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## **REGULATING ANGER AND SADNESS: AN EXPLORATION OF DISCRETE EMOTIONS IN EMOTION REGULATION**

**ABSTRACT.** Do emotion regulation processes vary as a function of discrete emotions? Focusing on anger and sadness, this study examined: (a) the strategies that men and women use to regulate each emotion, (b) the extent to which strategies differ in their use and effectiveness, and (c) the relationship between effective regulation of these emotions and social functioning. One hundred ninety participants described recent situations that evoked anger and sadness and how they regulated each emotion. Emotion regulation attempts for anger and sadness differed to some extent in both use and effectiveness. In addition, effective regulation of each emotion was associated with different aspects of social functioning. Effective anger regulation was associated with constructive conflict resolution style, and effective sadness regulation was associated with positive social relations. The findings suggest that global approaches to studying emotion regulation may be limited and emphasize the importance of moving toward a discrete emotions framework.

**KEY WORDS:** anger, emotional intelligence, emotion regulation, gender differences, sadness

### **INTRODUCTION**

Predominant approaches investigating emotion regulation focus on the regulation of clusters of negative emotions without attending to the regulation of specific or discrete emotions such as anger and sadness (e.g., Gross, 1998; Philippot and Feldman, 2004). Discrete emotions, however, contain unique and valuable information about one's relationship with the environment and enable one to respond adaptively to environmental changes (Izard, 1977; Lazarus and Smith, 1988; Plutchik, 1980). For example, anger occurs in response to perceived threats or injustices when there is someone or something to blame (Averill,

1983), and it triggers systematic attempts to regain control by shifting attention to the threat and physiological arousal in preparation for a behavioral response (e.g., attack; Ekman, 2003). Sadness, however, occurs when something of importance is lost without a blameworthy target (Barr-Zisowitz, 2000; Ellsworth and Smith, 1988), and it slows the cognitive and physiological systems in attempts to regain energy and muster support to adjust to the loss (Ekman, 2003; Izard and Ackerman, 2000). Given the functional significance and different response patterns of discrete emotions, such as anger and sadness, it is conceivable that the processes and outcomes of regulation attempts of each emotion vary.

In this article we consider the role of discrete emotions in emotion regulation. Focusing on two emotions, anger and sadness, we examined: (a) the strategies that men and women use to regulate each emotion, (b) the extent to which strategies differ in both use and effectiveness, and (c) the relationship between effective regulation of these emotions and social functioning.

### **Emotion Regulation**

There is no agreed-upon definition of emotion regulation in the literature; nevertheless, most theorists concur that emotion regulation refers to attempts to modify components of the emotional experience (e.g., subjective experience, physiology, expression, behavior) with regard to their occurrence, form, duration, and intensity (e.g., Eisenberg and Spinrad, 2004; Gross, 1998; Thompson, 1994). Modification of emotions may occur by initiating, avoiding, inhibiting, maintaining, or changing an emotional experience.

Effective emotion regulation is associated with optimal social functioning (e.g., Eisenberg, et al., 2000; Feldman et al., 1991; Keltner and Kring, 1998). In social interaction, verbal and non-verbal emotional responses convey information about one's thoughts, intentions, and behavior (Buck, 1984; Ekman, 1973; Keltner and Haidt, 2001). Learning to regulate these emotional expressions is adaptive as expressing emotions that violate social norms and display rules can have social consequences (Frijda and Mesquita, 1994; Saarni, 1999). For example,

children who do not regulate intense negative emotions are more aggressive toward others and are disliked by their peers (see Eisenberg et al., 1997), and adults who are more skilled at emotion regulation are more likely to have positive relationships and less likely to engage in socially deviant behaviors (e.g., Brackett and Mayer, 2003; Brackett et al., 2004; Lopes et al., 2003, 2004, 2005).

The field of emotion regulation encompasses two primary areas of inquiry: effectiveness of specific regulation strategies (e.g., Gross, 1998) and individual differences in effective regulation (e.g., Gross and John, 2002; Mayer et al., 2002). The effectiveness of emotion regulation strategies is most often described in terms of Gross's (1998) process model which postulates that regulation attempts vary in effectiveness according to when in the emotion process they are applied. According to this model, regulation attempts can occur at various points in an emotional episode, including before an emotional response is evoked (antecedent-focused strategies) or after the response is triggered (response-focused strategies). Empirical tests of this model indicate that at least one antecedent-focused strategy (cognitive reappraisal of an emotional situation) is more effective than at least one response-focused strategy (inhibition of emotional expression) at reducing physiological responses and subjective emotional experiences (Gross, 2001; Gross and Levenson, 1993; Richards and Gross, 2000). This research, however, does not compare systematically the effectiveness of strategies across emotions. Generally, negative emotions are clustered (Butler et al., 2003; Richards and Gross, 1999, 2000) or emotions, such as sadness (Gross and Levenson, 1997), disgust (Gross and Levenson, 1993), and embarrassment (Harris, 2001) are studied individually. The effectiveness of different types of strategies (e.g., distraction, rumination, verbal expression, avoidance, social support seeking) that occur at the same point within the unfolding of an emotional episode (e.g., after an emotional response is triggered) typically are not compared.

Moreover, current research on individual differences in effective regulation tends to define the construct as a global ability across multiple emotions (e.g., Mayer et al., 2002) or by

assessing the tendency to engage in specific strategies to regulate negative emotions in general, without identifying specific emotions (e.g., Gratz and Roemer, 2004; Gross and John, 2002). Such assessments assume that individual differences in emotion regulation ability or tendencies do not vary as a function of emotion.

### **Discrete Emotion Regulation**

At least three areas of research suggest that discrete emotions are relevant in effective emotion regulation. First, Barrett et al. (2001) showed that individuals who distinguished between and were more knowledgeable of discrete emotional states were better able to regulate negative emotions than those who made fewer distinctions and were less knowledgeable. These findings are understood within the affect-as-information framework, which suggests that discrete emotional states, compared to global affective states, have adaptive value in that they provide information about the person–environment relationship (e.g., Schwarz and Clore, 1996). Accordingly, identifying one's discrete emotional state, as opposed to making global evaluations of pleasantness–unpleasantness, enables one to identify the cause of the emotional state which leads to more adaptive selection responses.

Second, research with children shows that discrete emotions are regulated in different ways and to varying levels of effectiveness. Toddlers, for example, tend to use a broader repertoire of strategies when attempting to regulate frustration than when attempting to regulate fear (Diener and Mangelsdorf, 1999). The effectiveness of emotion-reducing strategies also varies depending on the targeted emotion. For example, Buss and Goldsmith (1998) found that distraction effectively reduced the intensity of anger but not fear in toddlers.

Third, there likely are gender differences in effective emotion regulation. Although there are few gender differences in the *experience* of emotions, there are significant differences in men's and women's expression of some emotions, most notably anger and sadness (Brody and Hall, 2000; Shields, 2002). Women are more likely to express sadness and cover up their anger,

whereas men are more likely to express their anger and cover up their sadness (Timmers et al., 1998). Moreover, when anger and depressed mood were induced in a lab setting, men and women varied in the strategies they chose for regulating each emotion and in how effective they were in their regulation efforts (Nolen-Hoeksema, 1993; Rusting and Nolen-Hoeksema, 1998). Specifically, female participants used a more effective anger regulation strategy (i.e., distraction), but a less effective strategy to regulate depression (i.e., rumination). In contrast, male participants used a more effective strategy to regulate depression (i.e., distraction), but a less effective strategy to regulate anger (i.e., rumination). These gender differences may be interpreted as emotion regulation efforts resulting from motives to avoid gender-inappropriate behavior (Goffman, 1959; Hochschild, 1983; Timmers et al., 1998). Stereotypes abound that sadness is a feminine emotion and anger is a masculine emotion (Brody and Hall, 2000; Fischer et al., 2004; Tiedens, 2001); thus, to adhere to gender norms in social interactions, women may be more motivated to regulate anger and men may be more motivated to regulate sadness.

### **The Present Study**

Current research paradigms rarely incorporate divergent characteristics of discrete emotions into their theories or operational definitions of emotion regulation (e.g., Gross, 1998; Mayer and Salovey, 1997), which may limit our understanding of effective regulation. The purpose of the study presented here is to test the hypothesis that emotion regulation strategies vary in both use and effectiveness according to the emotion being regulated.

We examined the strategies individuals used to regulate anger and sadness for several reasons. First, the functional significance of each emotion is distinct – anger signals that one's goals have been obstructed by someone or something, and sadness signals the irrevocable loss of a goal (Ekman, 2003). Second, each emotion triggers different physiological and cognitive responses: anger tends to mobilize and sustain high levels of energy, and sadness tends to slow cognitive and motor systems (Ekman, 2003; Izard and Ackerman, 2004). Given the

distinctions between these two emotions, it is likely that differences in regulation exist. Third, there are gender differences in how these emotions are regulated (e.g., Rusting and Nolen-Hoeksema, 1998; Timmers et al., 1998), which should optimize within and between subject differences in the regulation of each emotion.

The final reason for selecting anger and sadness is that both emotions can occur in social contexts and the effective regulation of these emotions may be related to social competence. Within interpersonal relations, unrestrained anger can lead to violence or abusiveness, and passive-aggressive regulation strategies can lead to alienation (Tavris, 1989). Effective anger expression, however, can facilitate conflict resolution and promote positive change within relationships (Kennedy-Moore and Watson, 1999). Effective regulation of sadness facilitates interpersonal relations and prosocial functioning (e.g., Fabes et al., 1994). For example, appropriate levels of sadness expression are helpful in generating empathy, sympathy, and assistance from friends and loved ones (Izard and Ackerman, 2000). Too much sadness expression may burden and alienate others and lack of expression may prevent the recruitment of necessary support (Barr-Zisowitz, 2000). By focusing on anger and sadness in the present study, we could examine differences in sadness and anger regulation attempts as well as the relationship of these attempts to social functioning. We examined social functioning in the context of peer relationships and selected two relevant variables: presence of positive social relationships and constructive responses to relationship stressors, specifically relationship conflict (cf. Stroebe and Stroebe, 1996).

Five questions guided the study:

- (1) What strategies do individuals employ to regulate anger and sadness?
- (2) Do men and women use different regulation strategies for anger and sadness?
- (3) Do individual differences in effective emotion regulation vary as a function of both emotion (i.e., anger and sadness) and gender?
- (4) What constitutes effective regulation of anger and sadness?

- (5) Are effective anger and sadness regulation related to social competence above and beyond the contributions of global measures of emotional intelligence and personality?

## **Method**

### *Participants*

One hundred ninety students (64% women, 31% men, 5% unreported) enrolled in a personality psychology course at a northeastern university participated in partial fulfillment of a laboratory requirement. Participants were, on average, 20 years old ( $SD = 1.82$  years), and were racially diverse (50% Caucasian, 21.6% Asian, 10.8% African American, 7.7% Hispanic, and 5% other).

## **Materials**

### *Emotion regulation*

To assess the strategies used to regulate anger and sadness, participants were asked to describe vividly in writing a situation in which they were angry (sad) with a close friend and then what they did to reduce their anger (sadness). The order of the anger and sadness questions was counterbalanced across participants.

## **Social Functioning**

Two measures of social functioning were included: conflict resolution style and positive social relations.

### *Conflict resolution style*

The 16-item *accommodation among romantic couples* scale by Rusbult et al. (1986) was adapted to assess conflict resolution in peer relationships. Participants reported the ways in which they respond to problems in their relationship with a specific person (friend, roommate, suitemate). Four categories of behaviors were assessed: active-constructive (e.g., “When this person and I have problems, I discuss things with him or her”), passive-constructive (e.g., “When this person and I are angry with each other, I give things some time to cool off on their own rather than taking action”), active-destructive (e.g., “When this person and I have a disagreement, I end up screaming at him or her”),

and passive-destructive (e.g., “When I am annoyed at this person, I avoid spending time with him or her”). The latter three subscales reflect less effective conflict resolution strategies in comparison to the active-constructive subscale (see Gable et al., 2004). Participants responded to the items using a 5-point Likert-type scale, 1 = “never do this” and 5 = “always do this.” The reliability of the full scale, after reverse-scoring responses on the three poor conflict resolution subscales was acceptable, Cronbach’s  $\alpha = 0.70$ . A composite effective conflict resolution score was computed by subtracting the mean responses on the three poor conflict resolution subscales from the mean responses on the active-constructive subscale (Gable et al., 2004). Higher scores reflected better conflict resolution.

#### *Positive social relations*

The 9-item *positive relations with others* subscale of the psychological well-being scale (Ryff, 1989) was used to assess the extent to which individuals have a social network on which they rely to share concerns and seek comfort. Sample items include: “It seems to me that most other people have more friends than I do” (reverse-scored), “I know that I can trust my friends, and they know they can trust me,” and “I enjoy personal and mutual conversations with family members or friends.” Participants responded to items using a 5-point Likert-type scale, 1 = “strongly disagree” and 5 = “strongly agree.” Responses to the nine items were averaged to form a total score. The reliability was acceptable,  $\alpha = 0.80$ .

#### **Covariates**

Prior research shows that the social functioning variables are related to emotional intelligence (Brackett and Mayer, 2003; Brackett et al., in press) and personality traits, including agreeableness and extraversion (Schmutte and Ryff, 1997), therefore we measured and controlled for these variables in order to evaluate the extent to which effective anger and sadness regulation explain additional variance. We also measured impression management to control for social desirability in responding.

### *Emotional intelligence*

The MSCEIT version 2.0 was used as an omnibus measure of emotion-related abilities (Mayer et al., 2002). The MSCEIT assesses the four-domain model of EI (perceiving, using, understanding, and regulating emotions) with 141 items that are divided among 8 tasks (2 for each domain). The test yields a score for each of the four domains and a total EI score. *Perceiving Emotions* is measured by asking respondents to identify the emotions expressed in photographs of people's faces (Faces) as well as the feelings suggested by artistic designs and landscapes (Pictures). *Use of Emotion to Facilitate Thought* is measured by two tasks that assess people's ability to describe emotional sensations with a cross-modality matching task involving a non-feeling vocabulary (Sensations), and identify the feelings that might facilitate or interfere with the successful performance of various cognitive and behavioral tasks (Facilitation). *Understanding Emotion* is measured by two tasks that pertain to a person's ability to analyze blended or complex emotions (Blends) and to understand how emotional reactions change over time or how they follow one another (Changes). *Managing Emotions* involves two tasks that assess how participants manage their own (Emotion Management) and others' emotions (Social Management).

Data were scored by the test publisher based on consensual scoring norms that reflect the proportion of people in the normative sample (of over 5,000 people) who endorsed each MSCEIT test item alternative. The split-half reliability of the full test was 0.89, indicating high internal consistency (cf. Mayer et al., 2003).

### *Personality*

Personality traits were assessed with the 240-item NEO-PI-R (Costa and McCrae, 1992), which measures five global dimensions of personality: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Participants completed the scale using a 5-point scale Likert-type scale, 1 = "strongly disagree" and 5 = "strongly agree." The reliability and validity of this measure are well established (Costa

and McCrae, 1992). In the present sample, reliabilities of the five scales were acceptable, Cronbach's  $\alpha$ s  $\geq 0.82$ .

### *Social desirability*

Social desirability was assessed with a 20-item impression management scale, which measures the tendency to provide consciously inflated self-descriptions (i.e., faking or lying) to produce a desired effect (Paulhus, 1998). Participants completed the scale using a 5-point scale Likert-type scale, 1 = "strongly disagree" and 5 = "strongly agree." The reliability of the scale was acceptable, Cronbach's  $\alpha = 0.71$ .

### **Procedure**

There were four components to the procedure: participant data collection, coding of regulation strategies, coding of effective regulation, and word count.

### *Data collection*

Participants completed the battery of surveys during a class meeting, except for the MSCEIT, which was taken online outside of class, prior to the completion of the other measures. No identifying information was collected; participant data was identified using a participant-selected identification number.

### *Regulation strategies*

To identify the types of regulation strategies participants used, a coding scheme was developed. First, however, we reviewed the theoretical and empirical literature to identify the types of strategies individuals may employ to regulate their emotions (e.g., Denham, 1998; Gross, 1999a, b, 2001; Linden et al., 2003; Nolen-Hoeksema, 1993). Eight categories of regulation strategies were identified and are described below. Table I includes examples of each strategy.

*Nonverbal expression* refers to physical behaviors such as crying, yelling, screaming, taking deep breaths, violent behaviors, and relaxation behaviors.

*Verbal expression* refers to all verbal expressions of feelings directed to the close friend involved in the emotional situation

TABLE I  
Emotion regulation coding scheme

Category	Description	Examples
Nonverbal expression	Nonverbal expressions such as crying, yelling, screaming, taking deep breaths, violent behaviors, and relaxation behaviors	I took a deep breath I hit my friend I cried to my parents
Verbal expression of feelings	All verbal expressions of feelings directed to the target, others, or the self (e.g., journal writing). Verbal expressions of feelings that were identifiable as covering up true feelings or reflecting display rules were coded in a separate category (passive or indirect strategies)	I wrote about my feelings in my journal I told the friend how I felt I talked with another friend about my feelings
Attempts to change the situation	Active and direct attempts to modify the emotional situation through behaviors (e.g., requesting the target to fix the situation, apologizing to target for own behavior) or cognitive strategies (e.g., cognitive reappraisal, thinking about the positives or negatives of the situation)	I accepted the situation and moved on I confronted my friend about what happened I made new friends
Information gathering	Attempts to learn more about the emotional situation either by talking to the target or to others, or by reflecting on the situation to assess its impact on the self or to consider the target's point of view	I thought about the situation from my friend's perspective I asked my friend to explain what happened I asked my mom for advice about what I should do

TABLE I  
continued

Category	Description	Examples
Leaving the situation	Physical departure from the situation (e.g., leaving the situation, avoiding the target)	I left the room
Passive or indirect strategies	Physical or cognitive strategies that deal with the emotional situation in indirectly or passively, such as waiting for the target to apologize or fix the situation, saying negative things about the target or ignoring one's feelings	I wouldn't allow myself to think about what happened I waited for my friend to apologize I told my other friends what a horrible friend she was because of what she did
Distraction	Engagement in activities unrelated to the situation, such as exercise, studying, or hanging out with friends	I listened to music We continued playing the video game I went to the movies with some other friends
Seek comfort, pray	Engagement in activities specifically focused on receiving comfort or support from others, or turning to prayer or religion	I prayed I turned to my other friends to make me feel better

(the “target”), others, or the self (e.g., journal writing). Verbal expressions of feelings that were identifiable as covering up true feelings or reflecting display rules, were coded in a separate category (*passive or indirect strategies*).

*Attempts to change the situation* refer to active and direct attempts to modify the emotional situation through behaviors (e.g., requesting the target to fix the situation, apologizing to target for own behavior) or cognitive strategies (e.g., cognitive reappraisal, thinking about the positives or negatives of the situation).

*Gathering information* refers to attempts to learn more about the emotional situation either by talking to the target or to others, or by reflecting on the situation to assess its impact on the self or to consider the target’s point of view.

*Leaving the situation* refers to the physical removal of the self from the situation (e.g., avoiding the target).

*Passive or indirect strategies* refer to physical or cognitive strategies that deal with the emotional situation indirectly or passively, such as waiting for the target to apologize or fix the situation, saying negative things about the target, or ignoring one’s feelings.

*Distraction* refers to engagement in activities unrelated to the situation, such as exercise, studying, or hanging out with friends.

*Seeking comfort* refers to behaviors specifically focused on receiving comfort or support from others, or turning to prayer or religion.

The categories reflect behavioral or cognitive strategies and were grouped according to what the strategy was intended to achieve (e.g., expression of emotion, changing the situation).

Prior to coding, the open-ended responses were entered into a word processing program to facilitate the coding process. Then, two trained research assistants independently assigned one of the eight categorical codes to each element of the strategy description that could be identified as a separate strategy; participants often reported using multiple strategies to regulate their emotions. Two measures of agreement were used to test reliability: Cronbach’s alpha and Kappa (which corrects for

chance agreement). Analyses were conducted separately for each strategy used within each emotion. Cronbach's alphas ranged from 0.71 to 0.87 and Kappas ranged from 0.62 to 0.84. These reliabilities are all in the acceptable range (Cicchetti, 2001).

The content analysis yielded two types of strategy codes that were assigned to each participant for both anger and sadness regulation attempts: (a) number of times each of the eight strategies was used and (b) total number of unique strategies used (range = 1–5).

### *Expert scoring of regulation effectiveness*

Because effective emotion regulation serves to meet personal and social goals in addition to reduce the intensity of an emotion (Eisenberg and Spinrad, 2004), three effectiveness evaluations were made: (a) reduction of the emotion; (b) preservation of the friendship; and (c) maintenance of well-being. Ratings of effectiveness of emotion reduction and friendship preservation were assessed using a 5-point Likert-type scale, 1 = “not at all effective” and 5 = “very effective.” Ratings of effectiveness of well-being maintenance were assessed using a 5-point Likert-type scale, 1 = “reduced well-being a lot” and 5 = “enhanced well-being a lot.”

Two female experts with assessment experience and advanced degrees in clinical psychology evaluated independently the effectiveness of the regulation strategies. For each emotion, the experts read the description of the emotion situation and how the participant regulated the emotion. Participants' anger and sadness descriptions were separated so that evaluators could not compare the situations or strategies used by individual participants across emotions. Demographic information, including gender, was not explicitly available to the evaluators. Participants often included their own assessments of the effectiveness of the regulation strategy in their writing (e.g., “we're still very close today,” or “we no longer speak”); these assessments were removed so as not to bias the evaluations.

Inter-rater reliability of the three effectiveness ratings was acceptable: reduce emotion  $r_{\text{anger}} = 0.68$  and  $r_{\text{sad}} = 0.60$ ; preserve friendship  $r_{\text{anger}} = 0.84$  and  $r_{\text{sad}} = 0.80$ ; and maintain well-being  $r_{\text{anger}} = 0.70$  and  $r_{\text{sad}} = 0.70$ . Ratings were averaged

across the two judges to form a score for each area of effectiveness. The reliability of the three effectiveness scores for each emotion was high,  $\alpha_s = 0.89$ . The three effectiveness scores for each emotion were averaged together to form two overall effectiveness scores, one for each emotion (“anger regulation effectiveness” and “sadness regulation effectiveness”).

### *Word count*

Expert ratings of effectiveness may be influenced by the length of the participants’ descriptions of the emotion situation and the regulation strategies. Thus, total word count for descriptions of each emotion situation and the emotion regulation strategy were computed using the Word Count function in Microsoft Word.

## RESULTS

Results are organized according to the five primary research questions. Before addressing each question, descriptive statistics regarding the length of the open-ended responses are reported.

Two 2 (gender) by 2 (emotion: anger, sadness) repeated measures analyses of variance (ANOVA) were conducted to test mean differences in length of the responses. Participants used a comparable number of words to describe the anger and sadness eliciting situations ( $M_{\text{anger}} = 117.65$ ,  $SD_{\text{anger}} = 58.03$ ;  $M_{\text{sadness}} = 114.53$ ,  $SD_{\text{sadness}} = 60.41$ ;  $F(1, 179) = 1.30$ ,  $p > 0.05$ ). Women used significantly more words than men to describe the emotion eliciting situations ( $M_{\text{women}} = 123.38$ ,  $SD_{\text{women}} = 61.18$ ;  $M_{\text{men}} = 101.03$ ,  $SD_{\text{men}} = 51.82$ ;  $F(1, 179) = 8.64$ ,  $p < 0.01$ ,  $\eta^2 = 0.05$ ). The gender by emotion interaction was not significant,  $F(1, 179) = 2.46$ ,  $p > 0.05$ .

Participants used a comparable number of words to describe how they regulated each emotion ( $M_{\text{anger}} = 35.69$ ,  $SD_{\text{anger}} = 19.38$ ;  $M_{\text{sadness}} = 32.65$ ,  $SD_{\text{sadness}} = 15.94$ ;  $F(1, 179) = 3.79$ ,  $p > 0.05$ ,  $\eta^2 = 0.02$ ). Again, women used significantly more words than men to describe their regulation strategies ( $M_{\text{women}} = 35.75$ ,  $SD_{\text{women}} = 18.62$ ;  $M_{\text{men}} = 30.91$ ,  $SD_{\text{men}} = 15.11$ ;

$F(1, 179) = 4.48, p < 0.05, \eta^2 = 0.02$ ). The gender by emotion interaction was not significant,  $F(1, 179) = 0.04, p > 0.05$ .

### **How Do Individuals Regulate Anger and Sadness?**

On average, participants reported using significantly more strategies to regulate anger than sadness ( $M_{\text{anger}} = 2.28, SD_{\text{anger}} = 1.17; M_{\text{sadness}} = 2.02, SD_{\text{sadness}} = 1.10; F(1, 183) = 5.98, p < 0.05, \eta^2 = 0.03$ ). Women report using significantly more strategies than men for both emotions ( $M_{\text{women}} = 2.29, SD_{\text{women}} = 1.17; M_{\text{men}} = 1.83, SD_{\text{men}} = 0.94; F(1, 183) = 10.99, p < 0.001, \eta^2 = 0.06$ ).

The extent to which individuals used each of the eight regulation strategies are reported in Table II. The percentage that each strategy was used is reported in Part A of the table. The strategy most commonly used by participants (over 50%) to regulate anger and sadness was *attempts to change the situation*. Patterns of use for the remaining strategies appear to differ by emotion. When regulating anger, approximately one third of participants reported using the following strategies: *passive or indirect strategies, verbal expression of anger, and leaving or avoidance strategies*. A repeated measures analysis of variance (ANOVA) was conducted to compare the mean usage scores for each anger regulation strategy. There was a significant difference in mean usage,  $F(7, 1281) = 23.82, p < 0.001, \eta^2 = 0.12$ . Univariate analyses showed that participants were significantly more likely to use *attempts to change the situation* than the other strategies, followed by *verbal emotional expression, information gathering, leaving, and passive strategies*. Participants were least likely to use *praying, distraction, and nonverbal expression* to regulate anger. The strategy by gender interaction was not significant,  $F(7, 1281) = 1.66, p > 0.05$ .

Use of sadness regulation strategies was less consistent across participants. Following *attempts to change the situation*, the most commonly reported strategies used were *information gathering* (25%), *passive or indirect strategies* (19%), and *verbal emotional expression* (18%). A repeated measures ANOVA was conducted to compare the mean usage scores for each sadness regulation strategy. There was a significant difference in mean

TABLE II  
 Mean (standard deviation) differences in use of emotion regulation strategies within emotion (anger versus sadness) and between genders (men versus women)

Strategy type	A. % of use		B. Mean (SD) usage															
	Anger		Sadness			Anger			Sadness									
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women						
Change situation	53.0	50.8	54.0	58.3	52.5	60.5	0.65	(0.70)	0.61	(0.66)	0.68	(0.72)	0.85	(0.90)	0.72	(0.82)	0.92	(0.93)
Passive/indirect	34.1	34.4	32.3	19.1	19.7	18.5	0.39	(0.60)	0.39	(0.56)	0.39	(0.61)	0.22	(0.47)	0.23	(0.50)	0.21	(0.47)
Verbal expression	34.1	23.0	38.7	18.6	13.1	21.7	0.35	(0.51)	0.23	(0.42)	0.41	(0.54)	0.21	(0.46)	0.13	(0.34)	0.25	(0.50)
Leave	31.9	19.7	36.3	10.3	9.8	10.5	0.35	(0.56)	0.23	(0.50)	0.41	(0.58)	0.10	(0.30)	0.10	(0.30)	0.11	(0.31)
Info. Gathering	24.7	16.4	29.8	25.8	22.9	28.2	0.25	(0.44)	0.16	(0.37)	0.30	(0.46)	0.29	(0.51)	0.25	(0.47)	0.32	(0.53)
Nonverbal expression	11.8	16.4	9.7	13.4	6.6	14.5	0.15	(0.48)	0.18	(0.43)	0.14	(0.50)	0.13	(0.37)	0.07	(0.25)	0.16	(0.41)
Unrelated activity	7.2	11.4	5.6	13.9	16.4	13.7	0.08	(0.29)	0.13	(0.39)	0.06	(0.23)	0.18	(0.47)	0.18	(0.43)	0.18	(0.50)
Pray/seek comfort	3.1	3.3	3.2	3.1	1.6	3.2	0.03	(0.18)	0.03	(0.18)	0.03	(0.18)	0.03	(0.16)	0.02	(0.13)	0.03	(0.18)

usage,  $F(7, 1281) = 37.98$ ,  $p < 0.001$ ,  $\eta^2 = 0.17$ . Univariate analyses showed that when regulating sadness participants were significantly more likely to use *attempts to change the situation* than the other strategies, followed by *verbal emotional expression*, *information gathering*, *passive strategies*, and *distraction*. Participants were least likely to use *nonverbal expression*, *leaving*, and *praying* to regulate anger. The strategy by gender interaction was not significant,  $F(7, 1281) = 0.87$ ,  $p > 0.05$ .

### **Do Men and Women Use Different Regulation Strategies for Anger and Sadness?**

To examine whether men and women report using different types of strategies for regulating anger and sadness, we tested mean differences in use across the emotional episodes. Table II, Section B reports the mean usage score for each strategy, separated by emotion and gender. A repeated measures multivariate analysis of variance (MANOVA) was conducted with the anger and sad strategies as within-subjects factors and gender as a between-subjects variable. The main effect for emotion was significant;  $F(8, 176) = 5.10$ ,  $p < 0.001$ ,  $\eta^2 = 0.19$ . Univariate analyses revealed that participants were (a) more likely to *attempt to change the situation* and *engage in other activities* to when regulating sadness than anger, and (b) more likely to use *passive strategies*, *verbally express* their emotions, and *leave* when regulating anger than sadness. These findings indicate that individuals use regulation strategies differently depending on the emotion being regulated.

There also was a significant main effect for gender,  $F(8, 176) = 2.66$ ,  $p < 0.01$ ,  $\eta^2 = 0.11$ . Follow-up analyses showed that women were more likely than men to use *verbal expression* as a regulation strategy ( $M_{\text{women}} = 0.33$ ,  $SD_{\text{women}} = 0.52$ ;  $M_{\text{men}} = 0.18$ ,  $SD_{\text{men}} = 0.38$ ;  $F(1, 183) = 1.85$ ,  $p < 0.01$ ). No other gender differences emerged. The emotion by gender interaction was not significant,  $F(8, 176) = 1.02$ ,  $p > 0.05$ , indicating that women's and men's use of the strategies did not differ according to the emotion being regulated.

In summary, use of the regulation strategies differed to some extent depending on the emotion being regulated, but women and men employed the strategies to similar extents (except for

*verbal emotional expression* which women used more often than men), regardless of emotion.

### **Do Individual Differences in Effective Emotion Regulation Vary as a Function of Emotion and Gender?**

We first evaluated the strength of the relationship between effective regulation of anger and sadness, which was statistically significant,  $r(184) = 0.28$ ,  $p < 0.001$ . Although the correlation was significant, it was only moderate in size, suggesting that the ability to regulate emotions effectively varies depending on the target emotion. There was no gender difference in the strength of the correlation.

To test whether individuals were more effective anger or sadness regulators, a 2 (effectiveness score: anger, sadness) by 2 (gender: male, female) mixed model ANOVA was conducted with effectiveness score as a within-subjects factor and gender as a between-subjects factor. The two main effects were significant. Participants, overall, were rated as more effective regulators of sadness than anger, ( $M_{\text{sadness}} = 3.52$ ,  $SD_{\text{sadness}} = 0.78$ ;  $M_{\text{anger}} = 3.15$ ,  $SD_{\text{anger}} = 0.82$ ;  $F(1, 173) = 24.98$ ,  $p < 0.001$ ,  $\eta^2 = 0.13$ ). Women were rated as more effective regulators than men ( $M_{\text{women}} = 3.41$ ,  $SD_{\text{women}} = 0.79$ ;  $M_{\text{men}} = 3.18$ ,  $SD_{\text{men}} = 0.81$ ;  $F(1, 173) = 4.56$ ,  $p < 0.05$ ,  $\eta^2 = 0.03$ ). The gender by emotion interaction was not significant,  $F(1, 173) < 1.0$ .

### **What Constitutes Effective Regulation of Anger and Sadness?**

To understand effective anger and sadness regulation, we examined the relationship between the effectiveness scores (assigned by the expert judges) and the characteristics of the participants' descriptions including type of strategy, number of unique strategies used, and the length of the description. Two linear regression models were conducted, one with the anger effectiveness score as the criterion and one with the sadness effectiveness score as the criterion. The models included: gender, the length of participants' descriptions of the anger or sad situation and the accompanying regulation strategy, total number of unique strategies employed for the target emotion, and the usage scores

for each of the eight regulation strategies for the target emotion. The final models are reported in Table III.

Both models were statistically significant: anger effectiveness:  $R^2 = 0.40$ ,  $F(12, 167) = 9.08$ ,  $p < 0.001$ ; sadness effectiveness:  $R^2 = 0.38$ ,  $F(12, 165) = 8.27$ ,  $p < 0.001$ . As reported in Table III, individuals with higher anger regulation effectiveness scores were more likely to be women and to regulate anger using *attempts to change the situation*, and were less likely to regulate anger by *leaving the situation* and using *passive or indirect* strategies. Individuals with higher sadness regulation effectiveness scores were more likely to use fewer words to describe the emotion-eliciting situation and to regulate their sadness by engaging in *verbal emotional expression* and *attempting to change the situation*; they also were less likely to regulate their sadness by using *passive or indirect* strategies.

Both sadness and anger regulation effectiveness were related to two regulation strategies: *attempts to change the situation* and *not engaging in passive or indirect* strategies. Three differences in regulation effectiveness for anger and sadness emerged: (a) *verbal expression of feelings* was associated with higher regulation effectiveness scores for sadness; (b) *leaving the situation* was associated with lower regulation effectiveness scores for anger; and (c) women were more effective than men at regulating anger.

### **Are Effective Anger and Sadness Regulation Related to Social Competence?**

These analyses suggest that the components of effective anger regulation are somewhat distinct from the components of effective sadness regulation. But, are individual differences in effective regulation of anger and sadness related to social competence? To answer this question, we conducted two linear regression analyses with our two social competence variables as the criteria: conflict resolution and positive social relations. In the first step of each regression model the following variables were entered: gender, MSCEIT scores, scores on the Big 5 personality inventory, and impression management. Anger and sadness effectiveness scores were entered in the second step of

TABLE III  
 Regression analyses: correlates of effective sadness (Model A) and anger (Model B) regulation

Model A		Model B					
Criterion: effective sad regulation		Criterion: effective anger regulation					
<i>t</i>	$\beta$	$R^2$	<i>F</i>	<i>t</i>	$\beta$	$R^2$	<i>F</i>
Gender	1.28	0.08		2.25	0.15*		
Word count: situation	-2.10	-0.16*		-1.90	-0.13		
Word count: regulation strategies	1.91	0.15		1.41	0.11		
Flexibility in strategies	-1.16	-0.15		0.54	0.07		
Change situation	3.99	0.39***		2.53	0.24*		
Verbal expression	3.67	0.33***		0.67	0.06		
Passive	-2.11	-0.18*		-3.23	-0.29**		
Leave situation	-1.22	-0.10		-4.22	-0.35***		
Information gathering	1.57	0.15		1.28	0.12		
Pray or seek comfort	0.87	0.06		0.28	0.02		
Nonverbal expression	-0.72	-0.06		-0.69	-0.05		
Unrelated activity	0.27	0.02		1.21	0.09		
Model		0.38***	8.27***			0.40***	9.08***

each model. Adding anger and sadness regulation effectiveness scores to the models resulted in significant changes in the models: conflict resolution, ( $\Delta R^2 = 0.04$ ,  $F(2, 157) = 3.92$ ,  $p < 0.05$ ; positive social relations, ( $\Delta R^2 = 0.03$ ,  $F(2, 150) = 3.73$   $p < 0.05$ ). The full models are reported in Table IV.

Anger and sadness regulation effectiveness scores were related to different aspects of social competence, as expected. Anger regulation effectiveness was positively and significantly associated with effective conflict resolution styles, controlling for gender, MSCEIT scores, the Big 5 traits, and impression management. Sadness regulation effectiveness was not related to conflict resolution styles. Neuroticism and extraversion also were correlates of conflict resolution. Effective regulation of sadness was positively and significantly associated with positive social relations, controlling for gender, MSCEIT scores, and the Big 5 traits. Anger regulation effectiveness was not related to positive social relations. Agreeableness, extraversion, and MSCEIT total scores also were significant correlates of positive social relations.

In summary, anger and sadness regulation effectiveness were related to different aspects of social competence, and contributed to explaining significantly more variance in the social competence variables after controlling for gender, personality, and emotional intelligence.

## DISCUSSION

In examining the strategies men and women described for regulating anger and sadness, we found preliminary evidence that emotion regulation attempts for anger and sadness differ in both use and effectiveness. In addition, effective regulation of each emotion was associated in different ways with two social functioning variables. Specifically, effective anger regulation was associated with constructive conflict resolution style, and effective sadness regulation was associated with positive social relations. Each of our findings will be discussed in turn.

TABLE IV  
Correlates of social competence

	Model A				Model B			
	Criterion: conflict resolution				Criterion: positive social relations			
	<i>t</i>	$\beta$	$R^2$	<i>F</i>	<i>t</i>	$\beta$	$R^2$	<i>F</i>
<i>Step 1</i>								
Gender	-1.50	-0.12			2.00	0.15*		
Neuroticism	-2.72	-0.23**			-0.93	-0.07		
Extraversion	2.61	0.21*			5.92	0.42***		
Openness	0.65	0.05			-1.11	-0.09		
Agreeableness	-1.20	-0.10			2.94	0.23**		
Conscientiousness	-1.18	-0.10			-2.11	-0.16		
MSCEIT	1.19	0.10			2.49	0.18		
Impression management	1.81	0.16			-0.44	-0.04		
Model			0.15	3.53**			0.35	10.33***
<i>Step 2</i>								
Gender	-1.64	-0.13			1.67	0.12		
Neuroticism	-2.51	-0.21*			-0.56	-0.04		
Extraversion	2.59	0.21*			6.01	0.42***		
Openness	0.65	0.05			-1.10	-0.08		
Agreeableness	-1.43	-0.12			2.74	0.22**		
Conscientiousness	-0.98	-0.08			-1.83	-0.14		
Impression management	1.54	0.13			-0.61	-0.05		
MSCEIT	0.82	0.07			2.22	0.16*		
Anger effectiveness score	2.49	0.19*			1.24	0.09		
Sadness effectiveness score	0.55	0.04			2.01	0.14*		
Model			0.19	3.71***			0.38	9.31***

Note: Gender dummy coding: 0 = male, 1 = female. \* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ .

### Anger and Sadness Regulation

The present study examined the range of strategies used after sadness or anger was elicited. In their narrative accounts, men

and women described using strategies to different extents for regulating sadness and anger in the context of a close friend relationship. With sadness, participants were more likely to engage in (a) *attempts to change the situation*, such as through cognitive reappraisal or by apologizing; and (b) *other activities*, such as listening to music or playing videogames, than when regulating anger. With anger, however, men and women were more likely to engage in (a) *verbal emotional expression*, such as writing about the event in a diary or talking about feelings with the friend; (b) *passive strategies*, such as not thinking about the event or waiting for the friend to apologize; and (c) *leaving the situation*, such as avoiding the friend, than when regulating sadness.

There were some differences in the strategies that were related to effective anger and sadness regulation: *verbal expression of feelings* was related positively to effective sadness regulation only, and *leaving the situation* was related negatively to effective anger regulation only. However, there was some overlap; effective anger and sadness regulation both were related positively to *attempts to change the situation* and negatively to *using passive strategies*. This suggests that certain types of strategies may be effective for regulating both anger and sadness, while some strategies may be effective only for specific emotions.

Of interest, participants did not always utilize effective regulation strategies. Although individuals were more likely to regulate anger than sadness by *verbal emotional expression*, this strategy only was related to effective sadness regulation. In response to anger, participants were more likely to *leave the situation*, which was related to ineffective anger regulation.

These findings contribute to the emotion regulation literature in several ways. First, they show that individuals vary in how they attempt to regulate different emotions. Measuring the tendency to engage in specific regulation strategies without also specifying the emotion to be regulated may overlook important variance in how individuals regulate their emotions (e.g., Gratz and Roemer, 2004; Gross and John, 2002).

Second, they show that individuals do not always utilize strategies that contribute to effective regulation. Although

more research is needed to examine which strategies are most effective at regulating specific emotions, there are potential implications for clinical interventions that develop regulation skills. In particular, such interventions may need to teach different strategies for specific emotions. These findings also may be important to integrate into educational curricula that develop and promote social and emotional learning, for which the teaching of emotion skills is a key component (e.g., Izard et al., 2004; Maurer and Brackett, 2004; Zins et al., 2004). Because emotion dysregulation and deficits in emotion knowledge are linked to poor social functioning including poor empathic responses and externalizing behavior (Eisenberg et al., 1997), the impact of these programs on social outcomes may be enhanced with activities that focus on how individuals vary in their ability to process and respond to discrete emotional information.

Third, findings from the present study extend research testing the process model of emotion regulation (Gross, 1998). There is now an impressive literature advocating cognitive reappraisal as an effective antecedent-focused regulation strategy because it reduces the subjective and physiological experience of an emotion without impairing cognitive functioning, such as memory for the emotional event (e.g., Gross, 1999b; Richards and Gross, 2000). However, reappraising a situation prior to its occurrence arguably changes the emotional episode itself no longer making it an emotion-eliciting event. Because not all emotional events are predicted – many are automatic responses to unexpected changes in the environment – how can one effectively regulate an emotion after its onset? Does cognitive reappraisal work after an emotion has been elicited? The current study offers some evidence that modifying the situation cognitively (as in reappraisal) or behaviorally also is effective after emotion elicitation. Additionally, the results add to the evidence showing that inhibition, which was coded as a passive or indirect regulation strategy in this study, is ineffective (e.g., Gross and Levenson, 1993, 1997; Richards and Gross, 1999), and extends those findings by showing that it is ineffective for both anger and sadness regulation.

Fourth, this work adds to the anger and sadness regulation literature. It complements work by Linden et al. (2003) which shows that individuals use a variety of strategies to regulate anger, not just anger-out (e.g., hostile expression) and anger-in (e.g., suppression). There is very little research examining how sadness is regulated; most work focuses on depression instead (Barr-Zisowitz, 2000). Thus, this work begins to identify how men and women regulate sadness, and suggests that they use a range of strategies.

Finally, this work contributes to the limited research on individual differences in emotion-related abilities that are linked to discrete emotions. For example, there is some evidence that emotion perception skills may not reflect a general ability, but rather that individuals may be adept at identifying some emotions in faces but not others (see O'Sullivan and Ekman, 2004). In addition, there is a link between the ability to differentiate emotional states and emotion regulation; individuals who are more likely to differentiate between negative emotions are also more likely to engage in effective emotion regulation (Barrett et al., 2001).

### **Gender Differences in Anger and Sadness Regulation**

Compared to men, women were judged to be more effective regulators of both emotions, which supports findings from other studies that women are more skilled at emotion-related abilities (e.g., Brackett and Mayer, 2003; Brody and Hall, 2000). However, contrary to our predictions, there were no gender by emotion interactions in (a) the types of strategies used for emotion regulation or (b) effective emotion regulation. The lack of interaction may be because we were looking at how emotions were regulated in the context of a friendship, where there is unlikely to be a status differential. Often gender differences in emotion-related processes arise when there is a power disparity (e.g., LaFrance et al., 2003; Timmers et al., 1998). Alternatively, it may be that women and men are more similar than different in terms of how they regulate emotions (cf. Hyde, 2005).

### **Social Functioning and Effective Anger and Sadness Regulation**

Although both effective regulation of anger and sadness were related to positive social functioning, they each were associated with different aspects of functioning. Only effective anger regulation was related significantly to a conflict resolution style that preserves relationships; and only effective sadness regulation was related significantly to the presence of trusting and fulfilling friendships. One may argue that individuals who effectively regulate anger would avoid conflict altogether and those who effectively regulate sadness would not need a social support network. However, the environment often is not within our control; it is not always feasible to avoid emotional situations or cognitively reappraise a situation prior to an emotional response. Indeed, effective emotion regulation requires openness to emotion experience, not absence of emotion (Mayer and Salovey, 1997; Salovey and Mayer, 1990).

These results contribute to the accumulating evidence that emotion regulation abilities promote social functioning. For example, Lopes et al. (2004) examined the relationship between ability to manage emotions and the quality of social interactions. An undergraduate sample took the MSCEIT and was asked to have their close friends rate their personal qualities. The students who scored higher on the managing emotions dimension of the MSCEIT received more positive ratings from their friends on the quality of their social interactions. Similarly, college students who scored higher on the managing emotions dimension of the MSCEIT were viewed by their peers as more interpersonally sensitive and prosocially inclined (Lopes et al., 2005). The study described here extends these findings by suggesting that additional information about the emotion regulation–social functioning relationship may be gained by examining discrete emotions.

### **Limitations and Future Directions**

The first limitation to this study is that only two emotions, anger and sadness, were examined. To investigate fully the extent to which discrete emotions matter in emotion regulation, future research needs to incorporate other emotions, both positive and negative. Second, only one emotional event was

described per participant per emotion, and this event was chosen by the participants themselves. A single emotion event may not be representative of regulation attempts, as situational variables impact use of regulation strategies and their effectiveness (Pauls, 2004). Measuring emotion regulation attempts using daily diary reports or experience sampling methodologies (Christensen et al., 2003) would be informative, as would manipulating emotions in a laboratory. Inducing emotional states in the laboratory would provide standardization across participants enabling more controlled comparisons. However, laboratory manipulations may lack in realism especially when examining how emotions are regulated in interpersonal contexts. Evaluating the components of emotion-related skills is a challenge given the myriad of factors involved in emotional situations, including social norms that may vary across situations and other cultural differences.

By relying on autobiographical recall of emotion regulation attempts, the current study assumes that individuals have access to how they regulate emotions. Clearly, this method does not allow for the assessment of regulatory information that may occur at an unconscious, automatic level (Fitzsimons and Bargh, 2004). To move beyond self-report assessments, future work should utilize real-time assessments of effective regulation. One way to do this would be induce discrete emotions in the lab and measure the reduction of the emotion through physiological indicators and cognitive markers. There is some evidence that the physiological components of anger can be reliably distinguished from a neutral state and from fear (Stemmler, 2004). In terms of cognitive markers, differences in judgment and decision-making may be compared. For example, DeSteno et al. (2000) showed that, when angry, individuals predicted that additional enraging events were more likely to occur (e.g., being wronged by someone) and that sad events were less likely to occur (e.g., losing a friend); but when sad, individuals made the opposite predictions (see also Lerner et al., 2003).

Another limitation involves the subjectivity of the expert raters who evaluated the extent to which the participants' regulation attempts were effective at reducing the emotion and

maintaining intrapersonal and interpersonal well-being. Although gender information of the participants was not provided, the evaluators, both female, may have been biased by their own gender in identifying effective emotion regulation strategies.

Finally, the methodologies employed in the present study, both the discrete emotion regulation measures and the MSCEIT, may not address the full range of assessments and influences on effective emotion regulation. One way of addressing this problem would be to assess discriminant validity with other measures of general emotion regulation, such as the emotion regulation questionnaire (ERQ; Gross and John, 2003). Also, emotional intensity of the event, which may affect which regulation strategies are attempted and are effective, was not measured (Eisenberg et al., 1998; Barret et al., 2001).

This research provides preliminary evidence that research on emotion regulation should address discrete emotions in order to fully utilize the adaptive advantages of the wide-range of emotions that individuals experience and manage. To understand more completely the link between emotion regulation and social functioning, emotions researchers may need to move away from global approaches and toward a discrete emotion framework.

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