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## Observational Measures of Parenting in Anxious and Nonanxious Mothers: Does Type of Task Matter?

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### Abstract

This study examined the relation between type of parent–child interaction task and parenting behaviors among a predominantly African American community-based sample. Twenty-five anxious and matched nonanxious ( $N = 50$ ) mothers were videotaped with their children ( $Mage = 5.8$  years) engaging in both a structured and unstructured task. Blind raters coded 3 parent behaviors hypothesized to play a role in the development of child anxiety: overcontrol, anxious behavior, and criticism. Results indicated that higher levels of overcontrol, anxious behavior, and criticism were found in the structured compared to unstructured task. Levels of criticism, among anxious mothers only, were significantly correlated across tasks. Results suggest that situation specific aspects of parent–child interaction tasks may influence parenting behaviors. These findings help explain variations in observational research in the anxiety literature and highlight the need for careful selection of parent–child tasks in future research.

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Anxiety disorders have been found to run in families, and both biological and environmental factors have been identified as potential mechanisms of transmission (e.g., Lieb et al., 2000). With respect to the latter, specific parenting behaviors have been identified as a potential risk factor for the development of child anxiety (see Wood, McLeod, Sigman, Hwang, & Chu, 2003, for review). According to developmental models of anxiety (Chorpita, Brown, & Barlow, 1998; Ginsburg & Schlossberg, 2002; Manassis & Bradley, 1994; Rubin & Mills, 1991), high levels of anxiety in parents interfere with optimal parenting practices and lead to anxiety-promoting parenting behaviors. These parenting behaviors, in turn, are hypothesized to increase the child's vulnerability to anxiety disorders.

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Three specific parenting behaviors are theorized to be more prevalent in anxious parents and also play a role in the development of child anxiety: overcontrol, modeling of anxiety, and criticism. Briefly, parental overcontrol reflects overly intrusive behavior, excessive regulation of children's activities, and a minimal level of granting of age-appropriate autonomy. Parental overcontrol is theorized to restrict the child's opportunity to develop mastery skills and, on a more subtle level, conveys to the child that the environment is too difficult or hazardous for him or her to navigate on his or her own.

Based primarily on social learning theory, parental modeling of anxiety is also believed to contribute to child anxiety as children adopt their parents' anxious behavior and fail to develop more adaptive approaches to problem solving and coping. Specifically, anxious parents are believed to display more verbal and behavioral examples of anxiety such as catastrophizing (i.e., forecasting negative or calamitous outcomes and highlighting the dangers and risks in their child's environment) and avoiding specific situations or actions (e.g., do not go out at night or attend social events), which are then modeled by their offspring.

Anxiety in parents is also thought to be associated with high levels of criticism. Craske (1999) suggested that high levels of parental criticism serve to elevate levels of trait anxiety in children, placing them at risk for developing a disorder. It is also likely that high levels of criticism lead to an increase in children's sense of uncertainty about their skills and maladaptive cognitions about themselves (e.g., poor sense of self-worth and self-efficacy), which are risk factors for anxiety disorders (Chorpita & Barlow, 1998).

Measurements of these parental behaviors have generally been limited to child or parent reports (see Wood et al., 2003, for review). However, paper-and-pencil measures are known to have several limitations. For example, the validity of these instruments has not been established, and the correlations between paper-and-pencil and observational methods are low. In part, the low association between independent observers and self-reports may be due to response biases. Anxious children and anxious parents may have a tendency to complete questionnaires in a socially desirable manner, have poor recall, or have perceptions that are distorted due to their own illness (Krain & Kendall, 2000).

In an effort to address the limitations of paper-and-pencil measures of parenting, research has begun to employ observational methods. Observational methods have several advantages, including greater objectivity, the ability to assess situational determinants of parenting, and the potential to assess reciprocal relations (Burbach & Borduin, 1986). A growing literature has examined parenting behaviors in families with a clinically anxious child (e.g., Hudson & Rapee, 2001; Siqueland, Kendall, & Steinberg, 1996). These observational studies have generally found higher rates of specific behaviors, such as overcontrol, among parents of anxious compared to nonanxious youth.

In contrast, only a handful of studies have used observational methods to assess anxious parents. Findings from these studies have not been uniform and in some cases are contradictory (Moore, Whaley, & Sigman, 2004; Turner, Beidel, Roberson-Nay, & Tervo, 2003; Whaley, Pinto, & Sigman, 1999; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002). One reason for these inconsistencies is likely related to variations in measurement. Existing studies have employed a wide range of parent-child interaction tasks, coding procedures, and operational definitions of parenting behaviors. For example, parent-child tasks have included conflict and anxiety conversations, risk-room assessments (i.e., child and parent playing on gym equipment), unsolvable anagrams, 5-min speech tasks, and an Etch-A-Sketch task. Although the differential impact of these parent-child interaction tasks on findings is unknown, understanding their influence is critical for interpreting data and

informing our understanding about the relation between parenting behaviors and child anxiety. To date, no study has examined the influence of the type of parent–child interaction task on parental behavior.

Another limitation of this literature is that these studies have been based on predominantly Caucasian families. For instance, in the Turner et al. (2003) study, approximately 90% of the sample ( $n = 43$  anxious parents; children were ages 7 to 12) were Caucasian. Similarly, in the Whaley et al. (1999) and Moore et al. (2004) studies, 78% ( $n = 18$  anxious parents; ages 7 to 14) and 79% of participants ( $n = 36$  anxious mothers; ages 7 to 15) respectively were Caucasian. Assessing parenting behaviors among anxious non-Caucasian parents is important in light of a growing literature that suggests race and culture may influence parenting behaviors and specific parenting behaviors may have different effects on child outcomes across different racial and ethnic groups (Ipsa et al., 2004). With respect to African Americans, the parenting literature is mixed; some studies indicate that African American parents place greater emphasis on authoritarian parenting strategies but that their children do not suffer the negative outcomes found in authoritarian Caucasian families (Baumrind, 1972; Hurd, Moore, & Rogers, 1995). Other studies find similar relations between parenting and child outcomes for African Americans and Caucasians (e.g., Querido, Warner, & Eyberg, 2002).

Few studies have examined the relation between parenting behaviors among African Americans and anxiety or internalizing child outcomes. Indeed, to the best of our knowledge, only one study (Ginsburg, Grover, & Ialongo, 2004) has examined anxiety-related parenting behaviors among anxious African American mothers and child anxiety. In this study, parenting behaviors were observed while mothers and their children worked on an Etch-A-Sketch task. No differences in parenting behaviors were found between anxious and nonanxious mothers. Among anxious mothers only, higher levels of criticism and lower levels of granting of autonomy were both significantly related to higher levels of child anxiety symptoms at a 6-year follow-up. This pattern of findings is consistent with existing developmental models of childhood anxiety.

In addition to examining the impact of parental behavior on child outcomes, questions about methods and measures used to assess and elicit parental behavior need to be addressed. The focus of this study is on this issue (rather than the relation between parental behavior and child outcomes). Specifically, in this study, parenting behaviors were compared across two different types of parent–child interaction tasks. Because the specific parenting behaviors selected were hypothesized to be more relevant for anxious parents, differences in parenting behaviors across tasks were examined for two sets of parents, that is, anxious and nonanxious. The first task was structured and challenging and contained a performance evaluation component. The second was unstructured with no challenge or performance component (details of each task are described below). The structured challenge task was selected because it contained elements hypothesized to increase the three parental behaviors described previously. Thus, it was expected that levels of overcontrol, anxious behavior, and criticism would be higher in the structured, compared to unstructured, task. In addition, correlations between behaviors across the two tasks were examined to evaluate whether patterns of maternal behavior were similar across tasks.

## Method

### Participants

Participants included 50 mothers (25 with an anxiety disorder and 25 matched controls with no psychiatric illness) ranging in age from 24 to 38 years ( $M = 31.1$ ) and their children ( $N = 50$ ; 26 girls;  $M$  age = 5.86 years, range = 5–8). Anxious mothers met criteria for one of the

following primary anxiety disorders: generalized anxiety disorder (1), panic disorder with and without agoraphobia (1 and 2, respectively), agoraphobia without panic (8), social phobia (6), and specific phobia (7). Maternal psychopathology was assessed using the computerized Composite International Diagnostic Interview (World Health Organization, 1990). This is a fully computerized structured psychiatric interview that specifies the exact wording and sequence of questions and provides a complete set of categories for classifying respondents' replies. The highly structured format is intended to minimize clinical judgment in eliciting diagnostic information and recording responses. Test–retest and interrater reliability studies of the Composite International Diagnostic Interview suggest good to excellent kappa coefficients for most diagnostic sections (Wittchen, 1994).

The 50 participants in this investigation constituted a subsample of a larger study of 678 children and families, representative of the entering first graders in nine Baltimore City public elementary schools (a population that is predominantly African American). From this original sample, 175 were selected using a stratified random sampling procedure to participate in an intensive study that included assessments of parental diagnosis and parent–child interactions. Of these 175, 149 agreed to participate; the 50 families included in this study were selected from this sample of 149 based on the presence of parental anxiety diagnosis and matched controls (for additional details on the original sample, see Ialongo, Edelsohn, Werthamer-Larsson, Crockett, & Kellam, 1995; Ialongo, Werthamer, Brown, Kellam, & Wai, 1999).

The racial makeup of the sample was 86% African American and 14% Caucasian. The two groups were matched on age of mother, gender of child, race, and free-lunch status of child as an estimate of socioeconomic status. No differences were found between the two groups on the percentage of single-parent households (32%), the number of negative life events experienced in the past 6 months,  $t(48) = 1.21, p = .23$ , or youth self-report of child anxiety or depression,  $t(48) = -.69, p = .49$ ;  $t(48) = .17, p = .87$ .

## Procedure

As part of a larger study, assessments of parent–child interactions occurred when children were in first grade. At this time, parents and children were videotaped while they engaged in the Etch-A-Sketch and child-directed free-play tasks (in that order) at the Baltimore Prevention Center following written informed consent (for more detailed procedures see Ialongo et al., 1999). Parenting behaviors were coded from the videotapes by raters who were blind to parent diagnostic status.

## Description of Observational Tasks and Coding

**Etch-A-Sketch task**—The Etch-A-Sketch task is a cooperative learning challenge task that requires the parent and child to work as a team to succeed. The parent and child are given one Etch-A-Sketch board and instructed to use the board to copy a series of three designs that increase in complexity. The parent and child must work together as one controls the left knob (draws only horizontal lines) and one controls the right knob (draws only vertical lines). The parent and child are allowed a maximum of 5 min to complete each design, and participants are told that their accuracy on completing or copying the designs will be checked by the experimenter.

**Child-directed free-play task**—The child-directed free-play task is an unstructured interactive task designed to allow the child to guide the flow of activity for a brief playtime with the parent. The examiner presents parent and child with a variety of games and toys that are available, making it clear that the child should direct the play and that the parent

should follow the lead of the child. The parent and child are then left alone in the playroom for 5 min.

### Coding and Scoring Procedures

Parent behaviors were rated at 1-min intervals on a 5-point Likert-type scale that incorporated both frequency and severity of the behavior, ranging from 0 (*no presence of the behavior*) to 4 (*presence of the behavior for most of the minute or several instances of severe examples of the behavior*). As time on task varied by participant on the Etch-A-Sketch task, mean scores were computed for each parental behavior for both tasks. Tapes were coded by two advanced undergraduate research assistants and one postdoctoral fellow. All coders were required to obtain 80% agreement across five sample tapes prior to coding the study tapes. Training of each coder took approximately 15 hr. One rater coded each tape and a second rater was used to conduct reliability checks that were performed on a random sample of 25% of tapes.

### Coded Behaviors

Parental behaviors and the coding procedures were adapted from existing coding systems used in child anxiety research and are defined below (Barrett, Shortt, Healy, & Hartmann, 2002; Hudson & Rapee, 2001).

**Overcontrol**—Briefly, overcontrol was defined as intrusive unsolicited help (e.g., turning child's Etch-A-Sketch knob or picking games without being asked) and directing the child's behavior with commands (e.g., "Let me do that"). Interrater reliability, evaluated by intraclass correlations using Shrout and Fleiss's (1979) Model 2 on the Etch-A-Sketch and free-play tasks, respectively, were .90 and .92.

**Anxious behavior**—The anxious behavior category included verbal and nonverbal behaviors such as expressions of fear, worry, or perfectionism (cautioning child repeatedly, catastrophizing, nail biting, hair-twirling). Intraclass correlations for the Etch-A-Sketch task were .61. For the free-play task, too few instances of the behavioral category occurred to compute the statistic.

**Criticism**—The criticism category was measured by behaviors such as insults, negative comments about child's performance and abilities, and blaming statements directed toward the child (e.g., "It's all your fault," "You screwed it up again"). Intraclass correlations for the Etch-A-Sketch and free-play tasks, respectively, were .90 and .83.

## Results

### Comparison of Mean Ratings of Maternal Behavior Across Tasks

Table 1 presents the mean scores and standard deviations across both tasks for anxious and nonanxious mothers. A series of 2 (task type)  $\times$  2 (parental anxiety status) analyses of variances revealed a significant main effect for task type for each of the three parenting behaviors: overcontrol,  $F(1, 47) = 19.45$ ;  $p < .001$ ; anxious behavior,  $F(1, 47) = 42.53$ ;  $p < .001$ ; and criticism,  $F(1, 47) = 19.65$ ;  $p < .001$ . No main effects were found for parent anxiety status, and none of the interaction terms were statistically significant. The interaction term for criticism approached statistical significance,  $F(1,47) = 3.40$ ;  $p = .072$ . Follow-up comparisons revealed that mean ratings of criticism were higher in the Etch-A-Sketch task compared to the free-play task for anxious mothers only.

<sup>1</sup>One family had missing data on the Etch-A-Sketch task and was omitted for these analyses.

### Correlations of Maternal Behaviors Across Tasks

Pearson product-moment correlations were computed for the mean behavior ratings between the two tasks. For anxious mothers, mean scores on criticism ( $r = .43, p < .05$ ) were significantly correlated; however, neither overcontrol ( $r = .20, p > .05$ ) nor anxious behavior ( $r = .26, p > .05$ ) was significantly correlated across the tasks. For nonanxious mothers, none of the behaviors were found to be significantly associated across the tasks (overcontrol,  $r = -.07, p > .05$ ; anxious behavior,  $r = -.06, p > .05$ ; criticism,  $r = -.01, p > .05$ ).

### Discussion

This study examined whether three parenting behaviors, hypothesized to play a role in the familial transmission of anxiety, varied as a function of type of parent-child observational task for anxious and nonanxious mothers. Two different parent-child interaction tasks were used, one structured challenge task and one unstructured child-directed free-play task. Consistent with our hypothesis, results revealed that the frequency of overcontrolling, anxious, and critical parental behaviors varied by the type of task. The low correlation between parental behaviors across tasks supports the contention that situational demands play a role in shaping parental behavior.

Both anxious and nonanxious mothers exhibited significantly higher rates of controlling behaviors during the structured compared to unstructured task. During the Etch-A-Sketch task, mothers in both groups exhibited more intrusive, unsolicited help (e.g., touching their child's Etch-A-Sketch knob without asking, completing the task for the child, obscuring the board from the child's view) and commanded the child to engage in certain behaviors rather than offering suggestions for engaging the child in a mutually interactive exchange. We speculate that the higher level of overcontrolling behaviors during this task was related to the time pressure, increasing difficulty of the task, and evaluation component. Alternative explanations also exist, such as different motor skill requirements in the two tasks or the sequence of task administration (i.e., the Etch-A-Sketch was always administered first). However, to the extent that aspects of the task played a critical role in shaping parental behavior, tasks that contain these characteristics may be more useful in generating behaviors that are of interest in examining the etiology of child anxiety disorders. In addition, although the external validity of this task remains to be examined, several characteristics parallel aspects of real-world situations. For example, school projects often require parental help and involvement, have a time limit (i.e., due date), and an evaluative component (i.e., grade).

Anxious behaviors were also displayed more frequently in the structured compared to unstructured task by both anxious and nonanxious mothers (with medium effect sizes). Specifically, during the structured task, a higher frequency of anxious or fearful statements, expressions of self-doubts or worries, and nonverbal expressions of anxiety (e.g., biting fingernails, tapping fingers on the table) were apparent. This was consistent with our hypothesis that a time-limited and evaluative performance task would generate higher anxiety levels. The low reliability and frequency of these behaviors, however, suggests caution in the interpretation of results. Replication is needed, and researchers interested in evaluating how parental anxiety impacts levels of child anxiety would benefit from developing tasks that contain even more prominent evaluative components and time-pressure requirements.

Maternal criticism was also more common in the structured task, though this main effect may have resulted from the higher levels of criticism displayed by anxious mothers, as the interaction term approached significance. Mothers expressed more insults and negative comments about their child's performance and abilities and engaged in more blaming of the child (e.g., "It's all your fault," "You screwed it up again") during the structured task.

Criticism was also correlated across tasks for anxious mothers only. Taken together, this pattern of results suggests that anxious mothers may be more critical in their general parenting style, which may then exacerbate under conditions that are stressful, such as being evaluated on a difficult task under time pressure. However, additional research is needed to confirm this hypothesis.

The findings have several implications for future research on measuring parenting behaviors using parent–child interaction tasks. Situational demands of parent–child interaction tasks, which appear to be one influence of parenting behaviors, may help explain contradictory findings in the literature. For instance, in the Woodruff-Borden et al. (2002) study, the tasks (unsolvable anagrams and preparing a speech) were directed toward the child, and parents were told it was “okay” for them to get involved or not. In that study, no differences were found between anxious and nonanxious parents in levels of overall control. Similarly, in the Turner et al. (2003) study, parents were told to sit in a chair and watch their child on the playground equipment. Across numerous observed parenting behaviors, only two were significantly different between anxious and nonanxious parents. Specifically, nonanxious parents stood closer and followed their children more, suggesting that anxious parents may be less engaged and withdrawn (perhaps due to their own anxiety). Based on the current findings, it appears that tasks that are structured, challenging, evaluative, and require a high level of interaction and cooperation between parent and child may elicit higher levels of specific anxiety-related parenting behaviors (i.e., overcontrol, anxiety, and criticism) for both anxious and nonanxious parents. These task characteristics were not emphasized in previous studies. Thus, researchers should carefully select or design tasks to elicit parenting behaviors of interest. Ultimately, this will clarify the nature of the relations between parenting and child outcomes.

These findings should be considered in the context of several limitations. The results are based on a sample of predominantly African American mothers of first graders from a low-income community setting rather than clinic samples of Caucasians, which typify extant research. On the one hand, the unique nature of the sample is an asset, as findings extend the current literature. However, findings may not generalize to other populations or parents of older children. Moreover, the influence of race and culture on parenting behaviors during these tasks needs to be carefully examined and compared with other populations. In light of some research indicating that African American parents may engage in more harsh or overcontrolling parenting styles, parents in this study may have been more likely than Caucasians (or other populations) to use these strategies during the structured task. Indeed, the tendency to rely on these parenting strategies may have had more of an impact on parenting than the presence of an anxiety disorder and may explain the lack of differences between anxious and nonanxious parents on the behaviors examined in this study.

The similarity in parenting behaviors between anxious and nonanxious mothers replicated our previous findings using only the Etch-A Sketch task (Ginsburg et al., 2004). Anxious mothers in our sample presented with a broad range of anxiety disorders that likely had varying degrees of impact on their parenting. Seven mothers met diagnostic criteria for a specific phobia, and phobias may have less of an impact on parenting behavior than other disorders such as panic or generalized anxiety disorder. The sample size, although similar to other studies, was small, reducing power to detect differences between groups. The variation in time spent on the structured task necessitated the use of mean scores instead of total scores, thus restricting the range of scores and possibly reducing the chances of detecting significant differences.

Future research is needed in several areas, including replication of these findings, assessment of the reciprocal nature of parent–child interactions during these tasks (e.g., do

increases in parental anxiety lead to increases in child anxiety to test social learning theory), assessment of the interrelations among these behaviors (i.e., whether increases in parental anxiety during these tasks leads to increases controlling and critical behaviors), and examination of the long-term impact of these behaviors on the development of anxiety disorders in children.

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Table 1

Comparison of Mean Scores of Parental Behaviors Across Tasks

	Anxious Parents						Nonanxious Parents					
	Etch-A-Sketch			Free Play			Etch-A-Sketch			Free Play		
	<i>M</i>	<i>SD</i>	<i>ES</i>	<i>M</i>	<i>SD</i>	<i>ES</i>	<i>M</i>	<i>SD</i>	<i>ES</i>	<i>M</i>	<i>SD</i>	<i>ES</i>
Control	.59	.55	.27	.47	.45	.45	.60	.46	.17	.24	.24	1.02
Anxious Behavior	.25	.24	.02	.05	.60	.60	.24	.27	.01	.04	.04	0.59
Criticism	.41	.39	.04	.09	.76	.76	.27	.36	.12	.27	.27	0.27

*Note:* ES = effect size.