

# The Influence of Child Gender Role and Maternal Feedback to Child Stress on the Emergence of the Gender Difference in Depressive Rumination in Adolescence

Stephanie J. Cox and Amy H. Mezulis  
Seattle Pacific University

Janet S. Hyde  
University of Wisconsin—Madison

Extensive research has linked a greater female tendency to ruminate about depressed feelings or mood to the gender difference in depression. However, the developmental origins of the gender difference in depressive rumination are not well understood. We hypothesized that girls and women may be more likely to ruminate because rumination represents a gender-stereotyped coping style that is associated with a more feminine gender role identity, maternal encouragement of emotion expression, and passive coping responses to stress. This study examined whether child self-reported gender role identity and observed maternal responses to child stress mediated the emergent gender difference in depressive rumination in adolescence. Maternal gender role attitudes were further hypothesized to moderate the relationship between child sex and mediating variables. Rumination and gender role identity were assessed in 316 youths and their mothers in a longitudinal study from age 11 to age 15; in addition, 153 mother–child dyads participated in an observational task at age 11 from which maternal responses to a child stressor were coded. Results indicated that greater feminine gender role identity among children and encouragement of emotion expression by mothers at age 11 significantly mediated the association between child sex and the development of depressive rumination at age 15, even after controlling for rumination at age 11. Maternal gender role attitudes significantly moderated the relationship between child sex and maternal encouragement of emotion expression, such that mothers who endorsed more traditional gender role attitudes themselves were particularly likely to encourage emotion expression in their daughters.

*Keywords:* rumination, gender role, maternal behavior, emotion expression

Previous research has consistently demonstrated that females report higher rates of depressive symptoms beginning in the transition to adolescence, typically between the ages of 13 and 18 (Hankin et al., 1998). The cognitive model of depression suggests that individual differences in cognitive responses to stress may predispose individuals to becoming depressed when faced with stressful life events. One such cognitive vulnerability is a ruminative response style (Nolen-Hoeksema, 1991; Nolen-Hoeksema & Girgus, 1994), in which individuals respond to stress with perseverative attention to negative stimuli, including the causes and consequences of negative emotions. Although research on rumination encompasses a wide range of definitions of rumination, the current study focuses on depressive rumination (see Conway, Csank, Holm, & Blake, 2000; Raes, Hermans, Williams, Bijttebier, & Eelen, 2008; Rood, Roelofs, Bögels, Nolen-Hoeksema, & Schouten, 2009). Rumination on sadness and depressed feelings is believed to prolong and exacerbate depressed mood by increasing the salience of the negative emotions being attended to. In fact, several studies have found that depressive rumination is associated

with greater vulnerability to depression; the relationship between depressive rumination and depression has been demonstrated both concurrently and prospectively in adults and adolescents (Burwell & Shirk, 2007; Jose & Brown, 2008; Nolen-Hoeksema, 1998; Park, Goodyer, & Teasdale, 2004; Peled & Moretti, 2007; Roberts, Gilboa, & Gotlib, 1998).

The gender difference in depression has also been hypothesized to be attributable, in part, to a gender difference in depressive rumination (Nolen-Hoeksema, 1991; Nolen-Hoeksema & Girgus, 1994). Women are more likely than men to ruminate about their negative emotions, and this gender difference has also been demonstrated in adolescents (Broderick, 1998; Mezulis, Abramson, & Hyde, 2002; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Nolen-Hoeksema, Parker, & Larson, 1994; Peled & Moretti, 2007). Several studies have found that gender differences in rumination mediate, in part, the gender difference in depression (Roberts et al., 1998; Treynor, Gonzales, & Nolen-Hoeksema, 2003; Wichstrom, 1999).

Although there is extensive support linking the gender difference in depressive rumination with the gender difference in depression, markedly less research has attempted to identify the processes through which this gender difference in rumination emerges. Some researchers have hypothesized that the tendency to ruminate on the causes and consequences of negative emotions is a gender-stereotyped coping behavior that is associated with gender role identity and acquired through traditional socialization processes, such as those suggested by social learning theory (Bro-

---

Stephanie J. Cox and Amy H. Mezulis, Department of Clinical Psychology, Seattle Pacific University; Janet S. Hyde, Department of Psychology, University of Wisconsin—Madison.

Correspondence concerning this article should be addressed to Amy H. Mezulis, Department of Clinical Psychology, Seattle Pacific University, 3307 3rd Avenue West, Suite 107, Seattle, WA 98006. E-mail: mezulis@spu.edu

derick, 1998; Eisenberg, Cumberland, & Spinrad, 1998). The purpose of this study is to examine youth gender role identity and maternal feedback following a stressful event as potential mediators of the association between child sex and the development of depressive rumination in adolescence; we further examine maternal gender role identity as a potential moderator of the hypothesized mediated pathways.

### Defining Depressive Rumination

Rumination may be broadly defined as a passive and perseverative focus on negative stimuli, including sad, depressed, or negative emotions, stressful events, and self-critical or otherwise negative thoughts. In one of the original operationalizations of rumination, Nolen-Hoeksema (1991) defined it broadly as “repetitively focusing on the fact that one is depressed; on one’s symptoms of depression; and on the causes, meanings, and consequences of depressive symptoms” (p. 569). In recent years, researchers have identified many subtypes of rumination differentiated primarily by the content on which an individual is ruminating. One such subtype of rumination has been termed *depressive rumination*, *rumination on sadness*, or *emotion-focused rumination*. This subtype is defined as a passive and perseverative focus on negative emotions, such as sadness and depressed mood (Conway, Csank, Holm, & Blake, 2000; Peled & Moretti, 2007; Raes, Hermans, Williams, Bijttebier, & Eelen, 2008; Rood et al., 2009). This particular type of rumination reflects “rumination over the depression itself and its symptoms, causes, meaning, and consequences” (Segerstrom, Stanton, Alden, & Shortridge, 2003, p. 909). Similarly, rumination has been defined as an involuntary coping response in which one’s attention following a stressor is directed toward “one’s reactions to the stressor” (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000, p. 977). Such emotion-focused rumination is differentiated from reflection, which is defined as a neutrally valenced form of contemplation (Treyner et al., 2003); it is also differentiated from brooding, which is described as thoughts about the meanings of one’s depressive reactions (Treyner et al., 2003), and from rumination about other negative emotions, such as anger (Gerin, Davidson, Christenfeld, Goyal, & Schwartz, 2006; Peled & Moretti, 2007; Sukhodolsky, Golub, & Comwell, 2001).

The current study focuses specifically on this construct of depressive rumination for two reasons. First, extensive evidence has linked rumination about negative emotions, particularly feelings of sadness and depression, with the onset and duration of depression among adolescents (Park et al., 2004; Peled & Moretti, 2007; Silk, Steinberg, & Morris, 2003). Second, adolescent girls report more depressive rumination than boys even when controlling for depressive symptoms (Broderick & Korteland, 2002; Schwartz & Koenig, 1996), and as such, depressive rumination may be most relevant to sex differences in depression and the endorsement of a feminine gender role identity.

### Gender Role Identity and Depressive Rumination

Depressive rumination may be one of a cluster of coping behaviors considered consistent with femininity or a female gender role. As such, depressive rumination may be predicted by broader measures of gender role identification. The expression of some

negative emotions, especially the internalizing emotions of distress and sadness, is perceived as stereotypically feminine and is encouraged in girls (Wupperman & Neumann, 2006), whereas the expression of some other emotions, such as anger, is perceived as stereotypically masculine and is encouraged in boys (Kopper, 1993). Endorsement of a high degree of socialized femininity has been shown to be highly correlated with both rumination and depression (Conway, Giannopoulos, & Stiefenhofer, 1990; Li, DiGiuseppe, & Froh, 2006; Wichstrom, 1999). Masculinity has also been demonstrated to be negatively correlated with rumination, independent of sex, by conferring a more problem-focused coping style (Wupperman, & Neumann, 2006).

The transition to adolescence may also represent a particularly salient developmental period in which to examine the relationship between gender role identity and depressive rumination. Some researchers have suggested that the early adolescent years are associated with increasing social pressure to conform to traditional gender role expectations, and, related to this, an increase in endorsement of traits consistent with gender role (Emmerich & Shepard, 1982; Hill & Lynch, 1983; Wichstrom, 1999). Girls who have a more feminine gender role identity may be particularly likely to display more depressive rumination in the transition to midadolescence, especially in the presence of stress (Jose & Brown, 2008).

### Maternal Encouragement of Emotion Expression and Depressive Rumination

As defined earlier, one component of a ruminative response style is preservative attention to one’s own negative, sad, or depressed affect. Previous research provides some evidence to suggest that parents hold different expectations for the gender appropriateness of emotional expression and both encourage and discourage emotion expression differentially among their sons and daughters (see Eisenberg et al., 1998, for a review). Specifically, boys are often discouraged from expressing negative affect, particularly sad or depressed affect, through minimizing responses by the parent. Minimizing responses include dismissing or ignoring such affect, as well as punitive behaviors that convey to the youth that his expression of negative affect is not appropriate. For example, parents tend to put more pressure on boys to control their displays of negative affect and crying (Eisenberg et al., 1998). Adult men are more likely than adult women to report that they were punished as children for expressing sad or distressed negative affect (Garside & Klimes-Dougan, 2002).

Girls, on the other hand, are often encouraged to express distress, and mothers tend to reward negative emotional expression. In the current study, encouragement of emotional expression was conceptualized as the mother encouraging the child to focus on the child’s feelings after the child experienced a stressful situation in which he or she received negative feedback (a low score) indicating he or she had performed poorly on a computerized math task. Encouragement of emotional expression in stressful situations may also be uniquely related to the promotion of a ruminative response style, especially for girls, who may experience more difficulty in regulating their emotions when encouraged to express a high degree of emotionality (Eisenberg, Fabes, & Murphy, 1996). Mothers are more likely to discuss negative affect with girls and are generally much quicker to respond to displays of negative

emotion among girls than boys (Eisenberg et al., 1998). As a result, the expression of negative affect is intensified (Garside & Klimes-Dougan, 2002; Klimes-Dougan et al., 2007). A greater focus on negative affect, such as that seen in depressive rumination, may develop as a result.

### **Maternal Emotion-Focused Attributions Versus Problem-Focused Coping**

Mothers' responses to stressful events in youths' lives also have great potential to educate children about how to cope with stress. Mothers may promote either a problem-focused coping style or an emotion-focused coping style, through both direct coaching about appropriate coping as well as modeling of coping behaviors. Israelashvili, Gilad-Osovitzki, and Asherov (2006) found a positive correlation between mothers' tendency to use problem-focused coping strategies and their female adolescents' tendency to engage in problem-focused coping. Eisenberg et al. (1996) similarly found that mothers' problem-focused reactions reduced youths' negative arousal and encouraged a positive coping style more than minimizing reactions. Overall, it does appear that parental emphasis on problem-focused coping or instrumental behavior is associated with more constructive coping techniques in general (Eisenberg et al., 1998). Although emotion-focused coping has been linked to maladaptive coping responses (e.g., self-preoccupation; Endler & Parker, 1990), emotion-focused coping has also been demonstrated to include a diversity of coping styles that may be adaptive as well (e.g., instrumentality; Stanton, Kirk, Cameron, & Danoff-Burg, 2000). Because emotion-focused coping is a broad category representing a number of different strategies, we include one component of emotion-focused coping, maternal emotion-focused attributions, in the current study. Maternal emotion-focused attributions are conceptualized as a maternal focus on the child's emotional state as a cause of the child's performance in the stressor task. Identifying emotional states as contributing to a negative outcome may not necessarily be adaptive or maladaptive. It may be that emotion-focused attributions reflect an adaptive capacity to recognize and process emotional states; conversely, these emotion attribution responses may maintain a failure of disengagement from negative stimuli, leading to maladaptive coping styles, such as rumination (Cassano, Perry-Parrish, & Zeman, 2007). As such, the link between maternal emotion-focused attributions and later coping behavior by youths is unclear.

### **Maternal Gender Role Attitudes and Child Depressive Rumination**

Not surprisingly, girls typically report a more feminine gender role identity (Wichstrom, 1999), and this develops in part through modeling and social learning from the same-sex parent (Costos, 1986; Covell & Turnbull, 1982; Smith & Self, 1980). Mothers generally tend to encourage gender-specific behavior such that by age 11, girls' gender role attitudes and aspirations are significantly correlated with their mothers' gender role attitudes (Meyer, 1980). In fact, mothers' gender role attitudes are more important predictors of their daughters' gender role attitudes and identity than other maternal characteristics, such as education or occupation (Smith & Self, 1980). Consequently, girls who have mothers with more traditional gender role attitudes are more likely to endorse a more

feminine gender role identity themselves (Gold & Andres, 1978). Furthermore, it appears that mothers who are more traditional have more sex-biased expectations for their child's behavior (Gervai, Turner, & Hinde, 1995). Mothers who have a more traditional gender role identity and who have daughters should be more likely to encourage gender role specific behaviors when faced with stress. Thus, a more traditional set of maternal gender role attitudes may strengthen the relationship between child gender and child gender role identity and/or the relationship between child gender and maternal encouragement of emotion expression or maternal emotion-focused attributions. However, this may be the case only for girls; studies have demonstrated that mothers' gender socialization practices predict their daughters' gender role identity but not their sons' gender role identity (Costos, 1986). As such, boys would not be expected to endorse a more traditionally male gender role identity on the basis of their mothers' own gender role attitudes, whereas girls would be expected to endorse a more traditionally female gender role identity on the basis of their mothers' more traditional gender role attitudes.

### **The Current Study**

Past research has clearly established a link between gender differences in depressive rumination and the gender difference in depression in adolescence and adulthood. However, we understand little about the developmental mechanisms through which the gender difference in depressive rumination emerges. The purpose of the present study is to present and test a model for the socialization of depressive rumination as a gender-stereotyped coping behavior. In this model, depicted graphically in Figure 1, child gender role identity and maternal encouragement of emotion expression and maternal emotion-focused attributions are hypothesized to serve as mediators of the relationship between gender and depressive rumination. Furthermore, maternal gender role attitudes are hypothesized to moderate the relationship between child gender and the proposed mediators. Specifically, we hypothesize the following:

1. Gender difference in depressive rumination would be apparent at age 15.
2. Endorsement of a more feminine gender role identity by the child would be associated with more depressive rumination, and feminine gender role identity would mediate the association between gender and the development of depressive rumination.
3. Compared with mothers of boys, mothers of girls would be more likely to encourage emotion expression and to make emotion-focused attributions in response to a stressor, and these maternal responses to stress would mediate the association between gender and the development of depressive rumination.
4. Mothers' own gender role attitudes would moderate the relationship between child sex and youth gender role identity, such that girls of mothers endorsing more traditional gender role attitudes would be especially likely to have a feminine gender role identity.

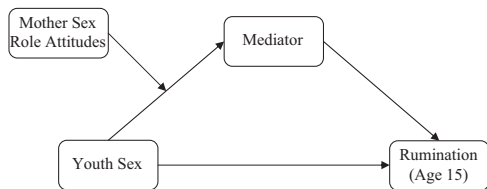


Figure 1. Conceptual model. Hypothesized mediators were child gender identity, maternal encouragement of emotional expression, and maternal emotion-focused attributions.

- Mothers' gender role attitudes would moderate the relationship between child sex and maternal responses to stress, such that mothers endorsing more traditional gender role attitudes would be especially likely to encourage emotion expression and make emotion-focused attributions for their girls but not their boys.

## Method

### Participants

Participants were 316 youths who had participated in a longitudinal study of maternity leave and youth development since birth. Mothers were recruited during pregnancy for participation in the Wisconsin Maternity Leave and Health Project, now renamed the Wisconsin Study of Families and Work. The sample is predominantly Caucasian (95%), residing in urban, suburban, and rural areas in Wisconsin. The current study is based on data collected from youths at ages 11 and 15.

For initial inclusion in the project, mothers had to (a) be over age 18, (b) be between 12 and 21 weeks pregnant, (c) be living with the baby's father (though not necessarily married), (d) have at least one member of the couple working for pay or profit, (e) not be a student, (f) not be unemployed and looking for work, (g) have a telephone to set up interview appointments, (h) speak English well enough to understand an interviewer, and (i) be sufficiently literate to complete self-report questionnaires (see Hyde, Klein, Essex, & Clark, 1995, for additional details). All patients in the second trimester of pregnancy were identified daily by clinic staff, and a recruiter from the Wisconsin Study of Families and Work project approached them individually to explain the study. Of women eligible to participate, 75% agreed to do so. The current study included all participants from the original sample who participated in the relevant assessments through age 15 years; 316 youths (163 girls, 153 boys) and their mothers completed assessments when the youths were the following ages: 1 year, 11 years, and 15 years. Of the 316 youths, 153 (76 girls, 77 boys) also participated in a videotaped mother–youth interaction task at age 11 that provided a behavioral measure of maternal responses to youth stress. Thus, 153 families participated in both the assessments and the videotaped interaction, whereas 163 completed only the assessments, for a total of 316. The 153 families who participated in the videotaped interaction task were drawn randomly from the greater sample. There were no significant differences between the subsample who participated in the videotaped interaction and those who did not in any demographic or study variables.

### Measures

**Maternal responses to failure: Observational measure.** To directly assess maternal negative feedback following a negative event in the child's life, 153 children and their mothers participated in a behavioral task when the child was 11. This task was administered and videotaped in the family's home. Mothers watched while the child completed a stressful math task on a laptop computer. Following a set of practice problems, the math task was programmed to adjust its difficulty so that it was subjectively difficult for every child regardless of math ability. As children completed a series of problems, they heard a cheering sound when they answered a question correctly and a buzzing sound when they answered a question incorrectly. If children missed at least 50% of the problems, they were given a score of two stars out of a possible seven. Of the children, 98% received the low score of two stars; the few children for whom the feedback may not have been perceived as realistic (e.g., they answered a majority of questions correctly) were excluded from analyses. Following the problem set and score, mother–child pairs were given 2 min to "discuss the problem set and the child's score." This discussion period served as the focal period for coding maternal behaviors. Following the discussion period, the dyads completed a subsequent math task, which was adjusted to be subjectively easy for the child. This subsequent task time was not coded for analysis in the current study.

To assess mothers' verbal and nonverbal feedback to the child following the stress task, the discussion period immediately following was coded from videotape for specific statements and behaviors. We used a coding system derived from past research and similar to other observational coding systems assessing maternal responses and child coping (Gentzler, Contreras-Grau, Kerns, & Weimer, 2005). We included common maternal coping strategies found to be associated with emotional distress or potentially depressive rumination in previous studies. Because our conceptualization of rumination emphasizes perseverative attention to negative affect (Conway et al., 2000; Peled & Moretti, 2007; Raes et al., 2008; Rood et al., 2009), we chose to examine strategies that directed attention toward or away from the broad range of negative affective responses children had to the stressor experience. Past research has implicated minimizing responses (Eisenberg et al., 1996) and recurrent self-focused emotion-focused coping (Broderrick, 1998; Nezu & Nezu, 1987; Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 1993; Strauss, Muday, McNall, & Wong, 1997) as potential maternal coping strategies that could foster this style. Research has also indicated that maternal encouragement of emotional expression may be positively related to maladaptive coping outcomes for girls (Eisenberg et al., 1996). Conversely, past research has suggested that a more problem-focused coping style may be associated with less emotional distress (Eisenberg et al., 1996; Nezu & Nezu, 1987; Nolen-Hoeksema, 1991) and, as such, may infer a negative relationship with depressive rumination. Similar to other observational coping systems assessing parental reactions, such as the Systems Analysis of Parent–Child Interaction (Martin, Miller-Johnson, Kitzmann, & Emery, 1998), the nonverbal and verbal cues in the mothers' behavior—such as gestures, tone of voice, language, and body positioning—were coded in this task. The following variables were coded:

**1. Emotion minimization.** Emotion minimization assessed the degree to which the mother minimized, ignored, or criticized the child's expressed emotion. Examples of minimizing behaviors included ignoring the child's emotional state, expressly telling the child not to feel sad or upset, or redirecting the child's attention away from his or her distress. For instance, the mother may have said, "You're just overreacting" or "Don't make a big deal out of it; you're being a baby."

**2. Encouragement of emotion expression.** Encouragement of emotion expression assessed the degree to which the mother encouraged the child to focus on his or her feelings. Examples of encouragement of emotion expression included the mother asking the child how he or she felt and encouraging the child to discuss his or her feelings. The emotions encouraged were a result of the task. For instance, the mother may ask, "How did you feel about that test?" or "Are you feeling sad? How come?"

**3. Maternal emotion-focused attributions.** Maternal emotion-focused attributions assessed the degree to which the mother focused attention on feelings or emotions as a result of the child's performance on the math task or as salient in changing performance for the next math task the child would complete. Examples included making emotion-based attributions for the child's score or suggesting that discussing or changing emotions would improve the child's score. For instance, the mother may suggest, "You were really nervous taking that test. When you get nervous you don't do as well" or "If you are sad about your score, you're not going to be able to concentrate on the next task."

**4. Problem-focused coping.** Problem-focused coping assessed the degree to which the mother directed the child's attention to realistic changes the youth could make to improve his or her performance on the task. Examples of problem-focused coping included the mother helping or encouraging the child to understand the math problems better, the mother providing concrete and practical suggestions about changes the child could make to improve his or her score, and working with the child to practice the math problems. For instance, the mother may say, "It seems like that math strategy was tricky. Let's go over it again" or "Be sure to use the math strategy in this type of problem next time because you'll get the correct answer."

All variables were coded on a 5-point Likert scale indicating how much the mother engaged in the target behavior, with scores ranging from 1 (*not at all*) to 5 (*extremely*). Raters participated in more than 100 hr of training and rating of pilot tapes during the training period. Raters had to demonstrate reliability, with a criterion set at .80 categorical agreement with the trainer (lead author). During coding, the percentage of agreement between raters was computed. Kappa was used to calculate categorical agreement with interrater reliability at .84.

**Maternal gender role attitudes.** Mothers reported their own gender role attitudes with the Attitudes Toward Sex-Roles Scale (Larsen & Long, 1988) at the initial assessment time, when the child was an infant. This 20-item Likert-type scale measures traditional and egalitarian attitudes about gender roles. Examples of items are "I would not allow my son to play with dolls" and "Men who cry have weak character." Higher scores on this measure indicate more traditional sex-role attitudes. The measure is reported to have good internal consistency and test-retest reliability from .88 to .93 (Larsen & Long, 1988). Additionally, studies that have used items correlated with the Attitudes Toward Sex-

Roles Scale have demonstrated the stability of gender role attitudes over a 25-year period (Judge & Livingston, 2008). Similar studies have found that gender role attitudes remain considerably stable even throughout major developmental transitions (Fan & Marini, 2000). The internal consistency coefficient for this sample was .84.

**Child gender role identity.** Child gender role was assessed at age 11 with the short form of the Child Sex Role Inventory (Boldizar, 1991). Examples of masculine items are "I can take control of a lot of the kids in my class" and "I am a leader among my friends." Examples of feminine items are "I am a kind and caring person" and "I like to do things that girls and women like to do." Both scales were reported to be internally reliable,  $\alpha = .78$  and  $.89$ , respectively (Boldizar, 1991). All ratings are made on 4-point scales, from 1 (*not at all true of me*) to 4 (*very true of me*). Internal consistencies at age 11 were .75 for girls, .70 for boys, and .80 for the full sample. Internal consistencies at age 15 were .77 for girls, .59 for boys, and .71 for the full sample.

**Child depressive rumination.** Depressive rumination was assessed at ages 11 and 15 with a short form of the Ruminative Response Scale of the Response Style Questionnaire (Nolen-Hoeksema & Morrow, 1991). The original Ruminative Response Scale includes 22 items in which respondents are asked how often they engage in ruminative responses when they feel sad or down, with responses rated on a 4-point Likert scale from 1 (*almost never*) to 4 (*almost always*). In the current study, we used five items specifically assessing rumination about negative affect. Sample items included, "When I feel sad or down, I think about how alone I feel" and "When I feel sad or down, I think about how hard it is to concentrate." The five items utilized were selected on the basis of consultation with S. Nolen-Hoeksema (personal communication, 2001) at the time of study design as representing a selection of rumination items that excluded automatic negative thoughts and instead emphasized rumination about sad, depressed, or down affect. The exclusion of items that include negative automatic thoughts is preferable because it creates a purer measure of depressive rumination that is focused on the affective component of depressive symptoms, rather than the cognitive component. Since the time of data collection, important considerations have come about in the measurement of rumination (Treyner, Gonzales, & Nolen-Hoeksema, 2003). All five items represent symptom-focused items later identified by Treyner et al. (2003) as having a potential content overlap with depression symptoms. Because of specific selection of the five items for inclusion in the study, we did not have access to the full 22-item Ruminative Responses Scale to include other subcomponents of rumination at the time of analysis. For this reason, we control for initial levels of depressive symptoms to minimize the potential for overlap between the constructs. Internal consistencies for the five items were moderate to strong. Coefficient alphas at age 11 were .69 for girls, .69 for boys, and .69 total. Internal consistencies at age 15 were .78 for girls, .80 for boys, and .79 total.

**Children's depressive symptoms.** Children's depressive symptoms were assessed at ages 11 and 15 with the Children's Depression Inventory (CDI; Kovacs, 1985) to control for depressive symptoms in all statistical analyses. The CDI is a 27-item self-report inventory, which inquires about the presence of depressive symptoms within the past 2 weeks. Each item contains three statements; participants are asked to select the statement that best describes them in the previous 2 weeks. The CDI was designed for use with

youths between the ages of 8 and 17. Total scores on the CDI can range from 0 to 54, with higher scores indicating more severe depressive symptoms. The CDI has repeatedly demonstrated excellent internal consistency (alpha reliability ranges from .80 to .87), test-retest reliability, and predictive and construct validity, especially in community samples (Blumberg & Izard, 1986; Kovacs, 1981, 1985). The internal consistency of the full CDI for our sample was high ( $\alpha = .84$ ) at age 11.

## Results

### Descriptive Analyses

Correlations among study variables are presented in Table 1. Means, standard deviations, and gender comparisons for all study variables are presented in Table 2. There was no significant gender difference in depressive rumination at age 11, but by age 15 girls reported significantly more depressive rumination than boys. Girls also reported a significantly more feminine gender role identity than boys at age 11. There were no sex differences in masculine gender role identity and no correlation between masculinity and rumination. In the behavioral task, mothers of girls were significantly more likely to encourage emotion expression and make emotion-focused attributions than mothers of boys. Conversely, mothers of girls were marginally less likely to minimize emotion expression ( $p = .06$ ). Mothers of boys and girls did not differ in their encouragement of problem-solving techniques. Finally, mothers' own gender role attitudes were not associated with the sex of their child. As expected, there were modest but significant concurrent correlations between child depressive symptoms and rumination; child depressive symptoms at age 11 were entered into all analyses as a control variable.

### Mediator Analyses

Given our findings of sex differences in child gender role identity, maternal encouragement of emotion, maternal emotion-focused attributions, and maternal minimization of emotion, we examined these variables as potential mediators of the association between sex and the development of depressive rumination. Anal-

yses were performed on the subsample of 153 families who participated in the videotaped interaction task. In regression analyses, we controlled for initial levels of depressive rumination and depressive symptoms at age 11. We used hierarchical linear regression to examine each potential mediator separately. Depressive rumination at age 15 was the outcome variable. Depressive symptoms at age 11 and rumination at age 11 were entered in the first step, child sex in the second step, and the hypothesized mediator in the third step.

Mediation was evaluated with the  $z'$  test, which is comparable to the Sobel product of coefficients test. The  $z'$  test (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002) computes a  $z'$  statistic as the product of the coefficient estimates for each path in the indirect effect divided by their standard error. Critical values for the  $z'$  test were evaluated with the empirical cutoffs derived by MacKinnon et al. (2002); for our sample size, the empirical cutoffs are  $\pm .72$  at an  $\alpha = .05$  significance level and  $\pm 1.08$  at an  $\alpha = .01$  significance level. We also report values for the  $t$  statistic for each indirect path and their associated significance values.

Results are summarized in Table 3. The  $z'$  test of mediation for child femininity was significant. Child femininity accounted for 20.50% of the association between child sex and age 15 depressive rumination. Maternal encouragement of emotion expression also demonstrated evidence of significant mediation, accounting for 18.26% of the association between child sex and age 15 depressive rumination. Neither maternal emotion-focused attributions nor minimization of emotion expression significantly mediated the association between child sex and age 15 depressive rumination.

### Do Maternal Gender Role Attitudes Moderate the Relationship Between Child Sex and Mediator Variables?

Next, we examined our hypothesis that maternal gender role attitudes would moderate the relationship between child sex and the mediating variables. Traditionally, to test a moderated mediated relationship, researchers have split collected data into low and high data sets according to the moderator variable and have then run separate mediational analyses to examine whether the mod-

Table 1  
Correlations Among Study Variables by Gender (Girls *Italicized*)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Rumination age 11	—	.311**	.021	-.123	-.062	.542**	.310**	-.163	.167	.094	-.028
2. Rumination age 15	.207*	—	.002	.016	.140	.217*	.454**	.027	.224	.168	-.156
3. Mom ATSR <sup>a</sup>	-.034	-.133	—	.074	-.027	-.169*	-.085	-.224*	.320**	.277*	-.116
4. CSRI fem	.059	.181*	.112	—	.419**	-.201	-.042	.211	-.190	-.139	.106
5. CSRI mas	-.115	.105	.083	.434**	—	-.096	.031	.078	-.135	-.022	.147
6. CDI age 11	.330**	.108	-.095	-.128	-.286**	—	.478**	-.182	.075	.020	-.094
7. CDI age 15	.013	.357**	.008	.018	-.035	.190*	—	.068	.077	.080	-.209
8. Maternal minimizing behaviors	-.054	-.094	.048	-.197	.002	-.010	.085	—	-.489**	-.401**	-.152
9. Maternal emotion encouragement	.175	.251	-.073	.074	.029	-.012	.076	-.587**	—	.810**	-.228*
10. Maternal emotion-focused coping	.224	-.093	-.047	.094	.003	.078	-.118	-.199	.274*	—	-.133
11. Maternal problem-focused coping	-.108	.050	.084	.131	-.056	-.006	-.170	.089	-.257*	-.202	—

Note. ATSR = Attitudes Toward Sex Roles; CSRI fem = Child Sex Role Inventory for femininity; CSRI mas = Child Sex Role Inventory for masculinity; CDI = Children's Depression Inventory.

<sup>a</sup> Indicates time of assessment at infancy of youths.

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

Table 2  
Means, Standard Deviations (in Parentheses), and Effect Sizes for Study Variables by Gender

Variable	Boys	Girls	<i>t</i>	<i>d</i>
Children				
Rumination (age 11)	1.80 (0.52)	1.82 (0.54)	0.21	.02
Rumination (age 15)	1.84 (0.60)	2.09 (0.55)	-3.76**	.42
Femininity	2.93 (0.50)	3.34 (0.43)	-7.79**	.89
Mothers				
Gender role attitudes	88.04 (9.25)	86.86 (10.22)	1.23	.21
Maternal response to failure				
Minimizing	2.94 (0.98)	2.66 (0.97)	1.76 <sup>+</sup>	-.29
Encouragement of emotion	1.57 (0.97)	2.12 (1.34)	-2.89**	.48
Emotion-focused attributions	1.45 (0.99)	1.92 (1.40)	-2.38**	.40
Problem-focused coping	3.21 (1.07)	3.34 (1.00)	-0.80	.13

<sup>+</sup>  $p < .10$ . \*\*  $p < .01$ .

erator had a significant effect. The major drawback to this method of analysis is that it makes meaningful statistical comparison between levels of the moderator nearly impossible. Recent literature on statistics in the social sciences (Edwards & Lambert, 2007) suggests that it is possible to examine a moderator directly within a mediated relationship by creating a regression equation that incorporates both the mediator and the moderator, allowing the researcher to plug in different levels of the moderator to examine the effects on the mediated relationship. Figure 1 illustrates the hypothesized moderated mediated relationship between child sex and the hypothesized mediators.

Traditional tests of mediation rely on the assumption that the data are normally distributed (Edwards & Lambert, 2007). However, because moderated mediated regression equations rely on the multiplication of coefficients, the assumption of normal distribution becomes unreliable. To overcome this difficulty, Edwards and Lambert (2007) recommended using a bootstrapping procedure. Bootstrapping involves random sampling with replacement from the original data set to create a sample of 1,000 coefficients. Using functions of any spreadsheet program, we then locate the confidence intervals around the results and pinpoint *t* values and significance levels for the coefficients for each selected level of moderator within the mediated relationship. We can also identify the differences between levels of the moderator and determine if the differences are significantly different.

To examine whether maternal gender role attitudes moderated the demonstrated mediated relationships (between child sex and child gender role and child sex and maternal encouragement of emotion expression), we created regression equations on the basis

of coefficients estimated from 1,000 bootstrap samples. This allowed us to create a set of path diagrams illustrating the model at low (one standard deviation below the mean) and high (one standard deviation above the mean) levels of traditional maternal gender role attitudes. Because we used the same data and the same regression equations, we were also able to directly compare the low and high traditional maternal gender role attitude models to each other to determine whether the differences between the two models were significantly different.

Results indicated that maternal gender role attitudes significantly moderated the first stage of the mediated relationship from child sex to maternal encouragement of emotion expression,  $t = 2.42$ ,  $p = .016$ . The final model for child sex, maternal gender role attitudes, maternal encouragement of emotion expression, and child rumination is shown in the lower frame of Figure 2 and displayed graphically in Figure 3. Figure 3 depicts the moderating effect of maternal gender role attitudes on the association between child sex and maternal encouragement of emotion, using one standard deviation cutoffs to plot the interaction. This finding supports our hypothesis that not only are mothers more likely to encourage the expression of negative affect among daughters than sons', but mothers with more traditional gender role attitudes are especially likely to encourage such emotion expression in their daughters; in turn, this gender-specific focus on negative affect mediates the association between child sex and the development of depressive rumination.

Contrary to our hypotheses, we did not find that mothers with more traditional gender role attitudes were more likely to have daughters with highly feminine gender role identities themselves.

Table 3  
Path Coefficients and Unstandard Errors (in Parentheses) in the Mediation Models

Mediator	Gender on outcome without mediator	Gender on mediator ( $\alpha$ )	Mediator on outcome ( $\beta$ )	Gender on outcome with mediator	<i>t</i> test		<i>z'</i> mediation	% mediation
					( $\alpha$ )	( $\beta$ )		
Child femininity	.16 (.04)	.21 (.03)	.26 (.07)	.13 (.04)	7.97**	3.66**	3.32**	20.50
Maternal minimizing	.16 (.06)	-.10 (.08)	-.04 (.06)	.11 (.06)	-1.19	-0.72	0.62	—
Maternal emotional encouragement	.16 (.06)	.22 (.10)	.11 (.05)	.09 (.06)	2.29*	2.38*	1.65*	18.26
Maternal emotion attributions	.16 (.06)	.19 (1.00)	.02 (.05)	.12 (.06)	1.87 <sup>+</sup>	0.32	0.01	—

<sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ .

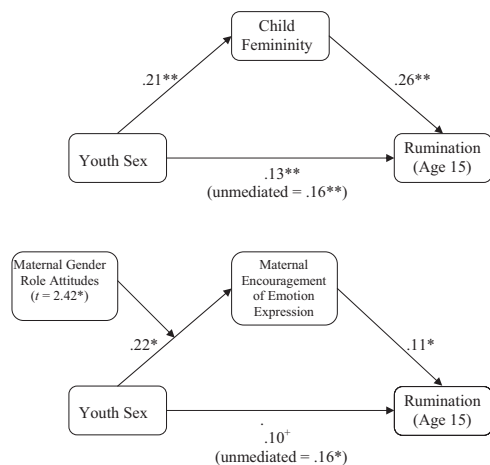


Figure 2. Final significant model paths (unstandardized coefficients).  
<sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ .

The test of the first-stage moderation of the relationship between child sex and child gender role identity was not significant ( $t = -0.642$ ,  $p = .521$ ). Thus, the final model for sex, child femininity, and rumination is represented in the upper frame of Figure 2.

## Discussion

The purpose of the present study was to determine if gender differences in depressive rumination may be accounted for in part by socialization processes of gender-stereotyped coping behavior. We tested this hypothesis by examining children's own gender role identity as a potential mediator of the association between child sex and the development of depressive rumination. We also examined whether mothers provided gender-specific feedback to children about the appropriateness of emotion expression and made attributions to child emotions in response to stress and, if so, if these gender differences in maternal feedback mediated the association between child sex and the development of depressive rumination. This study makes a novel contribution in delineating specific child, mother, and mother-child mechanisms by which the gender difference in depressive rumination emerges. Next, we summarize our findings and their contribution to our understanding of rumination during adolescence.

Consistent with other studies, we found an emergent gender difference in depressive rumination in adolescence. At age 11, boys and girls reported comparable levels of depressive rumination, but by age 15 girls reported significantly more depressive rumination than did boys. The timing of this emergent gender difference in depressive rumination is consistent with the emergent gender difference in depression between ages 13 and 15 and supports recent hypotheses regarding the role of rumination in explaining the emergent gender difference in depression (see, e.g., Hyde, Mezulis, & Abramson, 2008). Our findings also contribute to a growing body of literature suggesting that the gender difference in rumination emerges in the transition to adolescence (Jose & Brown, 2008). Although we did not examine the predictive relationship between depressive rumination and depression in the present study, there is extensive past research demonstrating a significant association between rumination and depressive symp-

oms both concurrently and prospectively in adults (Treyner et al., 2003) and adolescents (Burwell & Shirk, 2007).

Not surprisingly, gender differences in sex-role identification were also found, with girls reporting greater femininity than boys. Girls were more likely to endorse items that conveyed feminine traits or characteristics, such as being compassionate, eager to soothe hurt feelings, tender, gentle, yielding, sympathetic, sensitive to the needs of others, and understanding.

Although our findings of greater feminine gender role identity among preadolescent girls are consistent with other studies, ours is the first to identify this gender difference as preceding and predicting the emergence of the gender difference in depressive rumination. We found that the gender difference in feminine gender role identity at age 11 mediated a significant portion of the association between sex and depressive rumination at age 15, even after controlling for initial levels of rumination and depression symptoms. Thus, girls with a more feminine gender role identity were more likely than girls with a less feminine gender role identity to become more ruminative in the transition to midadolescence. Not only does this finding reinforce previous findings that depressive rumination is, in fact, a sex-linked behavior (Strauss et al., 1997), it also supports the hypothesis that conformity to sex-linked behaviors, such as depressive rumination, may increase in the transition to midadolescence (Wichstrom, 1999).

We also found intriguing evidence that mothers play a significant role in socializing a ruminative coping style among their children, especially among their daughters. Consistent with our hypotheses, mothers did give sex-specific, differential feedback to sons compared with daughters. Mothers of daughters were more likely to encourage emotion expression and to make emotion-focused attributions, and they were somewhat less likely to minimize emotionality.

Our findings contribute to a large body of knowledge on parental socialization of child emotion expression and coping. Although mothers may believe they are being supportive in minimizing a child's emotional response, research indicates that minimizing reactions are related with a number of negative outcomes, including avoidant coping and low social functioning (Eisenberg, Fabes, & Murphy, 1996). As such, parents tend to be unaware of their

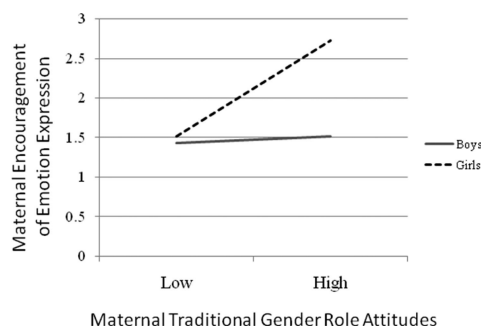


Figure 3. The effect of maternal encouragement of emotional expression on the association between sex and maternal gender role attitudes. Maternal emotional expression was coded on a 5-point Likert scale indicating how much the mother engaged in emotional expression, with scores ranging from 1 (*not at all*) to 5 (*extremely*). For the purposes of graphing the interaction, low and high maternal gender role attitudes were defined as one standard deviation above or below the mean on this variable.

differential response to boys versus girls and do not report using different strategies in their socialization of emotion (Eisenberg et al., 1998). Nevertheless, mothers may still be unknowingly promoting more stereotypically feminine response styles (Conway et al., 1990; Wupperman & Neumann, 2006). In our study, mothers of girls were particularly likely to encourage emotional expression. Mothers attempted to draw out emotions in their girls and to elicit emotional responses by asking questions such as "How does that make you feel?" or "Are you feeling okay about that?" Mothers of girls also tended to respond to the expression of negative affect by their child with greater attention and support. In turn, this maternal emphasis on emotion expression predicted the child's later tendency to engage in depressive rumination.

Contrary to our hypothesis, we found that mothers used a problem-focused approach equally with their sons and daughters. This is discrepant with previous research, which implicates problem-focused coping as a traditionally more masculine trait (Wupperman & Newman, 2006). We believe that we did not find a gender difference in problem-focused coping as a result of the highly structured nature of the observational task. Pairs were given instructions to discuss why the child received his or her particular score, and when they were finished, they could work on more practice problems if they wished. Mothers may have taken this suggestion as a cue to direct the child back to working on the task. This behavior may have inflated the problem-focused coping category. Furthermore, mothers tended to encourage problem-focused coping more than any other strategy. Because problem-focused coping is associated with more constructive coping (Eisenberg et al., 1998), it is important to note that mothers are not depriving their daughters of problem-solving socialization. Although the overall incidence of maternal encouragement of emotion expression was low compared with encouragement of problem-focused coping, this type of maternal feedback appeared to be highly salient for girls. Although there are undoubtedly benefits to the encouragement of emotion expression, such as improved social functioning through increased interaction (Fredrickson, 1998; Gross & John, 2003), here we found that maternal encouragement of emotion expression was directly predictive of more depressive rumination in children and, in fact, mediated nearly one fifth of the association between sex and the development of depressive rumination. Therefore, although mothers may believe that they are helping their daughters process their negative experience and their negative affect by directing attention to their daughters' feelings, such parenting behaviors may have the unintended consequence of increasing their daughters' depression vulnerability. Not surprisingly, mothers who themselves endorsed more traditional gender role attitudes were especially likely to encourage their daughters to express emotion. This support of the hypothesized moderated mediation model provides support for our overall premise that depressive rumination results, in large part, from socialization processes in which girls are directly and indirectly encouraged to conform to traditional sex-role behaviors.

Placing our findings in the broader picture of emotion socialization, it is important to note the multiple pathways that can lead to the development of coping behaviors in general and to depressive rumination in particular. The current study implicates maternal socialization processes as one important pathway, but other pathways play a role as well, including the child's own active participation in the socialization process (Williams, Goodman, &

Green, 1985) and socialization with same sex peers (Carter & McCloskey, 1983). For instance, a small number of studies recently examined the interactive experience of peers in the promotion of corumination, which has also been linked to the promotion of depressive symptoms in adolescence (Rose, 2002; Rose, Carlson, & Waller, 2007; Starr & Davila, 2009). Finally, it is important to note the transactional nature of these socialization processes. Mothers and daughters or pairs of friends may reciprocally influence one another to promote the expression of emotion, which in turn may promote higher levels of emotionality or rumination, leading to a cycle promoting depressive symptoms.

### Limitations and Future Directions

The current study builds on past research in its use of observational assessments to determine the specific behaviors that mothers demonstrate in response to children's negative affect and stress and how these behaviors promote depressive rumination. Future studies should also draw on multiple modes of assessment, including observation, to investigate socialization interactions. Although this study attempted to create a naturalistic environment by conducting observations in the home, mother-youth dyads may have been aware of the presence of the video camera, and this undoubtedly influenced the behaviors we observed. Our sample was also predominantly Caucasian, which may limit generalizability of our findings. Additionally, we used an observational task that was established a priori to provide a standard stressful experience, but our task did not allow us to determine whether it was experienced as equally stressful by all youths. Hence, alternative explanations may be possible. Because we assumed the task was stressful, we did not differentiate among the children's emotional responses to the failure in terms of distress, frustration, sadness, or disappointment. In future studies, researchers may want to evoke or code specific child emotions, because different child emotional responses may evoke different maternal feedback and thus may have different developmental outcomes. In other studies, researchers may want to include various types of tasks. Our task may be considered stereotypically masculine, and it is unclear whether mothers responded with greater encouragement of emotional expression with their daughters than they would have in a more stereotypically feminine task. Finally, in the current study, we examined depressive rumination very narrowly defined as rumination on sad, depressed affect. As such, the use of our measure does not speak to the association between gender role and other aspects of rumination. For instance, future research may want to consider the association between brooding and gender role or other important subtypes of rumination.

In conclusion, this study suggests that girls are, in fact, socialized to ruminate more as a result of youths' gender role identification and mothers' responses to expressions of negative affect. This finding also provides one key to understanding the emergence of the gender difference in depression. Identifying pre-existing vulnerabilities, such as a depressive ruminative response style that make girls particularly vulnerable to depression, is tremendously important for curtailing the greater depression that girls experience. Further exploration of this process is needed to understand the differential processes of socialization that boys and girls encounter and how this interaction affects psychological health and well-being throughout development.

## References

- Blumberg, S. H., & Izard, C. E. (1986). Discriminating patterns of emotions in 10- and 11-year-old children's anxiety and depression. *Journal of Personality and Social Psychology, 51*, 852–857. doi:10.1037/0022-3514.51.4.852
- Boldizar, J. P. (1991). Assessing sex typing and androgyny in children: The Children's Gender Role Inventory. *Developmental Psychology, 27*, 505–515. doi:10.1037/0012-1649.27.3.505
- Broderick, P. C. (1998). Early adolescent gender differences in the use of ruminative and distracting coping strategies. *Journal of Early Adolescence, 18*, 173–191. doi:10.1177/0272431698018002003
- Broderick, P. C., & Kortland, C. (2002). Coping styles and depression in early adolescence: Relationship to gender, gender role, and implicit beliefs. *Sex Roles, 46*, 201–213. doi:10.1023/A:1019946714220
- Burwell, R., & Shirk, S. (2007). Subtypes of rumination in adolescence: Associations between brooding, reflection, depressive symptoms, and coping. *Journal of Clinical Child and Adolescent Psychology, 36*, 56–65. doi:10.1207/s15374424jccp3601\_6
- Carter, D., & McCloskey, L. (1983). Peers and the maintenance of sex-typed behavior: The development of children's conceptions of cross-gender behavior in their peers. *Social Cognition, 2*, 294–314.
- Cassano, M., Perry-Parrish, C., & Zeman, J. (2007). Influence of gender on parental socialization of children's sadness regulation. *Social Development, 16*, 210–231. doi:10.1111/j.1467-9507.2007.00381.x
- Connor-Smith, J., Compas, B., Wadsworth, M., Thomsen, A., & Saltzman, H. (2000). Responses to stress in adolescence: Measurement of coping and involuntary stress responses. *Journal of Consulting and Clinical Psychology, 68*, 976–992. doi:10.1037/0022-006X.68.6.976
- Conway, M., Csank, P. A. R., Holm, S., & Blake, C. (2000). On assessing individual differences in rumination on sadness. *Journal of Personality Assessment, 75*, 404–425. doi:10.1207/S15327752JPA7503\_04
- Conway, M., Giannopoulos, C., & Stiefenhofer, K. (1990). Response styles to sadness are related to sex and sex-role orientation. *Sex Roles, 22*, 579–583. doi:10.1007/BF00288236
- Costos, D. (1986). Sex role identity in young adults: Its parental antecedents and relation to ego development. *Journal of Personality and Social Psychology, 50*, 602–611. doi:10.1037/0022-3514.50.3.602
- Covell, K., & Turnbull, W. (1982). The long-term effects of father absence in childhood on male university students' sex role identity and personal adjustment. *Journal of Genetic Psychology, 141*, 271.
- Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods, 12*, 1–22. doi:10.1037/1082-989X.12.1.1
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry, 9*, 241–273. doi:10.1207/s15327965pli0904\_1
- Eisenberg, N., Fabes, R. A., & Murphy, B. C. (1996). Parents' reactions to children's negative emotions: Relations to children's social competence and comforting behavior. *Child Development, 67*, 2227–2247. doi:10.2307/1131620
- Emmerich, W., & Shepard, K. (1982). Development of sex-differentiated preferences during late childhood and adolescence. *Developmental Psychology, 18*, 406–407. doi:10.1037/0012-1649.18.3.406
- Endler, N., & Parker, J. (1990). State and trait anxiety, depression and coping styles. *Australian Journal of Psychology, 42*, 207–220. doi:10.1080/00049539008260119
- Fan, P., & Marini, M. (2000). Influences on gender-role attitudes during the transition to adulthood. *Social Science Research, 29*, 258–283. doi:10.1006/ssre.1999.0669
- Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*, 300–319. doi:10.1037/1089-2680.2.3.300
- Garside, R. B., & Klimes-Dougan, B. (2002). Socialization of discrete negative emotions: Gender differences and links with psychological distress. *Sex Roles, 47*, 115–128. doi:10.1023/A:1021090904785
- Gentzler, A., Contreras-Grau, J., Kerns, K., & Weimer, B. (2005). Parent-child emotional communication and children's coping in middle childhood. *Social Development, 14*, 591–612. doi:10.1111/j.1467-9507.2005.00319.x
- Gerin, W., Davidson, K. W., Christenfeld, N. J. S., Goyal, T., & Schwartz, J. E. (2006). The role of angry rumination and distraction in blood pressure recovery from emotional arousal. *Psychosomatic Medicine, 68*, 64–72. doi:10.1097/01.psy.0000195747.12404.aa
- Gervai, J., Turner, P., & Hinde, R. (1995). Gender-related behaviour, attitudes, and personality in parents of young children in England and Hungary. *International Journal of Behavioral Development, 18*, 105–126.
- Gold, D., & Andres, D. (1978). Developmental comparisons between ten-year-old children with employed and non-employed mothers. *Child Development, 49*, 75–84. doi:10.2307/1128595
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348–362. doi:10.1037/0022-3514.85.2.348
- Hankin, B., Abramson, L., Moffitt, T., Silva, P., McGee, R., & Angell, K. (1998). Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology, 107*, 128–140. doi:10.1037/0021-843X.107.1.128
- Hill, J. P., & Lynch, M. E. (1983). The intensification of gender related role expectations during early adolescence. In J. Brooks-Gunn & A. Petersen (Eds.), *Girls at puberty: Biological and psychosocial perspectives* (pp. 201–208). Hillsdale, NJ: Erlbaum.
- Hyde, J. S., Klein, M. H., Essex, M. J., & Clark, R. (1995). Maternity leave and women's mental health. *Psychology of Women Quarterly, 19*, 257–258. doi:10.1111/j.1471-6402.1995.tb00291.x
- Hyde, J. S., Mezulis, A. H., & Abramson, L. Y. (2008). The ABCs of depression: Integrating affective, biological, and cognitive models to explain the emergence of the gender difference in depression. *Psychological Review, 115*, 291–313. doi:10.1037/0033-295X.115.2.291
- Israelashvili, M., Gilad-Osovitzki, S., & Asherov, J. (2006). Female adolescents' suicidal behavior and mothers' ways of coping. *Journal of Mental Health, 15*, 533–542. doi:10.1080/09638230600902567
- Jose, P., & Brown, I. (2008). When does the association between gender and rumination begin? Gender and age differences in the use of rumination by adolescents. *Journal of Youth and Adolescence, 37*, 180–192. doi:10.1007/s10964-006-9166-y
- Judge, T. A., & Livingston, B. A. (2008). Is the gap more than gender? A longitudinal analysis of gender, gender role orientation, and earnings. *Journal of Applied Psychology, 93*, 994–1012. doi:10.1037/0021-9010.93.5.994
- Klimes-Dougan, B., Brand, A. E., Zahn-Waxler, C., Usher, B., Hastings, P. D., Kendziora, K., & Garside, R. B. (2007). Parental emotion socialization in adolescence: Differences in sex, age and problem status. *Social Development, 16*, 326–342. doi:10.1111/j.1467-9507.2007.00387.x
- Kopper, B. (1993). Role of gender, sex role identity, and Type A behavior in anger expression and mental health functioning. *Journal of Counseling Psychology, 40*, 232–237. doi:10.1037/0022-0167.40.2.232
- Kovacs, M. (1981). Rating scales to assess depression in school-aged children. *Acta Paedopsychiatrica: International Journal of Child and Adolescent Psychiatry, 46*, 305–315.
- Kovacs, M. (1985). The Children's Depression Inventory (CDI). *Psychopharmacology Bulletin, 21*, 995–998.
- Larsen, K., & Long, E. (1988). Attitudes toward sex-roles: Traditional or egalitarian? *Sex Roles, 19*, 1–12. doi:10.1007/BF00292459

- Li, C., DiGiuseppe, R., & Froh, J. (2006). The roles of sex, gender, and coping in adolescent depression. *Adolescence, 41*, 409–415.
- MacKinnon, D. P., Lockwood, C. M., Hoffmann, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*, 83–104. doi:10.1037/1082-989X.7.1.83
- Martin, M., Miller-Johnson, S., Kitzmann, K., & Emery, R. (1998). Parent-child relationships and insulin-dependent diabetes mellitus: Observational ratings of clinically relevant dimensions. *Journal of Family Psychology, 12*, 102–111. doi:10.1037/0893-3200.12.1.102
- Meyer, B. (1980). The development of girls' sex-role attitudes. *Child Development, 51*, 508–514. doi:10.2307/1129285
- Mezulis, A. H., Abramson, L. Y., & Hyde, J. S. (2002). Domain specificity of gender differences in rumination. *Journal of Cognitive Psychotherapy, 16*, 421–434. doi:10.1891/088983902780935614
- Nezu, A. M., & Nezu, C. M. (1987). Psychological distress, problem solving, and coping reactions: Sex role differences. *Sex Roles, 16*, 205–214. doi:10.1007/BF00289650
- Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology, 100*, 569–582. doi:10.1037/0021-843X.100.4.569
- Nolen-Hoeksema, S. (1998). The other end of the continuum: The costs of rumination. *Psychological Inquiry, 9*, 216. doi:10.1207/s15327965pli0903\_5
- Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender difference in depression during adolescence. *Psychological Bulletin, 115*, 424–443. doi:10.1037/0033-2909.115.3.424
- Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: The 1989 Loma Prieta earthquake. *Journal of Personality and Social Psychology, 61*, 115–121. doi:10.1037/0022-3514.61.1.115
- Nolen-Hoeksema, S., Morrow, J., & Fredrickson, B. L. (1993). Response styles and the duration of episodes of depressed mood. *Journal of Abnormal Psychology, 102*, 20–28. doi:10.1037/0021-843X.102.1.20
- Nolen-Hoeksema, S., Parker, L. E., & Larson, J. (1994). Ruminative coping with depressed mood following loss. *Journal of Personality and Social Psychology, 67*, 92–104. doi:10.1037/0022-3514.67.1.92
- Park, R. J., Goodyer, I. M., & Teasdale, J. D. (2004). Effects of induced rumination and distraction on mood and overgeneral autobiographical memory in adolescent major depressive disorder and controls. *Journal of Child Psychology and Psychiatry, 45*, 996–1006. doi:10.1111/j.1469-7610.2004.t01-1-00291.x
- Peled, M., & Moretti, M. M. (2007). Rumination on anger and sadness in adolescence: Fueling of fury and deepening of despair. *Journal of Clinical Child and Adolescent Psychology, 36*, 66–75. doi:10.1207/s15374424jccp3601\_7
- Raes, F., Hermans, D., Williams, J., Bijttebier, P., & Eelen, P. (2008). A "Triple W"-model of rumination on sadness: Why am I feeling sad, what's the meaning of my sadness, and wish I could stop thinking about my sadness (but I can't!). *Cognitive Therapy and Research, 32*, 526–541. doi:10.1007/s10608-007-9137-y
- Roberts, J. E., Gilboa, E., & Gotlib, I. E. (1998). Ruminative response style and vulnerability to episodes of dysphoria: Gender, neuroticism, and episode duration. *Cognitive Therapy Research, 22*, 401–423. doi:10.1023/A:1018713313894
- Rood, L., Roelofs, J., Bögels, S. M., Nolen-Hoeksema, S., & Schouten, E. (2009). The influence of emotion-focused rumination and distraction on depressive symptoms in non-clinical youth: A meta-analytic review. *Clinical Psychology Review, 29*, 607–616. doi:10.1016/j.cpr.2009.07.001
- Rose, A. (2002). Co-rumination in the friendships of girls and boys. *Child Development, 73*, 1830–1843. doi:10.1111/1467-8624.00509
- Rose, A., Carlson, W., & Waller, E. (2007). Prospective associations of co-rumination with friendship and emotional adjustment: Considering the socioemotional trade-offs of co-rumination. *Developmental Psychology, 43*, 1019–1031. doi:10.1037/0012-1649.43.4.1019
- Schwartz, J., & Koenig, L. (1996). Response styles and negative affect among adolescents. *Cognitive Therapy and Research, 20*, 13–36. doi:10.1007/BF02229241
- Segerstrom, S. C., Stanton, A. L., Alden, L. E., & Shortridge, B. E. (2003). A multidimensional structure for repetitive thought: What's on your mind, and how, and how much? *Journal of Personality and Social Psychology, 85*, 909–921. doi:10.1037/0022-3514.85.5.909
- Silk, J. S., Steinberg, L., & Morris, A. S. (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Child Development, 74*, 1869–1880. doi:10.1046/j.1467-8624.2003.00643.x
- Smith, M., & Self, G. (1980). The congruence between mothers' and daughters' sex-role attitudes: A research note. *Journal of Marriage and the Family, 42*, 105–109. doi:10.2307/351938
- Stanton, A., Kirk, S., Cameron, C., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology, 78*, 1150–1169. doi:10.1037/0022-3514.78.6.1150
- Starr, L., & Davila, J. (2009). Clarifying co-rumination: Associations with internalizing symptoms and romantic involvement among adolescent girls. *Journal of Adolescence, 32*, 19–37. doi:10.1016/j.adolescence.2007.12.005
- Strauss, J., Muday, T., McNall, K., & Wong, M. (1997). Response style theory revisited: Gender differences and stereotypes in rumination and distraction. *Sex Roles, 36*, 771–792. doi:10.1023/A:1025679223514
- Sukhodolsky, D. G., Golub, A., & Comwell, E. N. (2001). Development and validation of the Anger Rumination Scale. *Personality and Individual Differences, 31*, 689–700. doi:10.1016/S0191-8869(00)00171-9
- Treynor, W., Gonzales, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research, 27*, 247–259. doi:10.1023/A:1023910315561
- Wichstrom, L. (1999). The emergence of gender difference in depressed mood during adolescence: The role of intensified gender socialization. *Developmental Psychology, 35*, 232–245. doi:10.1037/0012-1649.35.1.232
- Williams, K., Goodman, M., & Green, R. (1985). Parent-child factors in gender role socialization in girls. *Journal of the American Academy of Child Psychiatry, 24*, 720–731. doi:10.1016/S0002-7138(10)60115-X
- Wupperman, P., & Neumann, C. (2006). Depressive symptoms as a function of sex-role, rumination, and neuroticism. *Personality and Individual Differences, 40*, 189–201. doi:10.1016/j.paid.2005.05.017

Received September 25, 2008

Revision received March 6, 2010

Accepted March 17, 2010 ■