

RUNNING HEAD: Reactions to Maternal Feedback

Children's reactions to maternal feedback: Is it what she says or how she says it?

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Abstract

The aim of this study was to examine children's affective, cognitive, and behavioral responses to maternal feedback that varied with regard to content and tone. Participants were 62 children ages four to five years old ($M = 59.82$ months, $SD = 7.35$) recruited from local pre-schools, volunteer lists, and the medical school listserv. Children were read three stories in which the child did something (e.g., drawing, writing, building) and made a small mistake. They were randomly assigned to receive one of four types of feedback. The content of the feedback was either neutral or negative, and the tone was either neutral or negative. After hearing a story and receiving feedback, children answered a series of questions about their feelings, self-evaluation, expectations, and causes of the event, and about the mother's feelings and evaluation of the child's product. Mothers reported about their current level of depressive symptoms and their parenting behavior. Multiple regression analyses examined the main effects and two-way interactions of content (neutral vs. negative), and tone (neutral vs. negative). Separate analyses were conducted that included children's age, maternal depression, and parenting as possible moderators. Results revealed that the content of mothers' words affected children's reported affect, cognitions, and behaviors, and these relations tended to vary by children's age. Older children responded to neutral feedback more positively than younger children, and older children gave higher mother liking ratings in the neutral than in the negative content feedback conditions. Children receiving negatively toned feedback responded more helplessly to a puzzle task compared to those receiving neutrally toned feedback. Neither current maternal depressive symptoms nor parenting moderated the relations between condition and children's responses.

Introduction

Offspring of mothers who have had depression develop depression themselves at higher rates and at earlier ages than the children of non-depressed mothers (Beardslee, Versage, & Gladstone, 1998; Goodman & Gotlib, 1999). Goodman and Gotlib suggested several mechanisms that likely contribute to this elevated risk: heritability of depression, innate dysfunctional neuroregulatory mechanisms, exposure to the mother's negative affect, cognitions, and behavior, and exposure to high levels of stressful life events, and more than one of these mechanisms likely plays a role in the development of depression in at-risk offspring. The present study focused on one possible mechanism through which children develop negative views of themselves, i.e., feedback from mothers.

According to cognitive models of depression (Abramson, Metalsky, & Alloy, 1999; Beck, 1967) when stressful life events occur, individuals with negative views of themselves and the future, and/or the tendency to make global, stable, and internal attributions for the causes of negative events, are at increased risk for depression. Several empirical studies (e.g., Hankin, Abramson, & Siler, 2001; Joiner, 2000; Kraaij et al., 2003) have found evidence consistent with these cognitive theories of depression. How do such negative cognitions develop?

In a meta-analysis of studies examining mother-child interactions, Lovejoy, Graczyk, O'Hare, and Neuman (2000) showed a strong association between maternal depression and hostile parenting tendencies, which were further moderated by factors such as family socioeconomic status and child age. Depressed mothers also have been shown to talk about their children in a more critical manner than do nondepressed mothers (Frye & Garber, 2005). Moreover, criticism from a parent at age five predicted higher levels of self-criticism at age twelve (Koestner, Zuroff, & Powers, 1991). In addition, maternal controlling behavior and

evaluative feedback toward their children at age two has been shown to predict the children's shame, persistence, and avoidance of mastery activities a year later (Kelley, Brownell, & Campbell, 2000). Thus, critical and hostile tendencies of depressed mothers may be related to the development of negative cognitions and depression among their offspring.

Despite the increasing research on negative cognitions that has been conducted over the past few decades, most of the data are retrospective or correlational, thereby limiting our ability to determine the direction of causality. Few experimental studies with young children have been conducted that actually manipulate parental feedback in a controlled laboratory setting. The primary goal of the current study was to conduct such a laboratory study in order to examine the influence of maternal feedback on children's negative cognitions.

A developmental psychopathology perspective would lead us to expect that the same mechanisms may operate in children of both depressed and non-depressed mothers, but that children's prior experience with depressed mothers might enhance the effect of the mechanisms. We pose the following three questions: (1) To what extent do experiences of receiving negative feedback from one's mother contribute to children's negative evaluations of themselves? (2) Does the mother's expression of negative feedback with a negative affective tone influence this effect? (3) Is the association between mothers' negative feedback and children's negative self-beliefs stronger for offspring of depressed versus nondepressed mothers?

The present study focused on young children because they may be at an important point in development of the self in relation to parental feedback. During the early years, children develop the ability to understand the intentions, feelings, and states of mind of others (Bartsch & Wellman, 1988; Lilliard, 2007). Such development allows children to use evaluative feedback

from others to formulate their views of themselves, including the negative self-cognitions that leave children vulnerable to the development of depression (Horvath, Pineda, & Cole, 2004).

Young children are especially vulnerable to the development of negative cognitions when they receive negative feedback from others. Heyman, Dweck, and Cain (1992) found that when exposed to failure, 4- to 6-year-old children were more likely than older children to express helplessness. Interestingly, Cutting and Dunn (2002) reported that children with better-developed social cognitive skills at age four were *more* sensitive to criticism a year later. They posited that children with higher social cognition scores can better understand the intentions of a teacher when he or she criticizes the child, thus leading to an increased sensitivity to criticism and an adoption of a helpless pattern of response. At the same time, however, five year olds showed more sensitivity to criticism, responding with negative self-views and mood when criticized, than did children in the no criticism failure condition.

Dweck and colleagues (Heyman et al. 1992; Kamins & Dweck, 1999) found that a subset of children responded to criticism with negative cognitions (judging/perceiving the self as bad, low expectations of future success), affect, and behavior (giving up easily). Moreover, individual differences in children's sense of self-worth predicted more negative judgments, increases in negative affect, more negative ratings of their performance, and less persistence following setbacks (Kamins & Dweck, 1999). Cutting and Dunn (2002) demonstrated that children who were more skilled at inferring and interpreting the beliefs of others were actually *more* likely to respond to criticism by lowering their judgment of their own ability. Surprisingly, however, children exposed to this criticism did not report greater feelings of sadness. This might have been partially due, however, to the manner in which affect was measured in that study. The present study addressed this limitation by including a modified measure of affect.

One variable that may affect children's responses to maternal criticism is having a depressed mother. Offspring of depressed mothers likely have been exposed to more criticism compared to children of nondepressed mothers (e.g., Lovejoy et al., 2000). Second, maternal depression often is accompanied by angry, hostile parenting styles, as well as by inter-parental conflict, thus increasing the likelihood that the child has been exposed to more hostility. Third, given the episodic nature of depression and the probable wide range in the quality of interactions between depressed mothers and their children, offspring of depressed mothers may be more sensitive to subtle fluctuations in both verbal and nonverbal expressions by their mothers. Therefore, we expected a relation between the degree of maternal depression and children's responses to negative feedback from mothers.

In summary, existing literature on normative development has contributed to our understanding of how the verbal content of others' negative feedback may influence children's developing negative self-cognitions, but four main limitations need to be addressed. First, much of the data thus far have focused on teacher criticism; given the integral role that mothers play in children's development, the present study focused on the effect of criticism by mothers in particular. Second, little is known about the effects of different ways of delivering feedback on children's reactions. Studies have not yet assessed or manipulated affective tone (hostility) separately from criticism, and some researchers have even confounded the two variables. In the present study, we varied both the content and affective tone in order to sort out the incremental role of hostility (affect) to criticism (content). Third, although models have stipulated potential moderators of the relation between maternal criticism and children's responses, more data are needed. Given that offspring of depressed mothers have significantly higher rates of negative affect and cognitions, and depression, the present study examined the role of maternal depression

on children's responses to maternal feedback. Finally, the existing literature on the relation between parenting and children's negative cognitions is almost entirely retrospective (Alloy, et al. 2001) or correlational (Garber & Flynn, 2001), which limits our ability to draw causal conclusions. Therefore, the present study experimentally manipulated the variables of interest; that is, maternal feedback. This study examined whether manipulating the tone of negative feedback from mothers leads to greater differences in children's sensitivity to the feedback than providing negative evaluative feedback alone, and whether maternal depression strengthens these associations. The present study used a modified puppet task from Heyman et al. (1992) in the experimental manipulation of feedback from a mother puppet to a child puppet.

Negative cognitions included (a) lowered judgment of one's abilities (engaging in more self-criticism), and (b) making negative attributions (stable, global, and internal). We also extended the response range of Cutting and Dunn's (2000) ability rating to allow for greater variability. Additionally, we measured sensitivity to criticism as per Cutting and Dunn, which included affect (feeling more sad affect), and behavior (being less persistent in the continuation of a task).

Method

Participants

Participants were 62 mothers and their children recruited from surrounding preschools and participant lists in both the Nashville and Atlanta areas. Children were four or five years old ($M = 59.82$ months, $SD = 7.35$). The sample included 35 girls (56.5%) and 27 boys (43.5%). The majority of the children were Caucasian ($n = 49$, 79.0%), with seven African-American children (11.3%), two Latino/Hispanic children (3.2%), two Asian children (3.2%), one multi-ethnic child (1.6%), and one child whose race was categorized as "other" (1.6%).

Mothers ranged in age from 30 to 43 ($M = 34.07$) and had a similar racial composition as the children (83.1% Caucasian, 11.9% African-American, 3.4% Asian, and 1.7% other). The majority of the mothers were currently married (88.7%); 6.5% were divorced or annulled, and 1.6% were never married. Mothers were generally highly educated: 1.6% had graduated from high school, 4.8% completed part of college, 3.2% graduated from a 2-year college, 33.9% graduated from a 4-year college, 9.7% completed part of graduate or professional school, and 41.9% completed graduate or professional school.

Measures

Mothers completed the Center for Epidemiologic Studies - Depression scale (CES-D, Radloff, 1977), which is a 20-item questionnaire about the extent to which the respondent experienced depressive symptoms over the past week (Appendix 1). Mothers also completed the 30-item O'Leary Parenting Scale, provided in Appendix 2, which allows mothers to self-report tendencies in parenting pertaining to laxness, over reactivity, and verbosity (O'Leary, Arnold, Wolff, & Acker, 1993).

Procedure

Experimenters were undergraduate Honors and directed study students in psychology and graduate students in the clinical psychology program, and were responsible for obtaining informed consent from the parents before conducting the experiment. Children were randomly assigned to one of four conditions, with equal proportions of girls and boys per condition. In the neutral tone/neutral content condition, $n = 16$ (9 girls and 7 boys); for neutral tone/negative content, $n = 17$ (9 girls and 8 boys); negative tone/neutral content, $n = 15$ (9 girls and 6 boys), and negative tone/negative content, $n = 14$ (8 girls and 6 boys). Prior to starting the experiment, children were told that the interviewer was interested in learning about children their age, and

they would play games, answer some questions, get stickers, and receive a toy at the end.

Experimenters explained to the children that there were no right or wrong answers to any of the questions, and they could request to stop at any time. Children were encouraged to ask questions of the interviewers if, at any point, they did not understand something.

Children were given a choice among three child dolls (Caucasian, African-American, and Hispanic) and three mother dolls of similarly diverse racial compositions to be used in the stories. Children then were read three stories in which they worked hard to (a) draw a picture of a family, (b) write numbers 1 through 10, and (c) build a house out of blocks, but they made a small error on each (a) left feet off of a person in the picture, (b) omitted the number eight, and (c) did not put windows on the house. In each case, the experimenter told the story in the second person, using the child's own name in reference to the doll. (“*You* have been working really hard to draw a picture of a family...”). Interviewers instructed children to imagine that they were the person in the story. Each story involved the child doll creating the product, and subsequently proudly showing his or her mother. The mother's response served as the independent variable, in a 2 (negative or neutral content) by 2 (negative or neutral tone) design, resulting in 4 conditions: neutral content/neutral tone, negative content/neutral tone, neutral content/negative tone, and negative content/negative tone. An example of negative content involves the mother pointing out the child's error (e.g. “There are no windows on that house. That's not what I call building a house the right way. I'm disappointed in you.”). The neutral content for that story was “Oh, look at what you made. You built a house out of blocks. Did you want me to see it now?” To standardize the maternal feedback, mothers' responses were presented to the children using the same recorded voices, which were different from the voice of the experimenter.

After each of the three scenarios, presented in a counterbalanced order, children were asked a series of questions about how they felt. Children were asked how much they felt the emotion (i.e., happy, sad, mad, scared) after hearing the mother's response, using a four-point scale ("not at all," "a little," "some," "very"). Their responses were summed to create a composite that reflected the overall Child Affect (0 as the most positive, 12 as the most negative) for each story. Children then were asked to rate their ability at the activity as "good" or "not good" on a 4-point scale. They also rated how well they would do the task if they did it again (stability), and how well they would do (i.e., draw, write, build) something different [i.e. "When you draw something different, will you draw it good or not good?"] (globality). Children also were asked both an open-ended and forced choice questions about their internal versus external attributions for the outcome. To assess persistence, children were asked how much they would like to do the task again. Children then were asked how the mother felt when she saw the completed product (i.e., picture, numbers, house) with the slight error, and how she would rate the child's performance on the task, using the same 4-point scales.

Next, children completed a block design task similar to that used in the WISC III (Wechsler, 1949). The experimenter instructed the child to make the blocks look just like the picture, using four blocks. The first and fourth puzzles were easy, whereas the second and third were hard. The child received a maximum of sixty seconds to complete each puzzle. Upon completion (or time ran out) of all four puzzles, the child was asked to choose which puzzle he or she would prefer to complete again. At the end, the experimenter said, "Oh my! I made a mistake and gave you two very hard puzzles that even adults can't do. I'm so sorry. You really did your very best on these."

To ensure that children did not leave the session feeling discouraged, the experimenter presented a fourth scenario in which children were instructed to imagine that they were the child doll again, and they won at a game. The mother doll then complimented the child, and, in all but the neutral/neutral condition, apologized to the child for their earlier negative content and/or tone. (i.e. “You won! Look at what a great job you did playing the game. I am so proud of you. Also, I am sorry for not sounding nice before. I think you did a wonderful job on *everything* you did today! Good for you!”).

Finally, the experimenter administered to the child a modified version of the DANVA, which consisted of twelve trials, in which an adult says the same phrase (“I am going out of the room now, and I’ll be back later”) using a different affective tone. For each trial, the child indicated the affect of the adult’s speaking voice (happy, sad, mad, scared). Higher scores specified that they got more correct. At the completion of the experiment, each child selected a toy to take home as a thank you for his/her participation. The entire script for the child procedure is shown in Appendix 3.

Results

Children’s responses to each question were averaged across the three stories. Table 1 displays the descriptive statistics for each of these variables and for the mothers’ report on the CES-D and the O’Leary Parenting Scale. Higher scores on all variables except the DANVA indicated more negative scores. Separate regression analyses were conducted for each child dependent variable. In all analyses, the child’s DANVA score was included as a control variable. Analyses were run separately for age, maternal depression, and maternal parenting. All main effects and two-way interactions were tested.

Correlations among Study Variables

Correlations among all study variables are presented in Table 2. Mothers reported better parenting with boys (coded as 2) than with girls (coded as 1). More internal attributions for their mistake were reported by girls, and older children. Older children also scored better on the DANVA. Mothers' level of self-reported depressive symptoms and their parenting behaviors were not significantly correlated with any study variable. Higher levels of children's composite negative affect ratings across the three stories were significantly associated with a more negative self-evaluation of their performance, a greater preference to do the task again, and more negative child-rated maternal affect, evaluation, and liking of their product. More negative self-evaluations of their performance were significantly associated with more global and stable negative expectations of the future and more negative child-rated maternal affect, evaluation, and liking of their product. Children's global expectations of the future were significantly positively correlated with stable future expectations, but negatively correlated with internal attributions for their mistakes. Finally, children's ratings of mothers' affect, evaluation, and liking of their product were all highly correlated.

Analyses as a Function of Child Age

Children's Affect. Multiple regression analyses were conducted with child age (in months), content (neutral and negative) and tone (neutral and negative) as the independent variables and children's responses to the questions following the stories as the dependent variables. There was a significant main effect for content regarding children's ratings of negative affect ($\beta = 8.448$, $pr = .397$, $p = .002$) such that negative content predicted significantly more negative affect compared to neutral content. The main effect for tone and the content by tone interaction was not significant regarding children's affect.

Self-evaluations. Regarding children's evaluation of their performance, the age by content interaction was significant ($\beta = .239$, $pr = .367$, $p = .005$). Figure 1 shows the plot of this interaction. Higher scores indicate a worse self-evaluation. No age differences were found on self-evaluations in the negative content condition, whereas in the neutral content condition younger children rated themselves significantly worse than did the older children ($\beta = -.341$, $pr = -.327$, $p = .014$).

Expectations and Attributions. The main effects of content ($\beta = -.825$, $pr = -.273$, $p = .037$) and tone ($\beta = -.850$, $pr = -.281$, $p = .031$) were significant for children's global expectations, indicating that the ratings of children in the negative content condition regarding how they would do on a different task were lower (i.e., better) than the ratings of children in the neutral content condition. A similar pattern was found comparing the negative versus neutral tone conditions. No significant effects were found with regard to children's stability expectations. There was a significant age effect on children's attributions ($\beta = .049$, $pr = .415$, $p = .001$) such that older children made more internal attributions for the negative event compared to younger children.

Persistence. The age by tone interaction was significant ($\beta = -.208$, $pr = -.309$, $p = .020$) for children's report of how much they would like to do the task (i.e., draw picture, write numbers, build house) again, with higher scores indicating that they would be less interested in doing it again. Figure 2 shows the plot of this interaction. The direction of the relation between wanting to repeat the task in the negative and neutral conditions was significantly different for younger versus older children. Regarding the selection of which puzzle (easy versus hard) they wanted to do again, the main effect for tone was a significant ($\beta = -.221$, $pr = -.266$, $p = .045$),

indicating that children in the negative tone condition were more likely to select the easier block puzzle compared to those in the neutral tone condition.

Children's Report of Mothers' Affect and Evaluations. Analyses of children's report of mothers' reactions yielded the following significant age by content interactions: mothers' affect ($\beta = .696$, $pr = .391$, $p = .003$; Figure 3), mothers' evaluation ($\beta = .253$, $pr = .373$, $p = .005$; Figure 4), and mothers' liking of the child's product ($\beta = .262$, $pr = .369$, $p = .005$; Figure 5). The pattern of these results was similar across the different variables. For neutral content, younger children reported more negative maternal affect than did older children, whereas for negative content, age was not significantly related to children's reports of mothers' affect. Regarding children's reports of mothers' evaluation, the difference between older and younger children for neutral content was significantly different from the difference between older and younger children for negative content, although the differences between any two of these comparisons were not significant. For children's report of mothers' liking of their product, among older children, content significantly predicted mother's liking scores ($\beta = 5.050$, $pr = .308$, $p = .021$). Older children in the negative content condition reported less mother liking (higher score sums) than did those in the neutral content condition. For younger children, content did not significantly predict mother liking ($p = .566$). For neutral content, the prediction of mother liking from age was marginally significant ($\beta = -.285$, $pr = -.257$, $p = .056$), with older children reporting more mother liking of their product than did younger children. For negative content, age did not significantly predict mother liking.

Analyses as a Function of Maternal Depression

Mothers' current level of depressive symptoms was not significantly related to any of the child variables nor did it moderate the relation of condition to these variables. When maternal

CES-D was included in the analyses, significant main effects were again found in the content condition for children's affect ($\beta = 9.11$, $pr = .422$, $p = .002$), and children's ratings of mothers' affect ($\beta = 7.22$, $pr = .504$, $p = .000$) and mothers' evaluation ($\beta = 1.56$, $pr = .299$, $p = .035$).

Analyses as a Function of Maternal Parenting

Mothers' parenting (per self-reported tendencies on the O'Leary scale) was significantly related to children's report of mothers' affect ($\beta = 4.63$, $pr = .325$, $p = .015$) indicating that more negative parenting predicted more negative children's ratings of the mothers' affect in response to the child's product. When maternal parenting was included in the analyses, significant main effects were again found in the content condition for children's affect ($\beta = 9.03$, $pr = .427$, $p = .001$), and children's ratings of mothers' affect ($\beta = 6.89$, $pr = .497$, $p = .000$), mothers' evaluation ($\beta = 1.92$, $pr = .360$, $p = .007$), and mothers' liking of the child's product ($\beta = 1.65$, $pr = .300$, $p = .026$). Finally, for the selection of which puzzle (easy versus hard) they wanted to do again, the main effect for tone was a significant ($\beta = -.284$, $pr = -.325$, $p = .018$), indicating that children in the negative tone condition were more likely to select the easier puzzle compared to those in the neutral tone condition.

Discussion

Overall, the present study showed that the content of mothers' words affected children's reported emotions, cognitions, and behaviors; these relations tended to vary with children's age. Fewer significant effects emerged with regard to tone of voice, and no significant content by tone interactions were found. Neither current maternal depressive symptoms nor parenting moderated the relations between condition and children's responses.

With regard to children's affect ratings, negative content predicted significantly more negative affect compared to neutral content. Thus, children who received negative content

feedback reported that they would feel greater sadness, anger, and fear, and less happiness compared to children who received neutral content feedback. No significant differences were found in children's ratings of affect as a function of tone. Interestingly, the mean levels of affect in both Tone conditions fell in between the affect ratings of children in the neutral and negative Content conditions, although they were not significantly different from each other or from those in either Content condition.

Regarding children's self-evaluations, in the neutral content condition older children rated themselves significantly higher than did younger children; that is, when the content of the feedback was neutral, older children evaluated themselves less harshly compared to younger children. It is possible that the younger children did not interpret the neutral content as benignly as did the older children, or that they made their self-evaluations based on factors other than the content of the feedback. No significant age difference was found in the negative content condition, indicating that the negative content feedback affected children's self-evaluations similarly for older and younger children.

The age by content interaction pattern was generally similar for children's ratings of mothers' affect, mothers' evaluation, and mothers' liking of the child's product. In the neutral content condition, younger children reported more negative maternal affect and a trend for lower mother liking ratings compared to older children. Moreover, among older children negative content predicted lower ratings of maternal liking compared to neutral content. For younger children, content was not related to children's ratings of the mother's liking of their product. Thus, older children responded to neutral feedback differently than younger children, and older children differentiated between neutral versus negative feedback when rating how much the mother liked what the child had presented to her.

In some respect, children's ratings of the mothers' affect, evaluation, and liking can be considered a kind of manipulation check. Among older children, the content condition produced ratings in the expected direction. That is, older children appeared to recognize that the neutral content feedback would result in less negative affect or dislike by mothers. This was not the case, however, for the younger children who may not have understood the manipulation as well. Anecdotally, such findings are consistent with the observation of the experimenters who reported that the younger children did not seem to "get" the task as well as the older children.

Another interesting finding was the significant positive relation between age and internal attributions, and the marginally significant negative relation between age and global expectations. Older children reported significantly more internal attributions for the "mistake" and *less* global future expectations than did younger children. That is, compared to younger children, older children reported that the mistake was due to something about them; yet older children had higher expectations than younger children for how they would do when they did (i.e., drew, wrote, built) something different. Although there is increasing evidence that children's tendency to make internal, global, and stable attributions increases with age (e.g., Cole et al., 2008), little research about attributions has been done with children as young as those in the present study (Conley, Haines, Hilt, & Metalsky, 2001). The apparent discrepancy between internality and globality found here is consistent with evidence that children do not begin to connect internality with globality and stability prior to about 10 to 12 years old (e.g., Nichols, 1978; Rholes & Ruble, 1984).

Regardless of age, children's expectations about how well they would do on a different, although related task [e.g., draw, write, build something different (i.e., globality)] were significantly different for both content and tone conditions. Compared to children in the neutral

content condition, children receiving negative feedback reported that they would do *better* on a different task. Similarly, compared to children in the neutral tone condition, children who received negatively toned feedback indicated that they would do better on a different task. The children in the negative conditions might have reasoned that if the product just created was *so* bad (as reflected by the negative content or negative tone of the feedback), then a new product would *have to be* considerably better in comparison. This would be consistent with children's generally positive sense of self at this young age (Harter, 1999).

Interestingly, whereas children receiving negatively toned feedback reported that they would do *better* on another task, they were significantly more likely than children receiving neutrally toned feedback to select an *easy* puzzle when asked which block puzzle they would like to do again. Although these responses may seem contradictory, the items were different in two respects. First, the globality question was in reference to doing a somewhat different task, whereas the block puzzles were the same (i.e., more an index of stability). Second, the question about expectations was purely cognitive, whereas the puzzle selection was seemingly more behavioral, i.e., they were choosing a puzzle to do again.

In addition, the finding that children given negatively toned feedback were significantly more likely to select an easy puzzle compared to those receiving a neutrally toned message is consistent with earlier work on learned helplessness (Dweck, 1975; Heyman et al., 1992). That is, children receiving negative feedback from their teachers tended not to persist in the face of failure as much as children who did not receive such feedback. Thus, children who are yelled at for their mistakes may be particularly reluctant to place themselves in situations in which they have a higher likelihood of failure, and thereby receive further criticism. Therefore, they choose the easier puzzle on which they expect to succeed.

Contrary to our hypothesis, current maternal depressive symptoms were not associated with any of the children's responses, nor did maternal depression moderate the relations between condition and the child variables. Unfortunately, data about mothers' histories of depression were not available for analysis. We expect, however, that mothers' depression history during the child's life rather than their current level of depressive symptoms will more likely be related to children's reactions to feedback. The amount of time that the child was exposed to maternal depression, rather than the recency of the exposure, is probably a more powerful predictor or moderator of the effects of negative feedback on children's affect, cognitions, and behavior.

With regard to parenting behavior, mothers reported significantly better parenting with boys than with girls. Perhaps mothers believe that parenting a boy is more difficult, and therefore they are more careful to ensure that they are parenting a son "correctly." In contrast, mothers may have higher expectations for their daughters, and therefore parent them less adequately. Overall, maternal parenting was not significantly related to any of the child variables, nor did it moderate the relation between condition and children's responses. This absence of findings could have been due to a small sample size, the use of the wrong measure of parenting, or the lack of a relation between the dimensions of parenting assessed here and children's responses to the task.

Another unexpected result was the relatively fewer effects found with regard to tone of voice. It is possible that the recorded feedback for the negative tone condition, in fact, was not negative enough to have the expected effect on children. Although independent judges rated the negatively toned voices as more negative than the neutral ones, it is possible that they were not negative enough to affect children's responses. Creating a sufficiently powerful manipulation within the confines of an ethical experiment requires a delicate balance. In this case, we may have erred on the side of caution.

On the other hand, the children might not have been able to characterize the affective tone in the feedback voice. The DANVA was included as an index of children's ability to rate voices with regard to affect. DANVA scores correlated significantly with age, and were used as a control in all analyses. The mean level of number of correct DANVA responses was only 5 out of a possible 12 (42%), which is not very high. Thus, the Tone manipulation in the current study might not have worked, in part, because the children were unable to correctly detect the affect being conveyed by the voice.

Other limitations of the study should be noted because they provide directions for future research. First, children who lacked the cognitive capacity to comprehend the assumed identities of the dolls (one as him/herself; the other as his/her mother) might not have understood the questions and response options. Rakoczy, Tomasello, and Striano (2005) have shown that an explicit understanding of objects (e.g., child and mother dolls) as symbolic representations (e.g., self, mother) does not develop until about age four or five, precisely the ages of our participants. Some children in our sample, however, might not yet have developed this cognitive skill, and therefore their responses may not have been valid. Future studies should include children who are slightly older in order to increase the probability that they will understand the task. In addition, a manipulation that gives feedback to the children about something *they actually did* rather than through the use of dolls may have a more powerful effect on children's responses.

Second, due to the challenges of subject recruitment, the study included only 62 participants. Such a small sample size might have limited our power to detect significant effects, particularly interactions (e.g., by gender or site). Data are continuing to be collected at both sites with an aim of 120 participants at the end, which is about double the current sample.

Third, the sample was unrepresentative of the general population, with 86% of the mothers having earned a four-year college degree or higher, and being a predominantly Caucasian sample. Fourth, the children were not familiar with the voice of the individual delivering the maternal feedback. Use of children's own mothers' voice likely would be a more powerful manipulation, although it would be more challenging to obtain. Finally, future studies should include positive content and positive tone conditions in a 2 x 3 design in order to learn more about children's responses to varied content and affect in maternal feedback messages, and to provide a wider contrast between conditions, particularly with regard to tone.

Several implications of these findings can be suggested. Children appear to respond affectively and behaviorally to the content and to a lesser extent the tone of adult feedback about performance. Although there were fewer effects on children's cognitions, at least as measured here, it is possible that chronic exposure to negative feedback will eventually take its toll on their belief systems as well. Thus, parents might want to be more cognizant of the impact of their feedback, even when seemingly neutral, on their children's emotions and developing sense of themselves. What we *say* may not always be what our children *hear*.

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Table 1. Means and standard deviations for the study variables

Dependent Variable	Mean	SD
Child Ratings about Self		
Child Affect	14.81	10.72
Child Evaluation	5.84	2.44
Child Future Expectations: Global	4.37	1.61
Stable	3.71	1.30
Child Attributions	1.13	0.88
Child Persistence (like to do again)	5.98	2.45
Choose easy or hard puzzle	0.76	0.43
Child Ratings about Mother		
Mother Affect	11.26	7.17
Mother Appraisal: Evaluation	5.56	2.68
Liking	5.52	2.71
Children's Total DANVA Score	5.28	2.32
Mothers' CES-D	12.82	6.48
O'Leary Parenting Scale Total score	2.75	0.45

	Child sex 1	Child age 2	CESD total 3	O'leary total 4	Block chosen 5	Child affect 6	Child eval 7	Fut exp global 8	Fut exp stable 9	Child persist 10	Child attrib 11	Mom affect 12	Mom eval 13	Mom liking 14	DANVA sum 15
1	--														
2	.07	--													
3	.04	-.21	--												
4	-.26*	.00	-.06	--											
5	.01	-.23~	.04	.16	--										
6	-.20	-.14	-.06	.15	-.03	--									
7	.13	-.08	.00	-.04	.05	.40***	--								
8	-.10	-.24~	-.07	.06	.07	.19	.39**	--							
9	.02	-.07	.05	.22~	.06	.12	.33**	.59***	--						
10	.18	.04	-.00	.05	.16	-.31*	-.13	.10	.14	--					
11	.28*	.42***	.14	-.21	-.21	-.21	-.12	-.29*	-.23~	.02	--				
12	-.17	.00	-.13	.23~	.06	.79***	.51***	.23~	.21	-.19	-.19	--			
13	.06	.17	-.02	.00	-.06	.36**	.67***	.20	.16	-.04	.07	.57***	--		
14	-.06	-.06	-.13	-.02	-.07	.54***	.68***	.27*	.16	-.13	-.12	.66***	.81***	--	
15	.00	.57***	.07	-.16	.00	-.15	-.05	-.19	-.09	-.06	.31*	-.02	.19	.07	--

Sig. (2- tailed); ~ $p < .10$; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Means and standard deviations for all variables in the neutral versus negative content conditions and the neutral versus negative tone conditions.

	Neutral Content	Negative Content	Neutral Tone	Negative Tone
Dependent Variable	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Child Ratings about Self				
Child Affect	10.90 (9.73)	18.71 (10.37)	14.60 (10.54)	15.03 (11.11)
Child Evaluation	5.45 (2.25)	6.23 (2.60)	6.36 (2.26)	5.24 (2.54)
Child Future Expectations:				
Globality	4.81 (1.82)	3.94 (1.26)	4.76 (1.82)	3.93 (1.22)
Stability	3.87 (1.48)	3.55 (1.09)	3.94 (1.56)	3.45 (0.87)
Child Attributions	0.94 (0.93)	1.32 (0.79)	1.12 (.89)	1.14 (0.88)
Child Persistence (do again)	6.32 (2.30)	5.65 (2.58)	5.73 (2.41)	6.28 (2.40)
Choose Easy or hard puzzle	0.76 (0.44)	0.77 (0.43)	0.87 (0.34)	0.64 (0.49)
Child Ratings about Mother				
Mother Affect	8.19 (6.33)	14.32 (6.71)	12.42 (7.46)	9.93 (6.70)
Mother Appraisal:				
Evaluation	4.55 (1.69)	6.58 (3.10)	5.85 (2.74)	5.24 (2.61)
Liking	4.71 (2.02)	6.32 (3.09)	5.79 (2.97)	5.21 (2.41)

Figure 1

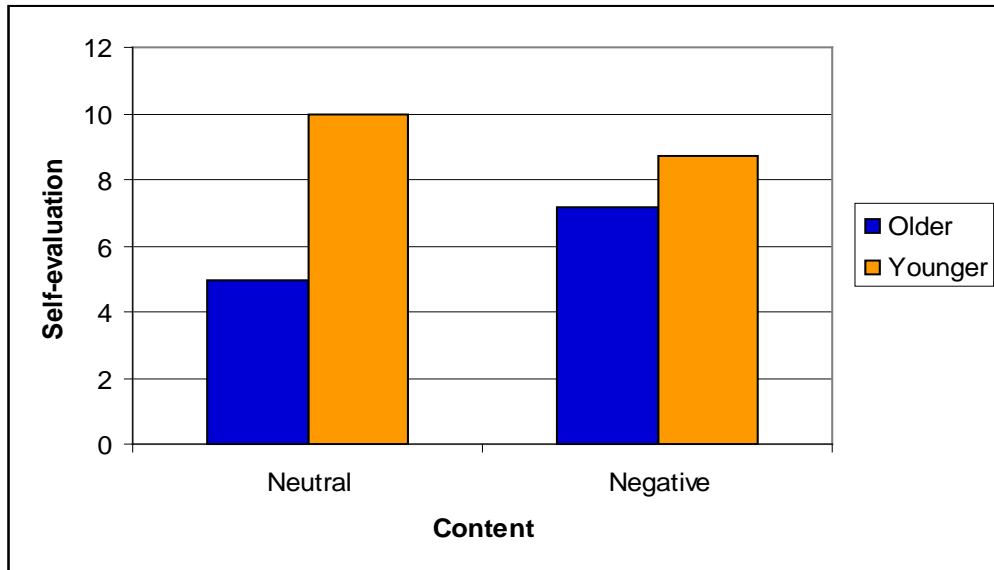


Figure 2

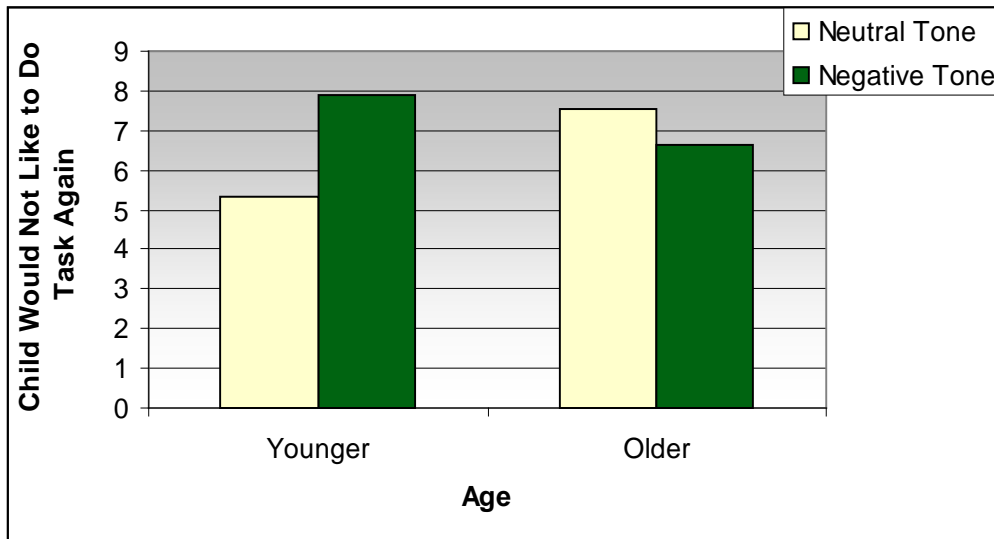


Figure 3

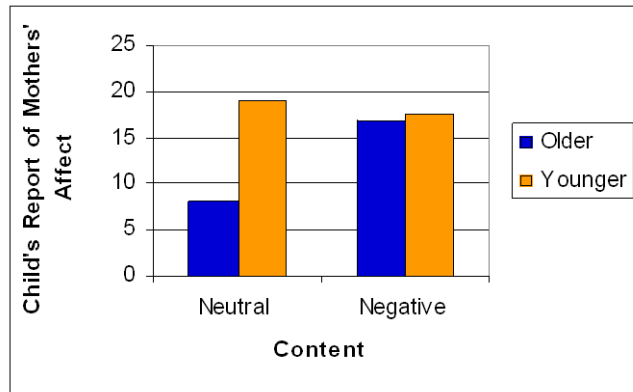


Figure 4

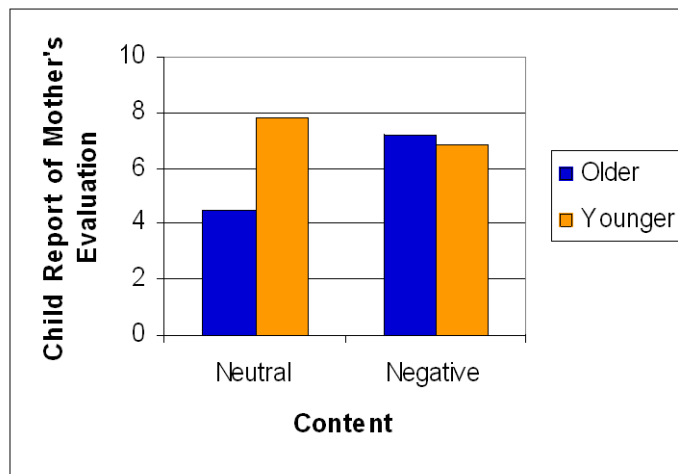
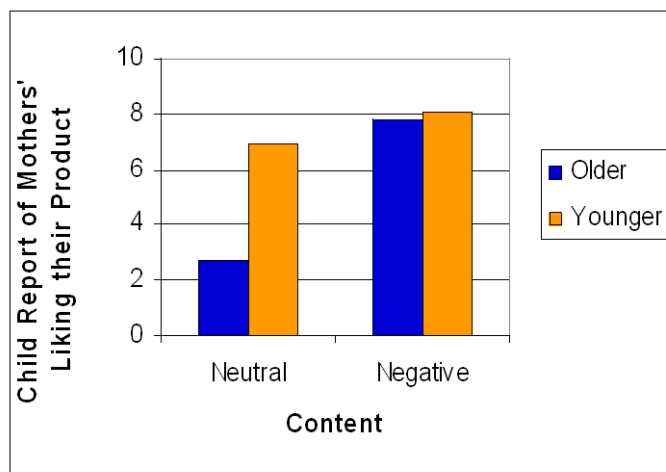


Figure 5



Appendix 1. CES-D scale

Circle the number for each statement that best describes how you felt or acted DURING THE PAST WEEK:	Rarely or none of the time	Some of the time	A moderate amount of time	Most or all of the time
1. I was bothered by things that usually don't bother me.	0	1	2	3
2. I did not feel like eating; my appetite was poor.	0	1	2	3
3. I felt that I could not shake off the blues, even with help from family or friends.	0	1	2	3
4. I felt that I was just as good as other people.	0	1	2	3
5. I had trouble keeping my mind on what I was doing.	0	1	2	3
6. I felt depressed.	0	1	2	3
7. I felt that everything I did was an effort.	0	1	2	3
8. I felt hopeful about the future.	0	1	2	3
9. I thought my life had been a failure.	0	1	2	3
10. I felt fearful, anxious, or worried.	0	1	2	3
11. My sleep was restless: I had trouble sleeping.	0	1	2	3
12. I was happy.	0	1	2	3
13. I talked less than usual.	0	1	2	3
14. I felt lonely.	0	1	2	3
15. I thought people were unfriendly to me.	0	1	2	3
16. I enjoyed life.	0	1	2	3
17. I had crying spells.	0	1	2	3
18. I felt sad.	0	1	2	3
19. I felt that people dislike me.	0	1	2	3
20. I could not get "going."	0	1	2	3

Appendix 2. O'Leary parenting scale

Child's Name: _____

Today's Date: _____

Instructions:

At one time or another, all children misbehave or do things that could be harmful, that are "wrong", or that parents don't like. Example include:

<i>hitting someone</i>	<i>whining</i>	<i>not picking up toys</i>
<i>forgetting homework</i>	<i>throwing food</i>	<i>refusing to go to bed</i>
<i>having a tantrum</i>	<i>lying</i>	<i>wanting a cookie before dinner</i>
<i>running into the street</i>	<i>arguing back</i>	<i>coming home late</i>

Parents have many different ways or styles of dealing with these types of problems. Below are items that describe some styles of parenting.

For each item, fill in the circle that best describes your style of parenting during the past two months with the child indicated above.

SAMPLE ITEM:

At meal time...

I let my child decide how much to eat. I decide how much my child eats.

1. When my child misbehaves...

I do something right away. I do something about it later.

2. Before I do something about a problem...

I give my child several reminders or warnings. I use only one reminder or warning.

3. When I'm upset or under stress...

I am picky and on my child's back. I am no more picky than usual.

4. When I tell my child not to do something...

I say very little. I say a lot.

5. When my child pesters me...

I can ignore the pestering. 0---0---0---0---0---0 I can't ignore pestering.

6. When my child misbehaves...

I usually get into a long argument with my child. 0---0---0---0---0---0 I don't get into an argument.

7. I threaten to do things that...

I am sure I can carry out. 0---0---0---0---0---0 I know I won't actually do.

8. I am the kind of parent that...

sets limits on what my child is allowed to do. 0---0---0---0---0---0 lets my child do whatever he/she wants.

9. When my child misbehaves...

I give my child a long lecture. 0---0---0---0---0---0 I keep my talks short and to the point.

10. When my child misbehaves...

I raise my voice or yell. 0---0---0---0---0---0 I speak to my child calmly.

11. If saying "No" doesn't work right away...

I take some other kind of action. 0---0---0---0---0---0 I keep talking and try to get through to my child.

12. When I want my child to stop doing something...

I firmly tell my child to stop. 0---0---0---0---0---0 I coax or beg my child to stop.

13. When my child is out of my sight...

I often don't know what my child is doing. 0---0---0---0---0---0 I always have a good idea of what my child is doing.

14. After there's been a problem with my child...

I often hold a grudge. **0---0---0---0---0---0** things get back to normal quickly.

15. When we're not at home...

I handle my child the way I do at home. **0---0---0---0---0---0** I let my child get away with a lot more.

16. When my child does something I don't like...

I do something about it every time it happens. **0---0---0---0---0---0** I often let it go.

17. When there is a problem with my child...

things build up and I do things I don't mean to do. **0---0---0---0---0---0** things don't get out of hand.

18. When my child misbehaves, I spank, slap, grab, or hit my child...

never or rarely. **0---0---0---0---0---0** most of the time.

19. When my child doesn't do what I ask...

I often let it go or end up doing it myself. **0---0---0---0---0---0** I take some other action.

20. When I give a fair threat or warning...

I often don't carry it out. **0---0---0---0---0---0** I always do what I said.

21. If saying "No" doesn't work...

I take some other kind of action. **0---0---0---0---0---0** I offer my child something nice so he/she will behave.

22. When my child misbehaves...

I handle it without getting upset. **0---0---0---0---0---0** I get so frustrated or angry that my child can see I'm upset.

23. When my child misbehaves...

I make my child tell me why he/she did it. **0---0---0---0---0---0** I say "No" or take some other action.

24. If my child misbehaves and then acts sorry...

I handle the problem like I usually would. 0---0---0---0---0---0 I let it go that time.

25. When my child misbehaves...

I rarely use bad language or curse. 0---0---0---0---0---0 I almost always use bad language.

26. When I say my child can't do something...

I let my child do it anyway. 0---0---0---0---0---0 I stick to what I said.

27. When I have to handle a problem...

I tell my child I'm sorry about it. 0---0---0---0---0---0 I don't say I'm sorry.

28. When my child does something I don't like, I insult my child, say mean things, or call my child names...

never or rarely. 0---0---0---0---0---0 most of the time.

29. If my child talks back or complains when I handle a problem...

I ignore the complaining and stick to what I said. 0---0---0---0---0---0 I give my child a talk about not complaining.

30. If my child gets upset when I say "No"...

I back down and give in to my child. 0---0---0---0---0---0 I stick to what I said.

Appendix 3. Child procedure

Warm-up and Instructions to Child

Have with you: laptop computer, sticker sheet, stickers, crayons/markers, dolls (all of the mothers and all of the boys OR girls, depending on the sex of the child), prize box, stopwatch, drawing for each of the three stories, blocks, block drawings

- Hello, _____ (child's name). My name is _____ (experimenter's name). [And, this is _____ (experimenter #2) who will be helping us today.]
- I would like to tell you about what we are going to do today. Please ask me any questions you have at any time.
- We are interested in learning about children your age.
- We're going to play some games, and I'm going to ask you some questions.
- Your mom/(or teacher) will not be in the room.
- You can stop playing any time you want and no one will be mad at you.
- While we play, you will be able to choose stickers and put your stickers on this sheet.
- Then, after we finish all the games, you may take a toy from this treasure box.
- Do you have any questions?
- Would you like to play these games with me now?"
- Let's put your name on the sticker sheet. Do you want to write your name here or do you want me to?

First, we are going to play a game using two of these dolls [have all of the dolls (girls or boys, and moms) on the table in no particular order]. **We need one doll to be your mom and one to be you. Which doll do you want to be your mom? OK, this is your mom. Now which doll do you want to be you? OK, this is you.**

WHICH DOLLS DID THE CHILD CHOOSE? (mark an X next to their choices)

Mother:	_____ blonde	_____ brown	_____ black
Child (girl):	_____ blonde	_____ brown	_____ black
Child (boy):	_____ brown hair/white	_____ brown hair/brown	_____ black

[Experimenter does this first, and then the child]

Now, let's have your [girl/boy] doll go to the mommy doll and say "Mommy, we are going to play some games."

Show me your [girl/boy] going to the mommy doll and telling her that you are going to play some games.

That's great.

Would you like to pick one of these stickers now to put on your sticker sheet?

[put away the stickers]

We are going to play a game using these dolls.

Remember, this is you and this is your mommy.

First, I am going to tell you a story about you and your mom.

I want you to listen very carefully to the story.

Then I'm going to ask you some questions.

OK, ready?

Stories

Story A:

[*"Now I have another story for you;" or "Let's do another story;" or "Here's another story."*]

You [show the child doll] spend a lot of time drawing a picture of a family to give to your mom [show the mom doll]. You pick out colors you think are nice and you carefully draw **each** person [give picture to child to look at]. As you are about to give the picture to your mom you say to yourself, "Uh oh, one of the kids has no feet." [point to the child with no feet]

J. But you worked really hard on the picture and want to give it to her. You say, "Mommy, here's a picture for you."

Now listen to what mommy says [*click the computer to hear the recorded voice. While the voice is playing, move the dolls to "show" that the mommy doll is talking to the child while the child is listening to the voice of the mommy doll.]*

Feedback (on the computer)
 a. Neutral Content: Hmm, look what you did. You drew a picture of a family. Are you finished with it?
 b. Negative Content: There are no feet on that child. That's not what I call drawing people the right way. I'm disappointed in you.

When your mommy said that, how did that make you feel?

A1a. How **HAPPY** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

A1b. How **SAD** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

A1c. How **MAD** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

A1d. How **SCARED** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

A2. [point to the picture and say:]

How good did you draw the picture of the family? Did you draw it...

	Good	or	Not Good	
	Really		Sort of	Really
	1		2	3
				4

A3. When you draw the family again, will you draw it...

	Not Good	or	Good	
	Really		Sort of	Really

4 3 2 1

A4. When you draw something different, will you draw it...

	Good	or	Not Good
Really	Sort of		Sort of
1	2		3
			Really
			4

A5. Would you like to draw the picture of the family again?

	Yes	or	No
Really	Sort of		Sort of
1	2		3
			Really
			4

Remember that there are **no feet on the girl**? [sounding curious, say:] **Why** did you **not** draw the feet on the girl in the picture? [*open ended first*] _____

[If the child does not give you a reason, just probe by repeating the question and emphasize the word 'why' and put a check mark next to each question that you ask:]

"Yes and why do you think it turned out that way? What do you think? _____

"Why do you think you did not draw the feet on the picture of the girl" _____

A6. Did you not draw the feet on the girl in the picture **because**:

a. You are not good at drawing pictures of families.

OR

b. You did not get enough time to make the picture.

[Circle a or b. (If needed, say: "I know it may not be exactly either, but which is **more** true for you?")]

[*Experimenter holds the Mom doll and says:*]

A7. Remember when you showed the picture to your mommy? **What did she say? What** did the mommy say and do when you showed her the picture you drew without the feet on the child? [*Record verbatim the child's open ended response*]

Child's open ended response: _____

A7. [*Experimenter scores the child's response as (circle 1, 2, 3 OR 4):*]

1 = the child understood the manipulation

2 = the child's response indicates that they sort of got it

3 = the child misunderstood or just didn't get the idea; states, "I don't know"

4 = No response

A7a. How **SAD** did mommy feel when she saw the picture you drew of the girl without feet?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

A7b. How **HAPPY** did mommy feel when she saw the picture you drew of the girl without feet?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

A7c. How **MAD** did mommy feel when she saw the picture you drew of the girl without feet?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

A8. Did your mommy think you drew the picture...

	Not Good	or	Good
Really	Sort of	Sort of	Really
4	3	2	1

A9. Did your mommy **like** how you drew the picture?

	YES	or	NO
Really	Sort of	Sort of	Really
1	2	3	4

Story B:

["Now I have another story for you;" or "Let's do another story;" or "Here's another story."]

You [show child doll] spend a lot of time building a house out of blocks to give to your mom [show mom doll]. You carefully pick out which blocks you should use and you fit them together to make the house look really nice [show child house]. After the house is built, you say to yourself, "Uh oh, there are no windows in the house." [point to no windows]. But you worked really hard on the house and want to give it to her. You say, "Mommy, come look at the house I built for you."

Now listen to what mommy says [*click the computer to hear the recorded voice. While the voice is playing, move the dolls to “show” that the mommy doll is talking to the child while the child is listening to the voice of the mommy doll.*]

Feedback (on the computer)

a. Neutral Content: Oh, look at what you made. You built a house out of blocks. Did you want me to see it now?

b. Negative Content: There are no windows on that house. That's not what I call building a house the right way. I'm disappointed in you.

When your mommy said that, how did that make you feel?

B1a. How **SAD** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

B1b. How **HAPPY** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

B1c. How **SCARED** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

B1d. How **MAD** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

B2. [point to the picture and say:]

How good did you build the house? Did you build it:...

Not Good		or	Good	
Really	Sort of		Sort of	Really
4	3		2	1

B3. When you build the house again, will you build it...

Good		or	Not Good	
Really	Sort of		Sort of	Really
1	2		3	4

B4. When you build something different, will you build it...

	Not Good	or	Good	
Really	Sort of		Sort of	Really
4	3		2	1

B5. Would you like to build the house again?

	No	or	Yes	
Really	Sort of		Sort of	Really
4	3		2	1

Remember that there are **no windows on the house**. [sounding curious, say:] **Why** did you not put windows in the house you built? [*open ended first*] _____

 [If the child does not give you a reason, just probe by repeating the question and emphasize the word **'why'** and put a question mark next to each question that you use:

"Yes and why do you think it turned out that way? What do you think?" ____

"Why did you not put windows in the house?" ____

B6. Did you not put windows in the house **because**:

a. You were not given the right blocks to build the house.

OR

b. You are not good at building houses.

[Circle a or b. (If needed, say: "I know it may not be exactly either, but which is **more** true for you?")]

[Experimenter holds the Mom doll and says:]

B7. Remember when you showed the house to your mommy? What did she say? **What** did mommy say or do **when you showed her the house you built without the windows?** [Record verbatim the child's open ended response]

Child's open ended response: _____

B7. [Experimenter scores the child's response as (circle 1, 2, 3 OR 4)]:

1 = the child understood the manipulation

2 = the child's response indicates that they sort of got it

3 = the child misunderstood or just didn't get the idea; states, "I don't know"

4 = No response

B7a. How **HAPPY** did mommy feel when she saw the house you built without windows?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

B7b. How **MAD** did mommy feel when she saw the house you built without windows?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

B7c. How **SAD** did mommy feel when she saw the house you built without windows?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

B8. Did your mommy think you built the house...

	Good	or	Not Good			
	Really	Sort of	Sort of	Really		
			1	2	3	4

B9. Did your mommy **like** how you built the house?

	NO	or	YES
	Really	Sort of	Sort of
	4	3	2
			Really
			1

Story C:

["Now I have another story for you;" or "Let's do another story;" or "Here's another story."]

You [show child doll] are learning how to write your numbers and want to write out the numbers 1 to 10 to show your mom [show mom doll]. You carefully write each number and you think about what number should go next. [show child numbers]. After you finish writing the numbers you say to yourself, "Uh oh, I skipped the number 8." [point to where number 8 should be]. But you worked really hard on the numbers and want your mom to see them. You say, "Mommy, come look at the numbers I wrote."

Now listen to what mommy says [*click the computer to hear the recorded voice. While the voice is playing, move the dolls to “show” that the mommy doll is talking to the child while the child is listening to the voice of the mommy doll.*]

Feedback (on the computer)

a. Neutral Content: Ooh, look at that. You wrote your numbers. Did you want to show that to me?

b. Negative Content: The number ‘8’ is missing. That’s not what I call writing numbers the right way. I’m disappointed in you.

When your mommy said that, how did that make you feel?

C1a. How **MAD** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

C1b. How **HAPPY** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

C1c. How **SCARED** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

C1d. How **SAD** did you feel when your mommy said that?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

C2. [point to the numbers and say...]

How good did you write the numbers? Did you write the numbers:

Good		or	Not Good	
Really	Sort of		Sort of	Really
1	2		3	4

C3. When you write the numbers again, will you write them...

Not Good	or	Good
-----------------	-----------	-------------

Really	Sort of	Sort of	Really
4	3	2	1

C4. When you write something else, will you write it...

Good		or	Not Good	
Really	Sort of		Sort of	Really
1	2		3	4

C5. Would you like to write the numbers again?

	NO		or		YES
Really	Sort of			Sort of	Really
4	3			2	1

Remember that **there is no number 8**. [sounding curious] **Why** did you not write the number 8? [*open ended first*] _____

[If the child does not give you a reason, just probe by repeating the question and emphasize the word 'why' and put a check mark next to each question that you use.]

"Yes and why do you think it turned out that way? What do you think?" ____
"Why did you not write the number 8?" _____

C6. You did not write the number 8 because:

- a. You were not given enough time to write the numbers.
- OR**
- b. You are not good at writing numbers.

[Circle a or b. If needed, say: "I know it may not be exactly either, but which is more true for you?"]

[Experimenter holds the Mom doll and says:]

C7. Now, here is the mom. What did the mom say or do **when you showed her the numbers you wrote, without the number 8? [*Record verbatim the child's open ended response*]**

Child's open ended response: _____



C7. [Experimenter scores the child's response as (circle 1, 2, 3 OR 4):
1 = the child understood the manipulation
2 = the child's response indicates that they sort of got it
3 = the child misunderstood or just didn't get the idea; states, "I don't know"

4 = No response

C7a. How **MAD** did mommy feel when she saw the numbers you wrote without the 8?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

C7b. How **SAD** did mommy feel when she saw the numbers you wrote without the 8?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

C7c. How **HAPPY** did mommy feel when she saw the numbers you wrote without the 8?

NOT AT ALL	A LITTLE	SOME	VERY
0	1	2	3

C8. Did your mommy think you wrote the numbers...

	NOT Good	or	Good
	Really		Sort of
Really			Sort of
4	3	2	1

C9. Did your mommy **like** how you wrote the numbers?

	YES	or	No
	Really		Sort of
	Really		Really
1	2	3	4

Block Puzzle Instructions


Now you are going to play with some blocks with _____ (Experimenter #2).

[Put two blocks in front of the child and show the blocks, turning one around as you say:]

- “See these blocks? All the blocks have a side that is red, a side that is white, and a few sides that are red *and* white.
- I’m going to show you some pictures and I want you to make the blocks **look just like the picture.** *Remind to complete the blocks in front of the picture, not on top of the picture.*
- Most kids your age can do these puzzles pretty quickly.

- Each time I show you a picture, I want you to put the blocks together to look like the picture.

Tell me when you are finished or when you want to stop or don't want to work on the puzzle any more.

- Do you have any questions?"
- Okay, let's do a practice puzzle.  Corrected? Yes or No
- PLEASE MAKE THE BLOCKS LOOK JUST LIKE THE PICTURE
- **Good.** [Remove practice puzzle sheet. Put out puzzle # 1 and add two more blocks. Scramble all blocks.] **Now here is the first puzzle. Tell me when you are finished or want to stop working on the puzzle. Ready? GO!**

[IF THE CHILD LOOKS UP OR ACTS LIKE S/HE IS FINISHED, BE SURE TO ASK:]

ARE YOU FINISHED?

Puzzle	Cut off the Time (Yes or No)	Total Seconds (60 sec. max)	Solved (Yes or No)	Gave up or Finished
(easy) 1	Yes No		Yes No	Gave up Finished
(hard) 2	Yes No		Yes No	Gave up Finished
(hard) 3	Yes No		Yes No	Gave up Finished
(easy) 4	Yes No		Yes No	Gave up Finished

Good. Now here is the next puzzle.

Tell me when you are finished or when you want to stop working on the puzzle.

[IF THE CHILD LOOKS UP OR ACTS LIKE S/HE IS FINISHED, BE SURE TO ASK:]

ARE YOU FINISHED?

[FOR EACH PUZZLE, ALLOW A MAXIMUM OF 60 SECONDS TO COMPLETE]

[repeat for third and fourth: "Ok, let's do the next one"]

"Now, for the last puzzle, YOU get to choose. Which of these puzzles do you want to do again?" (#1-4, don't include practice design) _____

[if the child says 'none' repeat the question to encourage a choice]

"You did a great job on these puzzles.

Oh my! I made a mistake and gave you 2 very hard puzzles that even adults can't do. I am so sorry. You really did your very best on these."

You can pick a sticker now and put it on your sticker sheet.

[Experimenters switch places.]

Now, _____ (experimenter #1) will play some more games with you.

POSITIVE STORY

Now, the dolls have one more story. Remember this is you, and this is your mommy.

Story D: You have been practicing playing a hard game. You try really hard, and you play the game just right. You are a winner! You show your mommy how well you did on the game. You say: "Mommy, come look at how I won the game."

Your mommy says [*click the computer to hear the voice. While the voice is playing, move the dolls to "show" that the mommy doll is talking to the child while the child is listening to the voice of the mommy doll.*]:

ON THE COMPUTER: "You won! Look at what a great job you did playing the game. I am so proud of you. Also, I am sorry for not sounding nice before. I think you did a wonderful job on everything you did today. Good for you!"

For Neutral/Neutral:

ON THE COMPUTER: "You won! Look at what a great job you did playing the game. I am so proud of you. I think you did a wonderful job on everything you did today. Good for you!"

You can pick another sticker now and put it on your sticker sheet.

Now we have one more game to play and then we'll be finished [Proceed with the DANVA].

DANVA Voices Instructions

We think children can guess how grown-ups are feeling just by listening to their voices.

Next, you are going to hear some voices of grown-ups talking and they are all going to say the same sentence. They will say ***“I am going out of the room now, and I’ll be back later.”***

The people you hear are going to have different feelings in their voices. I want you to decide if the person sounds: **happy, sad, mad, or scared.**

OK? Do you have any questions? Good. Let’s begin.

Now here is the first one. Listen and tell me: Is the person **happy, sad, mad, or scared?**

Now here is the second sentence. Listen closely and tell me if the person is **happy, sad, mad, or scared.**

Now here is the next sentence... [administer all 13 trials in this way]

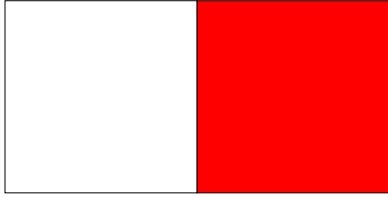
Item Number	Answer Sheet for DANVA2 - Adult			
3	Happy	Sad	Mad	Scared
4	Happy	Sad	Mad	Scared
5	Happy	Sad	Mad	Scared
6	Happy	Sad	Mad	Scared
7	Happy	Sad	Mad	Scared
8	Happy	Sad	Mad	Scared
9	Happy	Sad	Mad	Scared
12	Happy	Sad	Mad	Scared
15	Happy	Sad	Mad	Scared
18	Happy	Sad	Mad	Scared
20	Happy	Sad	Mad	Scared
23	Happy	Sad	Mad	Scared
24	Happy	Sad	Mad	Scared

Wonderful! You are all done. Now you can pick one more sticker and put it on your sheet. And you can choose a toy to take with you.

Thank you so much for doing this with us today. You were a wonderful helper!

Practice

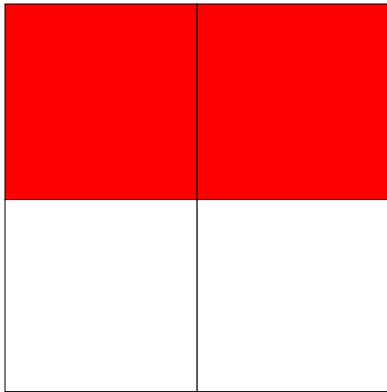
CHILD



EXAMINER

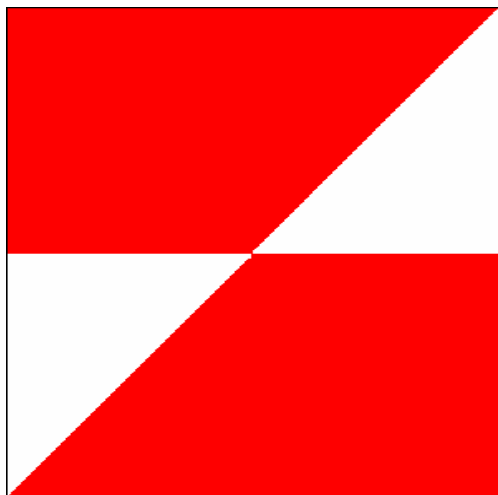
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CHILD



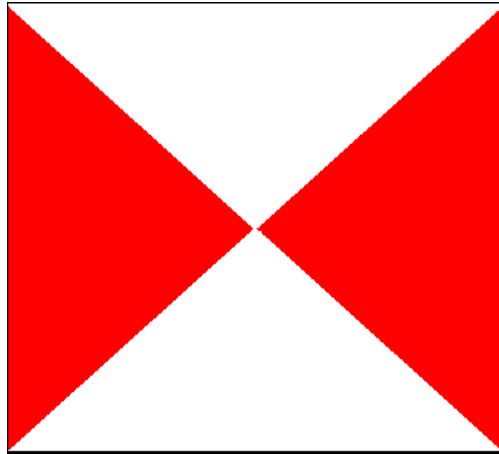
2.

CHILD



3.

CHILD



4.

CHILD

