reactions to infants' nonverbal signals and as a result will respond to infants with greater assurance and consistency. According to Stern (1985), infants who receive this kind of emotionally coherent attention are more likely to develop into well-adjusted adults than are infants who are treated in a less emotionally coherent manner.

Conclusion

Current research on the purpose of emotions, and in emotional intelligence, indicates that people can sometimes make better choices, respond more adaptively to challenge, and establish more satisfying social bonds by attending to their feelings. The present research indicates that to do so people must first trust and respect the source of these signals, that is, themselves. In sum, how we feel about our feelings may be shaped by how we feel about ourselves.

NOTES

1. Stanley Schachter, in his classic studies of anxiety and affiliation (Schachter, 1959), reported that one of the reasons frightened people seek out others is to confirm the legitimacy of their own emotional reactions.

2. Dr. Fran Lang, a neonatologist specializing in infant pain communication, produced these tapes. She confirmed that this sample includes equal numbers of low-, medium-, and high-intensity cries.

3. Reed and Aspinwall (1998) use a similar procedure to induce self-worth changes.

4. Forgas and Vargas (2000) detail how global moods and discrete emotions differ in terms of their respective informational properties, utilization constraints, and time-course of emergence.

5. In her study of Holocaust rescuers, Eva Fogelman (1994) observes that "moral rescuers had a strong sense of who they were and who they were about" (p. 162) and that in some cases this self-clarity, coupled with powerful emotional reactions of compassion toward victims, motivated resistance to Nazi authority.

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