THE RELATIONSHIPS AMONG MATERNAL PARENTING PRACTICES, MATERNAL DEPRESSION, AND CHILDREN'S LANGUAGE AND COGNITIVE PERFORMANCE FROM HEAD START THROUGH KINDERGARTEN

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CHAPTER ONE

INTRODUCTION

It is estimated that over 17 million Americans suffer from depression each year (Mayo Foundation for Medical Education and Research, 1999; National Depressive and Manic-Depressive Association, 1998). Studies of lifetime risk for Major Depressive Disorder have published varied rates; 10-25% for women and 5-12% for men (American Psychiatric Association, 1994) "Clinical depression is an affective disorder in which there are prolonged periods of sadness and inability to experience pleasure" (Zahn-Waxler, Kochanska, Krupnick, & McKnew, 1990, p. 51). Symptomatology can include eating and sleeping difficulties, changes in psychomotor activity (i.e., speech that is slowed or decreased in amount or inflection), difficulty thinking or concentrating, low self-esteem, feelings of worthlessness, sadness, guilt, etc. (American Psychiatric Association, 1994). Depression is an affective illness that can affect every aspect of a person's life. The disorder itself is disabling in that it may come with deep feelings of helplessness, inadequacy, dysphoria, and irritability, to name a few.

To better understand some of the literature, there is some terminology with which one should be acquainted. Depressive disorder is clinically referred to as unipolar, but when depressive disorder is accompanied by manic, mixed, or hypomanic episodes, it is clinically diagnosed as bipolar (American Psychiatric Association, 1994). Unipolar depression is an illness distinguished by deviation from the normal mood to episodes of the aforementioned symptomatology. Bipolar, in some cases referred to as manic-depressive, features extreme mood swings. A bipolar person may go from extreme lows like those reported by unipolar individuals to extreme highs characterized by inflated

self-esteem and reckless behavior (American Psychiatric Association, 1994). A person is considered to be experiencing major depressive disorder (MDD) if they have been suffering from depressed mood or extreme loss of interest most of the day, nearly every day for two weeks or more and experiencing four or more of the specified symptoms (American Psychiatric Association, 1994).

These characteristics in the realm of the family environment can place additional strain on everyone involved. If the depressed family member is the mother, her symptoms can interfere with her ability to maintain positivity and responsiveness when interacting with her husband and children (Goodman & Brumley, 1990; Gordon et al., 1989; Hops et al., 1987). Various aspects of her disorder may cause additional financial strain and time constraints (i.e., treatment may require time and money) (Dodge, 1990). In her marriage, she may perceive little emotional and parental support (Gelfand, Teti, & Fox, 1992). With all of these problems, parenting may seem especially difficult; she may find it arduous to be emotionally available in the context of so many stressors bearing down on her. She may also have trouble remaining sensitive, encouraging, and competent with her children (Gelfand et al., 1992). She may chose the less painful route of withdrawal from the opposition of her children and make use of the least effortful options in parenting (Kochanska, Kuczynski, & Marcella, 1989). Taken together, these patterns of interaction and additional strains in the environment can have an undeniable effect on the family system.

Children rely on interchange with their mother to learn cognitive styles, behavior in social situations, and problem-solving skills (Dodge, 1990), in addition to helping them evaluate their actions and ability (Inoff-Germain, Nottelmann, & Radke-Yarrow,

1992). Rogoff (1990) uses the analogy of an apprenticeship to describe the cognitive development of a child. This description brings with it the implication of didactic interaction. Mothers and children communicate reciprocally, extending evaluations, feelings, and expectations of each other (Inoff-Germain et al., 1992). Communication with their mother can influence the perceptions children have of themselves and their adequacy. When a depressed mother is experiencing a great number of stressors, whether related to her depression or not, she engages in less positive interaction and affirmation of her children (Gordon et al., 1989). She is also more likely to relate to her infant in anger, and with less warmth and animation (Gelfand et al., 1992). These parenting attributes compound to create a less than ideal environment for children.

Children raised in homes marked by this type of interaction and behavior have been found to be at risk for a number of negative outcomes. It is well documented that children of depressed mothers have higher rates of family and peer conflict (Adrian and Hammen, 1993), emotional, behavioral, and school problems, and psychopathology (Hammen et al., 1987). Nolen-Hoeksema, Wolfson, Mumme, and Guskin (1995) reported that children whose mothers were critical and discouraging during problem-solving tasks were less likely to be persistent. Children of depressed parents have been documented as more critical of themselves (Goodman and Brumley, 1990); this could be associated with the tendency of their mothers to also be more critical of them.

The importance of child verbal ability is demonstrated in a number of studies devoted to identifying outcomes with which it is associated. Negative outcomes such as behavioral problems (Benasich, Curtiss, & Tallal, 1993) and delinquency (Stattin & Klackenberg-Larsson, 1993) represent two such results linked with poor language ability.

Benasich et al., (1993) identified a negative relationship between verbal ability and behavior problems in four to eight-year-olds. Stattin and Klackenberg-Larsson (1993) established negative correlations between childhood verbal ability and antisocial behavior in boys and even criminality in early adulthood. Research suggesting the importance of language skills provides good reason for identifying variables associated with the development of those skills.

Reading to toddlers (Stattin & Klackenberg-Larsson, 1993), more family verbal interaction, and less parental discouragement (Norman-Jackson, 1982) are among the parenting practices that have been linked to children's superior language ability. Other factors positively associated with child verbal ability include parental speech, parent-child affect, and maternal attitudes toward parenting (Bornstein, Haynes, & Painter, 1998). Taking together this evidence on the relationship of parenting practices to children's language abilities and the evidence of negative parenting practices among depressed parents, an investigation of maternal depression, maternal parenting practices, and children's cognitive and language abilities is in order.

Purpose of the Present Study

The purpose of this study is to investigate the relationship of primary caregivers' depression and parenting to children's cognitive and language outcomes in kindergarten. While the relationship of depression to other negative outcomes is well documented (i.e., Beardslee, Bemporad, Keller, & Klerman, 1983; Hammen, 1991; Lee & Gotlib, 1989), there has been relatively little examination of children's outcomes in these areas. In addition, the present study will extend research that has focussed on cognitive and language abilities by controlling for mothers' receptive language abilities. This study is

based on the following questions: "What is the relationship between maternal depression and children's cognitive and language abilities in kindergarten independent of maternal verbal abilities?" and "Do maternal depression and parenting practices contribute independently to outcomes in these areas?" This study will utilize caregiver report data of depressive symptomatology, receptive language, and parenting skills, as well as, child report data of outcomes in the areas of cognitive and language abilities.

Hypotheses

1) Depressive symptomatology (higher CES-D scores) will be related to parenting practices: inversely to positive practices and positively to negative practices.

The following hypotheses are guided by the question of whether depression, parenting, or both contribute to child outcomes.

2) Maternal depressive symptomatology will be negatively related to children's cognitive and language abilities in kindergarten above and beyond negative maternal parenting practices and maternal language ability.
    a) The higher the maternal CES-D scores, the lower the children's PPVT-R scores, and vice versa.
    b) The higher the maternal CES-D scores, the lower the children's McCarthy Verbal, Quantitative, and Perceptual-Performance subscale scores.
3) Maternal depressive symptomatology will be negatively related to children's cognitive and language abilities in kindergarten above and beyond positive maternal parenting practices and maternal language ability.
    a) The higher the maternal CES-D scores, the lower the children's PPVT-R scores, and vice versa.

b) The higher the maternal CES-D scores, the lower the children's McCarthy Verbal, Quantitative, and Perceptual-Performance subscale scores.

4) Above and beyond depressive symptomatology and maternal language ability, negative parenting practices will predict (negatively) children's cognitive and language abilities in kindergarten.

   a) The more negative parenting practices employed, the lower the children's PPVT-R scores, and vice versa.

   b) The more negative parenting practices employed, the lower the children's McCarthy Verbal, Quantitative, and Perceptual-Performance subscale scores.

5) Above and beyond depressive symptomatology and maternal language ability, maternal positive parenting practices will predict (positively) child cognitive and language abilities in kindergarten.

   a) Higher nurturant behavior and cognitive stimulation will be associated with higher PPVT-R and McCarthy Verbal, Quantitative, and Perceptual-Performance subscale scores.

CHAPTER TWO

REVIEW OF LITERATURE

Theoretical Background

Social cognitive theory provides the framework by which the effects of maternal depression will be examined. Social cognitive theory is somewhat a product of social learning theory; thus, a brief background will be given. Baumrind's parenting styles will provide a framework for evaluating parenting as a part of the family environment.

Social Learning Theory. Social learning theory is grounded in the idea that behavior is learned from interactions in the environment (Miller, 1993). Although modern theorists would not dismiss innate potential as having no impact on development, fundamentally, social learning theorists assert that punishment, reinforcement, and social context sculpt behavior. Reinforcement can take many forms; any consequence that will be desirable in future situations reinforces behavior. Punishment is just the opposite, a consequence that the subject would not choose to repeat. Traditional learning theorists maintain that when a behavior is followed by reinforcement, the occurrence of that behavior will increase. Conversely, when a behavior is punished, its occurrence decreases. Social context is important in determining which behaviors are demonstrated as well as, which behaviors are due to reinforcement or punishment.

Social Cognitive Theory. More recently, there has been a shift toward the cognitive processes involved in children's learning. Bandura, in fact, now identifies his theory as "social cognitive theory" (Bandura, 1986, p. xii). Bandura's expansion of the theory contends that a person's psychological and biological characteristics interact with the person's behavior and the environment to create "triadic reciprocal determinism"

(Bandura, 1986, p. 23). This position recognizes that each of the three components can actually shape any of the others. An example given by Miller (1993), illustrates this reciprocity, a girl giving to a charitable organization may be gratified by sharing, thus the behavior (sharing) affects her psychologically (p. 198).

Another concept central to social cognitive theory is observational learning. Observational learning is not simply imitation of modeled behaviors; it requires more cognitive processing to occur. An observer may view modeled behavior (and learn it), but the reproduction of the behavior depends on factors such as how the observer perceives the model, reinforcement or punishment of the behavior, and the observer's physical and cognitive ability to accomplish the behavior (Bandura, 1986). An extension of observational learning, is the notion of "verbal modeling of thought processes" (Bandura, 1986, p. 74). This concept refers to the actual verbalization of the cognitive process a model goes through in devising a strategy for accomplishing something. Observers can develop their cognitive skills when a model offers the rules and strategies for coming to a solution. For instance, in solving a problem, models are more effective when they explain their thought processes, rather than just showing the final product. This allows the observer to add these skills to their repertoire for future use in similar situations.

One final social cognitive theory concept to consider in this study is that of self-efficacy. Self-efficacy is a judgment of one's own ability to accomplish something (Bandura, 1986). Regardless of the skills one may possess, a person's estimate of their ability to use those skills effectively in the task at hand will motivate or hinder the execution of the task. An example of the effect of self-efficacy can be found in a child's

perception of his math abilities. If a child knows how to add but doesn't feel that he is good at it, he may fail to correctly perform the task, or not even try. One's personal judgment of self-efficacy is formed by four types of information: accomplishment (or lack thereof) of previous similar attempts, vicarious experiences of other's accomplishments (or lack thereof) in similar events, verbal persuasion (others convince the person of his/her ability), and one's own physiological state (Miller, 1993).

Parenting Styles. In developing language and cognitive skills, a child's motivation toward achievement must be considered. According to Shaffer (1994), the parental provision of warmth, acceptance, and standards, as well as parental encouragement of independence influence healthy achievement orientation as children are mastering challenges. In studies of child social development, Baumrind (1996) has identified parenting styles that fit very well with Shaffer's description of parenting that fosters achievement orientation. The style she identifies as authoritative parenting is described as high in responsiveness and demandingness. Among the parenting practices she attributes to demandingness and responsiveness are: warmth, reciprocity, clear communication, monitoring, and clear, contingent discipline. These practices, as Shaffer (1994) suggests, are the very ones that foster a child's need for achievement. The parenting styles Baumrind (1978) identifies as less productive in the development of social competence are permissive and authoritarian. Authoritarian parents are punitive, forceful, non-reciprocal, and restrictive of independence, while permissive parents, although providing warmth, set few limits and offer little guidance. Both authoritarian and permissive parenting have been associated with diminished social competence and seem to include few of the practices Shaffer (1994) described as necessary for

achievement orientation. Authoritative parenting seems to provide many of the conditions necessary to promote a child's effort to master skills.

Applying Baumrind's concepts to this study suggests that maternal depressive symptomatology and parenting practices should be examined as a part of the family environment of the child. This study assumed that maternal depressive symptomatology is a part of a mother's psychological well-being (or lack thereof) and affects the mother's behavior (possibly parenting practices) and environment (possibly including the child). This assumption is clear in the literature, but it is also possible that her poor parenting practices could add to her depression (behavior affecting her psychological state). The literature also assumes that the family environment (possibly including maternal depression and parenting) affects the child's psychological functioning, as well as, behavior. These assumptions raise the question of whether maternal depression and parenting practices have independent effects on child outcomes.

As previously noted, parenting practices will be evaluated in this study. Due to the association between Shaffer's (1994) account of what is necessary for achievement orientation and Baumrind's (1978) categorization of practices involved in authoritative parenting, as well as, her findings of positive outcomes in other areas, the description of authoritative parenting will be used to help operationalize positive parenting practices. Practices associated with authoritarian and permissive parenting will guide operationalization of negative parenting practices.

The environment inherent in a family experiencing maternal depression will likely be less conducive to verbal and cognitive development. For instance, the literature states that depressed mothers do less teaching during structured tasks (as cited by Hops, 1995).

This reduction in teaching probably includes a deficit in verbal modeling of thought processes. Cognitive processes would then be impaired (according to Bandura) as a result of this lack of verbal modeling. A child's self-efficacy may also be at risk in a family with a depressed mother. Gordon et al. (1989) found that depressed mothers employ less confirming behavior. This lack of confirmation may lead to a child's diminished judgment of self-efficacy, and contribute further to the child's decreased attempts at cognitive tasks. Taken together, social cognitive theory and Baumrind's typology of parenting suggest that depressed mothers are less likely to fit the models of positive parenting and their children may be less likely to demonstrate positive outcomes.

Maternal Depression and Child Functioning

Research consistently reports that children of depressed parents are at an increased risk for a variety of problems (Beardslee et al., 1983). While diagnostic status may not be the defining factor, depression can affect a mother's ability to appropriately interact with her children, as well as, the amount of stress that is introduced into the family system. These factors may contribute to the well-documented risks for children of depressed parents such as stress, psychiatric disorders, and social and academic performance.

Hammen et al. (1987) and Adrian and Hammen (1993) published findings that children of depressed mothers experience a greater amount of stress than children of medically ill or normal mothers. Adrian and Hammen (1993) examined the levels of chronic and episodic stress in the families of these three groups of woman, as well as, distinguishing between unipolar and bipolar mothers. Specifically, they found children of unipolar woman experienced the greatest amount of stress. Stressors experienced are

likely not just a product of their mothers' dysfunction; for example, stressors such as marital friction may be associated with the depression in some way, and/or the children themselves may contribute to a higher number of stressors (i.e. peer conflict). Hammen, Burge, and Adrian (1991) documented that when children experience a high degree of stressors; children of symptomatic mothers are more likely to suffer from depression. In a longitudinal study of a nonreferred sample of families, Beardslee et al. (1996) confirmed that finding. They reported that when adolescents of depressed mothers are exposed to several risk factors at once (i.e. marital discord, nonaffective disorders, duration of parental major depressive disorder, etc.) their risk for developing an affective disorder increases to almost double. If both parent and adolescent have experienced several disorders, Beardslee et al. (1996) predicted a 66% to 97% chance of another occurrence of affective disorder over the 4-year period of their study. As a result of the great amount of stress and risk they face, children in these families must have exceptional coping skills to overcome the obstacles they face. Possibly, it is the depressive symptomatology within the family that impairs these skills and increases their risk for future difficulty. When a mother experiences depression as a result of the stress she's encountering, she not only models ineffective coping skills for her children; she becomes less available to provide maternal support that may help them maintain resiliency. This possibility is further substantiated by the fact that Hammen et al. (1991) showed that children who did not have depressed mothers but were experiencing high levels of stress did not suffer from similar rates of depression as children under comparable stress with symptomatic mothers.

Additional studies have shown that children of depressed parents have higher rates of affective disturbance and psychiatric diagnoses than children of normal parents. Using life-table estimates, Hammen (1991) estimates that 80% of offspring of unipolar parents will experience major psychiatric disorder before the conclusion of adolescence. Beardslee, Keller, Lavori, Staley, and Sacks (1993) found that elevated rates of disorder among children of depressed parents is not confined to parents seeking treatments for their disorders; rather, it remains apparent even when parents' illnesses are neither recognized nor treated. They documented that children of affectively disordered parents suffered from major depressive disorder at a rate of 2.6 times greater than children of well parents; with a longer duration of disorder as well (Beardslee, 1993). This study also furnished evidence that children of depressed parents are more likely than children of well families to be diagnosed with multiple disorders. Weissman et al. (1987) found that children of depressed parents have an earlier onset of depression, Beardslee et al. (1993) confirmed this.

Hammen et al. (1991) examined four groups of woman and their preadolescent and adolescent children to determine if mother and child depressive episodes were temporally related. Studying depressed (both unipolar and bipolar), medically ill, and normal women, they found children's diagnoses, especially diagnoses of major depression, were often proximally associated with mothers' diagnoses. The temporal correspondence was most significant in the unipolar group due to lower incidence of problems in the other groups. Additionally, Lee and Gotlib (1989) conducted a study of child adjustment among offspring of psychiatric patient mothers (distinguishing between those being treated for depression or other psychiatric problems), mothers with a medical

condition, and mothers being treated for no conditions (psychiatric or otherwise). Their results indicate that children of affectively ill parents have more fears, mood disturbances, and physical complaints. While the finding by Lee and Gotlib (1989) that children of depressed mothers showed an increased incidence of internalizing problems over control mothers' children is interesting, they did find an overlap between depressed and nondepressed psychiatric patient mothers. This overlap may indicate that child internalizing behaviors could be a product of maternal psychological disturbance rather than depression alone.

Although children of both bipolar and unipolar parents are at risk for increased difficulty, many studies have found that children of unipolar parents experience the most detrimental outcomes. As noted earlier, Hammen et al. (1987) and Adrian and Hammen (1993) documented that the greatest levels of stress in their studies were found in families with a unipolar parent. Anderson and Hammen (1993) found that children of unipolar parents had significantly higher rates of behavioral problems, both internalizing and externalizing, and lower scores on school behavior, academic performance, and social competence scales than bipolar, medically ill, and psychiatrically normal mothers. Their research went even further to find that over a two-year period, children of unipolar mothers had higher rates of chronic problems in each of these areas as well. While their data were not specific to unipolar parents, Hammen et al. (1987) corroborated the link between maternal depressive symptomatology and more disorders, behavioral problems, and school difficulties among children. In line with findings by Billings and Moos (1986), Lee and Gotlib (1989, 1991) found that child functioning did not immediately improve with maternal improvements in functioning; child difficulties were still apparent.

It is obvious that there is no lack of evidence for the increased risk of difficulties such as stress, depressive symptomatology, behavioral problems, and diminished social and academic performance in the children of depressed parents. Although these studies did not investigate factors directly related to language and cognitive development, they do support the current study by reporting a variety of diminished outcomes related to maternal depression.

Dodge (1990) commented on the basic theory behind research of "environmental transmission of psychopathology" (p. 3). He noted that there are two central processes that lead to impairment of child functioning. First, maternal depression produces poor parenting patterns and family strain. Second, the poor parenting patterns and problems in the family environment contribute to deficient child functioning. This section will be devoted to the parenting practices of depressed mothers. While Dodge's statement is causal, this study examines the relationship between depression and parenting as associational, not causal.

Maternal Depression and Parenting Practices

A child generally learns "by imitating, mirroring, or otherwise acquiring emotional expression, problem-solving strategies, and cognitive styles displayed by the parent during their interactions" (Dodge, 1990, p. 4). Research to date has identified a number of strains that may be present in families with a depressed mother and a number of parenting skills that depressed mothers may be lacking. Gelfand et al. (1992) conducted a study of depressed and nondepressed mothers and their infants to determine sources of parenting stress. They examined stress in the domains of both parent and child. The child specific stress domain included stress that relates to the child's

characteristics, such as his/her ability to reward, reinforce, or accept the mother. The parent stress domain included stress pertaining to her perception of her competence as a parent, as well as, her perceptions of her isolation, spousal support, etc. Gelfand et al. found that depressed mothers experienced more stress from both parent and child domains. Depressed mothers had lower levels of marital harmony and social support than their nondepressed counterparts, and more everyday problems. These are all conditions that may enter into the mothers' interactions with their children.

Gordon et al. (1989) established a connection between chronic stress and mothers' decreased likelihood of employing confirming or positive behavior with their 8-16 year olds. Depressed mothers demonstrated less sensitivity, warmth, animation, and engagement with their infants, and more anger (Gelfand et al., 1992). For the most severely depressed mothers, depression scores were the strongest correlate of parenting stress. Gelfand et al. (1992) also noted that those women who were more symptomatic demonstrated more feelings of isolation and depression concerning childrearing, while also expressing frustration at receiving insufficient parental support from husbands.

Another inadequate pattern of interaction that researchers have found in depressed mothers is the tendency to relate to their children more negatively or with more dysphoric affect. Campbell, Cohn, and Meyers (1995), for instance, determined that mothers with chronic depression engaged in fewer positive interactions with their children. Nolen-Hoeksema et al. (1995) and Goodman and Brumley (1990) echo these results. Tarullo, DeMulder, Ronsaville, Brown, and Radke-Yarrow (1995) found that, although the difference from well mothers was not significant, affectively ill mothers were higher in critical-irritable behavior with their preschoolers and their school-age children.

According to Gordon et al. (1989), unipolar mothers' verbal communication patterns were characterized by a critical and negative attitude, with lower rates of confirmatory/positive behavior. Radke-Yarrow, Nottelmann, Belmont, and Welsh (1993) supplemented these findings with evidence that unipolar and severely depressed mothers not only interacted with more negativity, but their negative affect was prolonged. Weissman and colleagues (1972, 1974) noted that depressed mothers' interaction with their children involves poor communication, strife, and a lack of affection toward their children (Weissman & Paykel, 1974). They also found that they are distant and unresponsive (Weissman, Paykel, Klerman, 1972).

In a study of family interactions, Hops et al. (1987) studied families with 8 to 16 year olds using home observations to analyze nonverbal affective behavior. Depressed women were observed to produce more sad or dysphoric affect and less happy affect with their husbands and children than did the normal mothers (Hops et al., 1987). Goldsmith and Rogoff (as cited by Hops, 1995) have shown that "dysphoric mothers displayed less sensitivity to child understanding, were less comfortable, and did less teaching during structured tasks" (p. 429).

Although dysphoric affect has been said to be characteristic of depressed mothers, they may use it in their favor. Hops et al. (1987) found that the mothers' dysphoric affect elicited a relief from the aggressive behavior of others, yet only temporarily. Biglan et al. (1985) reported that mothers' dysphoric affect also contributed to the decline in children's caring affect (as cited by Dodge, 1990). Ironically, the study by Hops et al. (1987) demonstrated that caring behavior of other family members, although seldom used, resulted in a reduction in the depressed women's dysphoric affect. They suggested

that this lack of caring affect in family members could be viewed as a skill deficit, and possibly an indication of future therapeutic avenues to be explored. Moreover, the relationship between dysphoric affect and lack of caring helps to illustrate the reciprocity of familial interactions. As described in the theoretical background, reciprocity is a factor involved in helping a child build an achievement orientation.

Another finding related to mothers' depression and diminished ability to be reciprocal is their ability to assess and communicate emotion. Free, Alcechina, and Zahn-Waxler (1996) studied the ability of well mothers and depressed mothers, with and without psychotherapy, to communicate correctly about emotions. Mothers and their preschool children were observed as they looked at and discussed a book with pictures of infants in different states of emotion. Consistently, depressed mothers without treatment were less correct than either comparison group in accurately identifying the emotions being displayed by the infants. Interestingly, children of untreated depressed mothers were also significantly less accurate than their counterparts in assessing the emotions exhibited by the infants. This inability of depressed mothers to accurately recognize children's emotional states may translate into inappropriate responses with their own children.

It has been theorized that depressed mothers may actually relate to children in a way that will minimize the potential conflict or direct opposition they will face. As was suggested earlier, Hops et al. (1987) found that mothers' dysphoric affect tended to interrupt aversive behavior; to some extent, this may be a pattern they have adopted because of its provision of relief from others' conflict. Kochanska et al. (1989) go on to propose that depressive characteristics like low feelings of control and anticipation of

failure may propel mothers to find parenting practices that make failure less salient. In addition, their negative mood may lead them to employ the least effortful childrearing practices. Possibly for these reasons, Kochanska et al. (1989) found that depressed mothers interact with their children differently at different developmental times in the child's life. They demonstrated that depressed mothers were more withdrawn and avoidant of conflict with their toddlers and more direct with their children at age 5. This may be explained by the way that children react to direction at these ages; toddlers more often demonstrate direct opposition and anger, than do five-year-olds, who are more able to control their behavior. This pattern was contrary to that of nondepressed mothers, except when normal mothers were in a negative mood. When nondepressed mothers were in a negative mood, they, too, chose to avoid effort in their parent-child interactions. Gordon et al. (1989) discovered a relationship between the mother's mood and her tendency toward critical interaction. This information lends credence to the suggestion that depressed mothers may exercise different types of interaction based on what will provide the least opposition from their children and require the least effort on their part due to their limited psychological and emotional resources.

It was mentioned in the introduction that psychomotor function may be delayed in depressed individuals. Breznitz and Sherman (1987) looked at this aspect of the symptomatology. They observed 32 mother-child dyads in a naturalistic setting, during three interactions. The observations included the mother preparing lunch, the dyad eating lunch, and the dyad during a mildly stressful waiting period in which a doctor asked them to wait while he set up to perform an anthropomorphic exam on the child. They found that mothers experiencing depression, in comparison with nondepressed mothers, talk

significantly less to their children and paused longer before responding to their children's speech. Similarly, Goodman and Brumley (1990) found overall conclusions in the literature that depressed mothers are "less reciprocal, less responsive, and less involved" (p. 32). These factors, may play a large role in the decreased functioning of children of depressed parents.

Goodman and Brumley (1990) used the HOME Inventory to evaluate the child-rearing environments (children aged 3 months to 5 years) of schizophrenic, depressed, and well mothers and determined that while schizophrenic mothers provided the poorest child-rearing environments, depressed mothers maintained environments of a lower quality than that of well mothers. The HOME Inventory also indicated that depressed mothers avoided punishment and discipline more than each of the other groups; and scored lower than well mothers on the subscales of maternal responsiveness, physical environment, and provision of play stimulation. Goodman and Brumley (1990) state that as a result of distorted modeling by the disturbed parent or because of feelings of failure in the parent-child relationship it is possible that children may become "more self-critical and less self-rewarding" (p. 31). They go on to say that this invalidating outlook may contribute to the child's willingness to give up or inattentiveness in cognitive tasks, as well as, diminishing their ability in social situations. The contribution depressed mothers make to a child's willingness to give up on cognitive tasks through parenting supports the hypotheses that parenting and depression are related, as well as, that parenting may contribute above symptomatology.

In sum, findings such as that of depressed mothers' inadequacy in relating to children in teaching situations (as cited by Hops, 1995), their diminished communication

with their children (Breznitz & Sherman, 1987), and their tendency to engage in the least difficult options for childrearing (Kochanska et al., 1989) support the hypothesis that maternal depressive symptomatology will be associated with parenting practices. Specifically, this literature supports the expectation that depressive symptomatology will be related positively with negative parenting practices and negatively with positive parenting practices.

Parenting Practices of Depressed Mothers and General Child Functioning

Tarullo et al. (1995) observed that "negative, rejecting, and hostile parenting patterns" (p 395) have continually been found in connection with elevated rates of child problems. On the other hand, Goodman and Brumley (1990) found that enthusiastic, animated, positive, involved mothers had children with higher mental development IQ scores. The following literature will provide an illustration of the outcomes associated with depressed parenting that coincides with the description Tarullo et al. (1995) provided as being related to child problems and contrary to the description Goodman and Brumley (1990) gave of mothers with children obtaining higher IQ scores.

Hamilton, Hammen, Minasian, and Jones (1993) investigated the communication styles of mothers and children aged 8 to 16. Although this study did not analyze differences in maternal groups, their sample included affectively ill, medically ill, and normal mothers and their children. They identified mothers as having either a benign or negative affective style in communicating with their children, and children as having either an autonomous, neutral, or critical coping style in relating to their mothers. Hamilton et al. concluded that mothers' affective style was connected with the coping style of her child. Mothers who employed a benign affective style were more likely to

have children that demonstrated an autonomous coping style, followed by the neutral coping style, then the critical coping style. Conversely, mothers using a negative affective style had children who were least inclined to engage in an autonomous coping style. Beyond looking for connections between affective and coping styles, they analyzed how the child's coping style may affect his/her symptomatology. A link was identified between children's coping styles and their affective symptomatology. Their affective symptomatology was most related to their critical coping style. The obvious progression indicates that mothers' negative affective style most likely leads to children's critical coping style, which is associated with his/her affective symptomatology. A negative affective style is one likely to be exhibited by depressed mothers as described in subsequent sections. Additional impacts of the mothers' negative affective style will also be discussed further in later sections.

Goodman and Brumley (1990), in the study previously mentioned, concluded that over and above a mother's diagnoses, parenting has the greatest effect on a child's functioning. The mother's disorder, however, can certainly have an effect on the quality of parenting she exhibits. In their study of schizophrenic, depressed, and well mothers, they found that depressed woman provided less "structure, guidance, or rule enforcement in the home" (Goodman & Brumley, 1990, p. 37). They also concluded that child's role play and mental development IQ was positively affected by maternal affect and responsiveness. Nolen-Hoeksema et al. (1995) investigated the effects of maternal depression on five to seven year old children's learned helplessness. Specifically, they looked at the impact of mothers' affective tone and capacity to support mastery on children's persistence and approach in problem solving. They published findings that

mothers' supportiveness is negatively related to helpless behaviors in their children, and parents' criticisms while children are problem solving may impede them from further persistence in such activities. Children with less encouraging and more negative mothers were "less enthusiastic, less persistent, and more frustrated at the puzzle tasks" (Nolen-Hoeksema et al., 1995, p. 384). Their teachers reported that these children were also less competent in school. Overall, they found that children were most likely to demonstrate learned helplessness if they had mothers who were negative and critical of them; as noted earlier, both of these attributes are found to be common in depressed mothers.

Tarullo et al. (1995) performed a study examining how mothers differed in their treatment of siblings, and in turn, how child outcomes differed. They assessed the families three times: once in preschool, once at school-age, and once at pre-teen. They found that outcomes for older siblings were predicted by maternal depression alone. Younger siblings, however, had outcomes based on differential treatment of the offspring, as well as, maternal diagnoses. Younger siblings demonstrated more symptoms if the depressed mother was less engaged or more critical-irritable toward them than the older sibling. Younger children's symptomatology fared better if they consistently received better or equal treatment than the older sibling. Externalizing problems in younger siblings were related to consistent treatment inferior to that of the older sibling or if the mother was consistently irritable-critical (defined as unfriendliness, scorn, insult, irritability, anger, impatience, hostility toward child, demanding compliance, ordering, or coercive control attempts) to both. Although birth order will not be examined in the current study, the Tarullo et al. (1995) study demonstrates that depression and parenting can have effects independent of one another.

Taken together, the literatures on maternal depression and child functioning and parenting practices and child functioning suggest that mothers' depressive symptoms are linked to their negative and critical behaviors (Campbell et al., 1995; Gelfand et al., 1992; Gordon et al. 1989; Nolen-Hoeksema et al., 1995; Goodman & Brumley, 1990; Tarullo et al., 1995). In turn, these behaviors are linked to lower persistence in problem solving and diminished competence in school (Nolen-Hoeksema et al., 1995). These findings suggest that maternal depression and negative parenting practices associated with it will be related to lower cognitive functioning in children. Furthermore, the work of Goodman and Brumley (1990) suggests that above and beyond maternal depression, negative parenting practices will be related to lower cognitive functioning in children.

Parenting Practices and Child Language and Cognitive Competence

Bornstein et al. (1998) noted that "time, energy, patience, and intellectual commitment" (p. 389) are all necessary for developing children's vocabulary. Although, patterns emerge when studying children's language skills, like most areas of study, there are generally remarkable individual distinctions throughout any group. There have been a number of researchers who have investigated the individual and environmental factors that may contribute to these variations.

Some studies have identified parental speech as a significant influence on the development of child verbal abilities. Hoff-Ginsberg (1986) found that children learn and mimic verbalizations they hear. She noted that some types of questions posed by mothers, particularly those that require a child to think to respond, were positively related to children's language growth. Similarly, Huttenlocher, Haight, Bryk, Seltzer, and Lyons (1991) documented that children's vocabulary was related to parental speech. For

instance, they found a positive correlation between mothers' use of object words and the children's use of those words. Hardy-Brown and Plomin (1985) analyzed data from adoptive infants and their biological and adoptive parents in the Colorado Adoption Project. Among their findings was a relationship between the verbal behavior of adoptive mothers and the communicative competence of their infants. This link is significant because it reflects the contribution to children's language of maternal verbal behavior that is not related to biological factors.

Bornstein et al. (1998) studied a variety of factors that may be related to child vocabulary competence (as measured by observations of child's speech with mothers (word roots, mean length of utterance), the Reynell Developmental Language Scales-Second Revision (verbal comprehension and expression), and maternal reports from the Vineland Adaptive Behavior Scales (expressive and receptive communication skills) and the Early Language Inventory (expressive vocabulary)). Among the influences they found was maternal conversational vocabulary. Maternal vocabulary in conversation was positively associated with child verbal comprehension and maternal reports of child vocabulary. Bornstein et al. (1998) also reported an indirect effect from maternal verbal IQ, maternal knowledge of child development, and socioeconomic status due to the positive relationship of these factors to maternal vocabulary.

In a related study, Bouchard, Lykken, McGue, Segal, and Tellegren (1990) published that even after controlling for verbal stimulation in the home environment, parental intelligence was linked with child vocabulary skills. In the previously mentioned Hardy-Brown and Plomin (1985) study, the adopted children's vocabulary competence was also significantly related to the biological mothers' general intelligence.

There was not a significant relationship between the adoptive mothers' intelligence and the children's vocabulary. This suggests a biological influence on children's vocabulary competence in addition to the environmental influence mentioned earlier. Evidence such as this demonstrates the need to control for mother's language abilities when examining the relationship between environmental factors and children's language outcomes.

In addition to biological, intelligence, and verbal usage factors, parenting attitudes have been found to be associated with development in cognitive areas. Vibbert and Bornstein (1989) discovered a positive relationship between toddler vocabulary and mothers' positive social interaction combined with instruction. The Bornstein et al. (1998) study mentioned earlier also found a positive correlation between maternal parenting attitudes and child vocabulary competence. Maternal attitudes toward parenting (as assessed by "self-reported competence, satisfaction, role balance, and social and didactic interaction styles" (Bornstein et al., 1998, p. 389)) most significantly affected child vocabulary competence by influencing child social competence. They also found mothers' personality acted on child vocabulary competence by influencing child social competence.

In a slightly different focus, Allison and Watson (1994) investigated the interaction of adult storybook reading and child's emergent reading. They found that "the earlier a parent began reading to their child, the higher the child's emergent reading level was at the end of kindergarten" (p. 68). In a Swedish study by Stattin and Klackenberg-Larsson (1993), the researchers found positive correlations between parents' reading to children as toddlers and their later language ability.

Hess, Holloway, Dickson, and Price (1984) examined the relationship between maternal behavior measured when their children were just over 3 ½ years of age and children's later achievement (indicated by measures of children's school readiness at kindergarten and Iowa Test of Basic Skills [ITBS] in the sixth grade). Hess et al. (1984) documented a number of significant relationships between the mother and child variables. The maternal behaviors that positively correlated with both school readiness and ITBS scores in the sixth grade were: maternal expectations, requests for verbal responses in teaching tasks, communications efficiency, and affective rating. Additional positive correlations were found between school readiness and both maternal use of rules and use of technical descriptors in communication tasks. Negative associations with school readiness and ITBS scores were demonstrated for use of authority-based appeals, directiveness in teaching tasks, and criticizing child errors. Communication efficiency is one variable included in the best five-variable cluster for school readiness that is of particular interest in the current study because maternal communication will be examined in a mother-child teaching task. Two variables included in the best four-variable cluster for ITBS scores are mother-child affective relationship and maternal communication efficiency; depressed mothers deficiencies in these areas are well supported in the literature and will be examined in the current study.

Barocas et al. (1991) had similar findings in relation to maternal affect and four-year-olds. They found that positive maternal affect, as well as, involved maternal affect correlated with child IQ. The opposite correlation with child IQ was found for negative and flattened maternal affect. While Barocas et al. (1991) did conclude that a notable portion of the variance in IQ was explained by environmental risk factors, the variance

attributed to maternal affective qualities could demonstrate a mediating relationship between the risk factors and child IQ. These studies demonstrate the importance of several parenting behaviors that will later be discussed as deficits in depressed mothers.

In a longitudinal study of children's school-relevant cognitive functioning, Estrada, Arsenio, Hess, and Holloway (1987) examined maternal affective quality. To assess child cognitive functioning, they used measures of mental ability, school readiness, IQ, and school achievement. Even when controlling for maternal IQ and socioeconomic status, researchers found positive correlations between mother-child affective relationship and the cognitive outcomes at age 4, age 5, age 6, and age 12.

In short, the literature in the area of parenting practices and child language and cognitive outcomes suggests that factors such as parental speech (Bornstein et al., 1998; Hardy-Brown & Plomin, 1985; Hoff-Ginsberg, 1986; Huttenlocher et al., 1991), maternal intelligence (Bornstein et al., 1998; Bouchard et al., 1990; Hardy-Brown & Plomin, 1985), early parental reading to children (Allison & Watson, 1994; Stattin & Klackenberg-Larsson, 1993), parental attitudes (Bornstein et al., 1998), and maternal affect (Barocas et al., 1991; Estrada et al., 1987; Hess et al., 1984) all have a positive affect on child language and cognitive ability. Parental criticism (Hess et al., 1984), directiveness in teaching tasks (Hess et al., 1984), authority based appeals (Hess et al., 1984) and negative maternal affect (Barocas et al., 1991); however, all resulted in negative associations with children's language and cognitive abilities. Although the literature presented provides data for a variety of age groups, taken together, the literature demonstrates that competent language and cognitive abilities in children requires parenting that is contrary to the parenting practices exhibited by depressed mothers. The

lack of the necessary positive parenting practices and presence of the negative practices in depressed mothers suggest that children of depressed mothers will demonstrate deficits in language and cognitive functioning as compared to children of nondepressed mothers. Combining the findings of all research presented, the reported evidence provides a basis for the hypothesis that, above and beyond depressive symptomatology, negative parenting practices will be negatively correlated to children's cognitive abilities.

CHAPTER THREE

METHOD

Participants

This study utilizes a portion of a longitudinal data set comprised of 167 primary caregivers and their four-year-old children. The data set follows four-year-old children in Head Start through completion of their second grade year. Families were selected based on their enrollment in one of eight U.C.A.P Head Start programs in rural north-central Oklahoma communities. Child participants belonged to one of two cohorts: cohort one attended kindergarten in 1996-1997 and cohort two attended kindergarten in 1997-1998. Primary caregivers in this data set were of various relationships to the target child: 162 were mothers, 3 were grandmothers, and 2 were stepmothers.

This particular study will examine data collected from the child's preschool year of Head Start through the children's kindergarten year; 53 families did not continue to participate after the children's Head Start year. This investigation analyzed data from 112 dyads of the original data set. This number includes only complete data sets from Head Start through the Kindergarten year (114). It also reflects the exclusion of two dyads comprised of a caregiver other than the biological mother; both were grandmothers of the target child. The removal of non-mother dyads was done to eliminate unknowns such as how long the child had been in this custody.

The age of mothers as of September 1 of their child's pre-kindergarten year in Head Start ranged from 19 to 41 years ($\underline{M}$=28.8). Educational attainment for the mothers is as follows: 17% did not have a high school diploma, 36% were high school graduates,

12% were vocational-technical graduates, 28% had some college, and 7% were college graduates. The median gross monthly household income was in the $1000-$1499 range.

Fifty-five percent of the children in this data set were male, 45% were female. All children were between 4 and 5 years of age upon entering their Head Start year. Children's ethnicity was determined to be of color if either biological parent belonged to an ethnicity of color. The ethnic composition of the children involved in this study was as follows: 66% Caucasian, 31% Native American, 7% African American, 4% Hispanic, 4% triethnic. The following discussion of procedures will only encompass this particular sample.

Procedure

The National Institute of Mental Health (NIMH) and the Administration on Children, Youth, and Families (ACYF) provided grant funding for the project from which this data is taken.

Recruitment for this study was purposive; flyers were distributed in the target Head Start sites and representatives of the project attended parent meetings to recruit participants. Informed consent was gained upon parental commitment to the study, as well as, before any data was collected each semester.

Researchers administered questionnaire packets to mothers and distributed and collected questionnaires about the target child from teachers. Researchers also videotaped structured interaction involving the caregiver and child. Data collection for cohort 1 began with six Head Start sites in the fall of 1995. Cohort 2, beginning Fall 1996, was comprised of children from each of the original sites and two additional sites.

Caregivers and teachers were compensated monetarily for participation in the project. Compensation varied based on time and effort involved in participation.

Head Start-Fall. Caregivers' packets were administered in the presence of the researcher at each caregiver's convenience. The packets included a number of questionnaires designed to collect demographic, parenting, and child related information. Among them were the Demographic Information Questionnaire, the Center for Epidemiologic Studies Depression Scale (CES-D), and the Adult-Adolescent Parenting Inventory (AAPI). In addition to the information packets, caregivers completed the Peabody Picture Vocabulary Test-Revised (PPVT-R).

Head Start-Spring. During the spring of each child's Head Start year, caregivers and children participated in the Mother-Child Teaching Task (MCTT); this session was videotaped. Additionally, mothers completed the Computer-Presented Parenting Dilemmas (CPPD). The PPVT-R was administered to the target child within 3 weeks of this session. Data collection is summarized by semester in table 1 following a brief description of each semester.

Kindergarten-Fall. Caregivers completed a questionnaire packet containing the same instruments previously administered (demographics and AAPI) with the addition of other instruments. Caregiver data collected this semester was not utilized in this study.

Kindergarten-Spring. The PPVT-R and the McCarthy Scales of Children's Abilities (McCarthy) were each administered to the target child. In addition, teachers completed questionnaires pertaining to the target children. The latter measures are not included in this report.

Table 1

Summary of Data Collection

	Head Start-Fall	Head Start-Spring	Kindergarten-Fall	Kindergarten-Spring
Demographics	X*		X	
CES-D	X*			
AAPI	X		X	
PPVT-R-Mom	X*			
MCTT		X*		
CPPD		X*		X
PPVT-R-Child		X*		X*
McCarthy				X*

*Denotes data utilized for the current study.

Measures

Demographic Information Questionnaire. Extensive demographic information was collected from the participants in the study. For the purposes of this study, income will serve as a control variable.

Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D (Radloff, 1977) is a 20-item scale designed to measure depressive symptomatology. The instrument is a self-report scale that requires the respondent to report affective symptoms she has experienced in the past week. The recommended score marking depressive characteristics is 16 or greater with a maximum possible score of 60. Factor analysis in

the development of the instrument revealed four factors on which the individual items loaded: depressed, positive, somatic, and interpersonal.

The CES-D has high internal consistency (about .85 in the general population) and acceptable test-retest reliability (.54 at 6 months). The measure has correlated highly with other measures of depression, demonstrating validity. One study analyzing the discriminability of the CES-D and Beck Depression Inventory (BDI) found a correlation between the two of .86 (Santor, Zuroff, Ramsay, Cervantes, and Palacios, 1995).

In the current sample, reliability analysis revealed acceptable internal consistencies (coefficient alpha) within most of the four factors. Alphas are as follows: depressed (.89), positive (.77), somatic (.76), and interpersonal (.36). The reliability for all 20 items of the CES-D is .77. In the current sample, 89 mothers (80%) scored 16 or greater on the CES-D. This indicates a substantial amount of depressive symptomatology within the sample.

Adult-Adolescent Parenting Inventory (AAPI). The AAPI (Bavolek, 1984) is designed to assess parenting attitudes. The 32-item self-report questionnaire incorporates four subscales: inappropriate expectations, lack of empathy, value of physical punishment, and parent-child role reversal. The AAPI requires the respondent to provide information about parenting beliefs and behaviors using a 5-point Likert scale ranging from "1=strongly agree" to "5=strongly disagree", with higher scores indicating poorer parenting attitudes. For the current study, the AAPI was used to validate the CPPD.

Reliability, as well as, content and construct validity are acceptable. According to Bavolek (1984), internal consistency among the subscales for adults and adolescents (respectively) are as follows: inappropriate expectations (.75, .70); lack of empathy (.82,

.75); belief in physical punishment (.85, .81); endorsement of role reversal (.86, .82). One-week test-retest reliability is given for the adolescents in the standardization sample. It, too, is high overall: lack of empathy (.89); belief in physical punishment (.69); endorsement of role reversal (.85). Inappropriate expectations, however, demonstrated lower retest reliability (.39, Bavolek, 1984).

Computer-Presented Parenting Dilemmas (CPPD). The CPPD is patterned after the Computer-Presented Social Situations (CPSS) by Holden and Ritchie (1991). It allows the mother to report on the frequency of and responses to specific social situations. The program consists of 15 interactive vignettes featuring the names of the mother, child, and mother's partner in various common situations that the parent may encounter. Included among the 15 vignettes are three each that assess frequency and family reaction to peer interaction, child distress, and child noncompliance. A few examples of the dilemmas include: the child's refusal to eat breakfast (noncompliance), the child getting upset because s/he has spilled juice on the table (distress), and parental monitoring of the child playing with a friend in his/her room (peer interaction). In each of the dilemmas, mothers answer on a 7-point Likert-type scale about how often they would respond to the child's behavior with the given responses, with one representing "never" and seven indicating "always". Examples of responses are: ignore, time out, yell, tell the child "because I said so", bribe, and spank with additional monitoring strategies such as watch from a distance and join in for the peer interaction dilemmas. High scores indicate that the mother is higher in that behavior.

Factor analysis was done to reduce responses to each of the three types of vignettes discussed earlier (child distress, child noncomplience, and peer monitoring).

This resulted in 17 factors that were then reduced by higher-order factor analysis. This final analysis produced five higher-order factors that accounted for 63% of the variance. The resulting factors and their internal consistencies are as follows: *rejecting* comprised of permissive-neglectful in response to child hitting and hostility in response to child distress (α=.75); *authoritarian* comprised of power assertion, punitive reasoning, ignore in response to child noncompliance, power assertion in response to child hitting and ignore in response to child distress (α=.75); *nurturant* comprised of nonpunitive reasoning in response to noncompliance, join in child's play, complimenting child on positive play, and warmth in response to distress(α=.87); *bribing* comprised of bribing in response to noncompliance and bribing in response to child distress (α=.80); and *time-out* comprised of time-out in response to noncompliance and time-out in response to child distress (α=.69) (Fore, 1999). Time-out will not be analyzed in this study.

The AAPI was used as a validity measure for the CPPD. Rejecting and authoritarian correlated significantly (positively) with each of the AAPI subscales. Nurturant correlated significantly (negatively) with all subscales except inappropriate expectations. Bribing correlated significantly (positively) with lack of empathy and role reversal. The results of these correlations are found in table 2.

Table 2

Correlation of AAPI with CPPD

	Rejecting	Authoritarian	Nurturant	Bribing
Lack of Empathy	.44**	.40**	-.29**	.19*
Physical Punishment	.41**	.45**	-.29**	.13
Role Reversal	.28**	.34**	-.22*	.26**
Inappropriate Expectations	.34**	.35**	-.15	.06

*p≤.05. **p≤.01

Mother-Child Teaching Task (MCTT). The MCTT (Sigel & Flaugher, 1980) affords the opportunity to observe a mother and child while attempting to fold an origami boat. The task is videotaped for approximately 5 minutes. The dyads are given a complete illustration of how to fold the paper, and the mother is told that she should not fold the paper herself, but may touch it. No instructions were given regarding verbal interaction.

Transcription of all utterances (mother and child) was completed for the first 4 minutes of each MCTT. Then, two coders blind to the research hypotheses scored every maternal utterance. Total number of maternal utterances was recorded. In addition, every maternal utterance was coded for maternal teaching strategy: maternal perspective taking, modulated control, maternal structuring, feedback, direct commands, mother takes over task, and maternal intrusive control. The Coding Manual for the Mother-Child Teaching Task (Hubbs-Tait, Miller, & Steele, 1996) was adapted from a coding system

by Ianotti (1985). Interrater reliability for maternal behavior codes are reported in Table 1 (Miller, 1998).

Table 3

Interrater Reliability Coefficients for Maternal Behavior Codes

Expressions of concern about child's feelings, state, or nontask needs (P1,P9)	.64	Inquiry about child's perceptions, thoughts, or motives (P4)	.96
Direct Command (C1)	.97	Using questions to direct child's behavior (C2-Q)	.99
Informative feedback (F1)	.96	Positive feedback (F2)	.98
Mother takes over task (E1-M)	.78		

Peabody Picture Vocabulary Test-Revised (PPVT-R). The PPVT-R (Dunn & Dunn, 1981) is a receptive vocabulary measure standardized for use with persons 2 ½ through 40 years of age. Each Standard American English word is presented orally, while the respondent chooses (by pointing) one of four black and white illustrations that best represents the given word.

Internal consistency reported by Dunn and Dunn (1981) is acceptable (.67 to .88). Validity of the instrument is also sufficient. The PPVT correlated highly with a number of vocabulary and individual intelligence tests, for instance, the median correlation of the PPVT with the Stanford-Binet Vocabulary Subtest was .72 and with the Wechsler Adult Intelligence Scale (WAIS) Full-Scale was .72. Because the PPVT also correlates highly with the PPVT-R (.70 median), it can be expected that the PPVT-R correlates at least moderately with these types of measures.

McCarthy Scales of Children's Abilities (McCarthy). The McCarthy (McCarthy, 1972) is a standardized measure of cognitive ability designed for use with children ages 2 ½ to 8 ½ years. It's five subscales (Verbal, Perceptual-Performance, Quantitative, Memory, and Motor) are assessed through the administration of 18 mental and motor tests. The Motor test was not administered in this data set. Tests for the Memory Scale are distributed throughout the Verbal, Perceptual-Performance, and Quantitative Scales. In addition, a General Cognitive Index (GCI) is obtained by combining the scores of the Verbal, Perceptual-Performance, and Quantitative scales. The memory subscale and GCI will not be analyzed for the purposes of this study.

Internal consistency for each age group 2 ½ through 8 ½ years are generally high. The average reliability correlation across all age groups for each of the relevant subscales are as follows: Verbal Scale .88, Perceptual-Performance Scale .84, and Quantitative Scale .81 (Paget, 1985).

Operationalization of Hypotheses.

Hypothesis 1 states that depressive symptomatology will be related to parenting practices: inversely to positive practices and positively to negative practices. Maternal depressive symptomatology for all hypotheses will be determined by CES-D total score. Parenting practices for all hypotheses will be assessed using factors of the CPPD and behaviors coded from the videotaped MCTT.

Positive parenting practices are defined by specific codes for maternal behaviors during the MCTT. Maternal utterances used to operationalize positive parenting are as follows: total number of maternal verbalizations (maternal verbalizations), use of questions related to cognitions (cognitions inquiry) (P4 codes from Hubbs-Tait, Miller,

and Steele, 1996-see appendix) and using questions to direct child's behavior (directive questions) (C2-Q codes-see appendix), expressions of concern about child's feelings, state, or nontask needs (concern) (P1,P9-see appendix), informative feedback (F1 codes-see appendix) and positive feedback (F2 codes-see appendix). Finally, positive parenting is identified by higher scores on the CPPD factor of nurturant.

Negative parenting practices are operationalized first as codes for particular types of maternal behavior during the MCTT: mother folds paper herself (mother takes over task) (E1-M codes-see appendix) and direct commands (C1 codes-see appendix). Finally, negative parenting practices were operationalized by the CPPD factors of rejecting, bribing, and authoritarian.

Hypothesis 2 states that maternal depressive symptomatology will be negatively related to children's cognitive and language abilities in kindergarten, above and beyond negative maternal parenting practices and maternal language ability. Household income and child language ability in Head Start will serve as control variables. Maternal depressive symptomatology, as previously stated, will be determined by CES-D scores of 16 or greater. Children's language and cognitive abilities will be assessed by their performance on the PPVT-R and McCarthy subscales in Kindergarten. Children's cognitive ability in Head Start is assessed by t heir PPVT-R scores that year. Negative maternal parenting practices are operationalized as previously described, while maternal language ability is determined by their PPVT-R performance during the child's pre-kindergarten year of Head Start. Household income is taken from demographic information also collected in the child's pre-kindergarten year of Head Start.

Hypothesis 3 states that maternal depressive symptomatology will be negatively related to children's cognitive and language abilities in kindergarten, above and beyond parenting practices and maternal language ability. Again, household income, maternal language ability, and child Head Start language ability will serve as control variables. Maternal depression, as noted previously, will be characterized by total score on the CES-D. Maternal parenting practices are also operationalized in the previous hypothesis. Maternal language ability is determined by the mother's score on the PPVT-R. Children's language abilities for all hypotheses will be defined by the children's kindergarten performance on the PPVT-R and the McCarthy Verbal subscale. Children's cognitive abilities will be assessed using the McCarthy Quantitative and Perceptual-Performance subscales. Child language ability in Head Start is determined by scores on the PPVT-R during the preschool-year of Head Start. Household income is taken from demographic questionnaires from the child's Head Start year.

Hypothesis 4 states that above and beyond depressive symptomatology and maternal language ability, negative parenting practices will predict (negatively) children's cognitive abilities in kindergarten. Child language ability in Head Start and household income are again control variables. This hypothesis will be tested using the operationalizations of depressive symptomatology, negative parenting practices, maternal language ability, and children's cognitive abilities previously given. Control variables are also examined using the definitions previously stated.

Hypothesis 5 states that above and beyond depressive symptomatology and maternal language ability, maternal positive parenting practices will predict (positively) child cognitive and language abilities in Kindergarten. Maternal depressive

symptomatology, language ability, positive parenting practices, and children's cognitive and language abiliites will be operationalized as described previously. Also operationalized as above are child language ability in Head Start and household income.

CHAPTER FOUR

RESULTS

Correlations were run for each hypothesis to determine the variables to be used in regressions. Regressions were then conducted for each hypothesis using the variables previously determined to be significant at $p \leq .05$. One exception to this rule was in the case of hypothesis two, the regression predicting child Verbal score on the McCarthy included one parenting practice (authoritarian) that had a relationship marginally significant at only $p \leq .10$. This was included because the mag.nitude of that correlation was the same as that of others that reached significance; due to more mothers omitting responses to the items constituting the authoritarian factor statistical power was reduced.

Hypothesis 1

Recall that hypothesis one stated that depressive symptomatology would be related to parenting practices: inversely to positive practices and positively to negative practices. In order to test this hypothesis, correlations of both negative and positive parenting practices with depressive symptomatology were performed. This analysis revealed a significant relationship between the CES-D scores and the parenting practices of rejecting, bribing, cognitions inquiry, informative feedback, and positive feedback (see table 4). While most of the significant relationships were directionally congruent with the hypothesis, two positive parenting practices (cognitions inquiry and informative feedback) showed significant positive relationships with the maternal CES-D scores.

Because regressions require only one dependent variable and running a separate regression for each of the parenting practices would inflate alpha, a single regression was performed using significantly correlated parenting practices as independent variables and

Table 4

Correlation of Parenting Practices with Depressive Symptomatology

	Mom PPVT	H Inc	Mat Ver	Rej	Auth	Nur	Brib	Con	Cog Inq	Dir Com	Dir Ques	Inf Feed	Pos Feed	Moth Takes
Mother PPVT-R														
Household Income	.07													
Maternal Verbal-izations	.07	.00												
Rejecting	-.09	-.09	-.05											
Authoritarian	-.14^{+}	-.14^{+}	-.03	.63**										
Nurturant	.00	.09	-.04	-.49**	-.52**									
Bribing	-.33**	.35^{+}	.02	.19*	.28**	-.02								
Concern	.12^{+}	-.03	-.11	.11	.11	-.07	.07							
Cognitions Inquiry	.01	-.04	.05	-.08	-.10	-.07	.02	-.05						
Direct Command	-.16*	.03	.10	.19*	.42**	-.07	.00	-.03	-.20*					
Directive Questions	-.02	.07	-.08	-.21*	-.10	-.17*	-.01	.15^{+}	.22*	-.34**				
Informative Feedback	.06	-.02	-.04	-.09	-.15^{+}	.12	-.12	-.01	-.17*	-.25**	-.13^{+}			
Positive Feedback	.02	.01	.01	.01	-.04	.12	.04	.12	.08	-.17*	-.02	-.31**		
Mother Takes Over Task	.03	.05	.14^{+}	.14^{+}	.17*	-.11	-.02	-.14^{+}	-.06	.01	.03	-.08	-.25**	
CES-D	**-.22****	**-.24****	**-.12**	**.30****	**.16^{+}**	**.01**	**.35****	**-.14^{+}**	**.17***	**-.01**	**-.06**	**.19***	**-.16***	**-.01**

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

CES-D scores as the dependent variable. This analysis yielded a significant R^2 for the relationship between depressive symptomatology and the parenting practices. The resulting regression indicated that above and beyond household income and maternal language ability, the selected parenting practices accounted for a significant portion of the variance in CES-D scores. In addition, four of the parenting practices remained significant ($p \leq .05$) beyond the effect of the control variables. These results can be seen in table 5.

Table 5

Hierarchical Regression to Identify Parenting Practices Related to Depressive Symptomatology (CES-D)

Block	Predictors	Standardized Beta	R^2 Change	df
1			.06^{+}	2, 100
	Income	-.21*		
	PPVT-R (mother)	-.10		
2			.20**	5, 95
	Rejecting	.28**		
	Bribing	.25*		
	Cognitions Inquiry	.23*		
	Informative Feedback	.20*		
	Positive Feedback	-.08		

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

Hypothesis one stated that above and beyond maternal language and household income, depressive symptomatology would be related to parenting practices: inversely to positive practices and positively to negative practices. This hypothesis was only supported in part. Two negative parenting practices (rejecting and bribing) remained significantly and positively related to maternal CES-D scores beyond the control variables of income and maternal language. The positive parenting practices hypothesized to vary negatively with maternal CES-D scores did not do so. In fact, cognitions inquiry and informative feedback were found not only to vary significantly, but positively with depressive symptomatology above and beyond the control variables (see table 5).

Hypothesis 2

Hypothesis two stated that maternal depressive symptomatology would be negatively related to children's cognitive and language abilities in kindergarten, above and beyond negative maternal parenting practices, maternal language ability, child language ability in Head Start, and household income. Analysis of this hypothesis began with the correlation of negative parenting practices with child outcomes as described in the operationalization of each. This resulted in significant relationships among several parenting practices and child outcome measures. Each negative parenting practice correlated significantly ($p \leq .05$) with at least two child outcome variables. These results are depicted in table 6. The child Head Start PPVT-R scores were included in the correlation because children's language ability in Head Start would be used as a control variable in the following regressions. The children' Head Start PPVT-R scores correlated

significantly ($p \leq .05$) and negatively with all but one (direct commands) of the negative parenting practices (see table 6).

Table 6

Correlation of Negative Parenting Practices with Child Outcomes

	Mom PPVT	CES Tot	H Inc	Rej	Auth	Brib	Dir Com	Moth Takes	PPVT HS	PPVT K	Ver	Perc
Mother PPVT-R												
CES-D Total	-.22**											
Household Income	.07	-.24**										
Rejecting	-.09	.30**	-.09									
Authoritarian	-.14^{+}	.16^{+}	-.14^{+}	.63**								
Bribing	-.33**	-.33**	.35^{+}	.19*	.27**							
Direct Command	-.16*	-.01	.04	.19*	.42**	.00						
Mother Takes Over Task	.03	-.01	.05	.14^{+}	.18*	-.02	.01					
PPVTHS	.19*	-.03	.11	-.21*	-.24**	-.18*	-.11	-.27**				
PPVTK	.31**	-.01	.19*	-.12	-.19*	-.26**	-.04	-.21*	.71**			
Verbal	.18*	-.05	.22*	-.16*	-.16^{+}	-.13	-.08	-.16*	.58**	.62**		
Perceptual	.11	-.19*	.14^{+}	-.27**	-.38**	-.03	-.26**	-.25**	.40**	.33**	.38**	
Quantitative	.11	-.08	.14^{+}	-.08	-.09	.07	-.17*	-.23**	.39**	.38**	.55**	.48**

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

Note: some correlations are identical to Table 4.

A regression was conducted for each child outcome. Parenting practices significantly correlated with each outcome were used in the respective regression; thus

independent variables for each outcome were not identical. Regression for children's Head Start language abilities included mother takes over task, rejecting, bribing, and authoritarian. After controlling for household income and maternal language abilities, mother takes over task was the only negative parenting practice to remain significantly related to children's Head Start language ability. Maternal depressive symptomatology was not significantly related to children's Head Start language abilities above parenting practices. The regression for this dependent variable (PPVT-R) is represented in table 7.

Table 7

Hierarchical Regression Predicting Child Head Start Language Abilities (PPVT-R) - Hypothesis 2

Block	Predictors	Standardized Beta	R^2 Change	df
1			.06•	2, 100
	Income	.13		
	PPVT-R (mother)	.21*		
2			.13**	4, 96
	Mother Takes Over Task	-.28**		
	Rejecting	-.09		
	Bribing	-.16		
	Authoritarian	-.05		
3			.00	1, 95
	CES-D	.04		

•p≤.10. *p≤.05. **p≤.01.

Regressions performed for children's kindergarten language abilities (PPVT-R) included three negative parenting practices previously determined as significantly related to this dependent variable: mother takes over task, bribing, and authoritarian. After controlling for household income, maternal language ability, and children's Head Start language ability, the negative parenting practices did not remain significantly related to the children's PPVT-R scores in kindergarten. Maternal depressive symptomatology was not significantly related to children's PPVT-R scores in kindergarten. These relationships are illustrated in table 8.

Table 8

Hierarchical Regression Predicting Child Kindergarten Language Abilities (PPVT-R) – Hypothesis 2

Block	Predictors	Standardized Beta	R^2 Change	df
1			.56**	3, 99
	PPVTHS (child)	.65**		
	Income	.08		
	PPVT-R (mother)	.22**		
2			.00	3, 96
	Mother Takes Over Task	-.05		
	Bribing	-.05		
	Authoritarian	.03		
3			.01	1, 95
	CES-D	.09		

$^{+}p \leq .10$. $^{*}p \leq .05$. $^{**}p \leq .01$.

The regressions for children's Verbal scores on the McCarthy included the following negative parenting practices: mother takes over task, rejecting, and authoritarian. After controlling for the same three variables, child's previous language ability, household income, and maternal language ability, negative parenting practices did not remain significant in relationship to the children's McCarthy Verbal scores. As in the previous regressions, maternal symptomatology was not significantly related to children's McCarthy Verbal subscale scores. These results can be seen in table 9.

Table 9

Hierarchical Regression Predicting Child Kindergarten McCarthy Verbal Scores – Hypothesis 2

Block	Predictors	Standardized Beta	R^2 Change	df
1			.37**	3, 99
	PPVT-R (child HS)	.57**		
	Income	.09		
	PPVT-R (mother)	.05		
2			.00	3, 96
	Mother Takes Over Task	-.02		
	Rejecting	-.07		
	Authoritarian	.05		
3			.00	1, 95
	CES-D	.06		

$^{+}p \leq .10$. $*p \leq .05$. $**p \leq .01$.

The regression for children's McCarthy Perceptual scores included four negative parenting practices that had previously been found significant at the $p \leq .05$ level of significance: direct commands, mother takes over task, rejecting, and authoritarian. Above and beyond the control variables, only mother takes over task and authoritarian remained marginally significant. Maternal symptomatology was not significantly related to children's McCarthy Perceptual scores. These results are depicted in table 10.

Table 10

Hierarchical Regression Predicting Child Kindergarten McCarthy Perceptual Scores – Hypothesis 2

Block	Predictors	Standardized Beta	R^2 Change	df
1			.19**	3, 99
	PPVT-R (child HS)	.41**		
	Income	.09		
	PPVT-R (mother)	.00		
2			.11**	4, 95
	Direct Commands	-.11		
	Mother Takes Over Task	-.15+		
	Rejecting	-.03		
	Authoritarian	-.20+		
3			.01	1, 94
	CES-D	-.11		

+$p \leq .10$. *$p \leq .05$. **$p \leq .01$.

The final regression for this hypothesis was related to children's McCarthy Quantitative scores. Direct commands and mother takes over task were the only negative parenting practices used as predictors in this regression. Neither of them remained significantly related to Quantitative scores after controlling for children's Head Start language ability, household income, and maternal language ability. Maternal depressive symptomatology was not significantly related to Quantitative subscale scores beyond negative parenting practices. These results are in table 11.

Table 11

Hierarchical Regression Predicting Child Kindergarten McCarthy Quantitative Scores – Hypothesis 2

Block	Predictors	Standardized Beta	R^2 Change	df
1			.16**	3, 108
	PPVT-R (child HS)	.36**		
	Income	.10		
	PPVT-R (mother)	.04		
2			.04+	2, 106
	Direct Commands	-.13		
	Mother Takes Over Task	-.15		
3			.00	1, 105
	CES-D	-.04		

+p≤.10. *p≤.05. **p≤.01.

Hypothesis two stated that maternal depressive symptomatology would be negatively related to children's cognitive and language abilities in kindergarten; above and beyond negative maternal parenting practices, household income, maternal language ability, and child language ability in Head Start. This hypothesis was not supported for any of the child outcomes tested.

Hypothesis 3

Recall that hypothesis three stated that maternal depressive symptomatology would be negatively related to children's cognitive and language abilities in kindergarten, above and beyond positive maternal parenting practices, maternal language ability, child language ability in Head Start, and household income. As with hypothesis two, it was necessary to begin by identifying significant relationships between positive parenting practices and child outcomes. Seven positive parenting practices were used in this study: total number of maternal verbalizations, informative feedback, positive feedback, directive questions, cognitions inquiry, concern, and nurturant. Two of the parenting practices, total number of maternal verbalizations and cognitions inquiry, did not correlate significantly with any of the child outcomes. These correlations can be found in table 12. Once again, children's Head Start language ability (PPVT-R) was included in the correlations because it was used as a control variable in the following regressions.

As previously mentioned, children's Head Start language abilities constituted the criterion variable for the first regression. Only two positive parenting practices correlated significantly with children's Head Start language ability; informative feedback and nurturant. These were both used in this regression. Informative feedback remained significant in predicting child Head Start language ability above and beyond household

Table 12

Correlation of Positive Parenting Practices with Child Outcomes

	Mom PPVT	CES Tot	H Inc	Mat Verb	Inf Feed	Pos Feed	Dir Ques	Cog Inq	Conc	Nur	PPVT HS	PPVT K	Ver	Perc
Mother PPVT-R														
CES-D Total	-.22**													
Household Income	.07	-.24**												
Maternal Verbalizations	.07	-.12	.00											
Informative Feedback	.06	.19*	-.02	-.04										
Positive Feedback	.02	-.16*	.01	.01	-.31**									
Directive Questions	-.02	-.06	.07	-.08	-.13+	-.02								
Cognitions Inquiry	.01	.17*	-.04	.05	-.17*	.08	.22*							
Concern	.12+	-.14+	-.03	-.11	-.01	.12	.15+	-.05						
Nurturant	.00	.01	.09	-.04	.12	.12	-.17*	-.07	-.07					
PPVTHS	.19*	-.03	.11	-.14+	.27**	.12	.00	-.04	.07	.21*				
PPVTK	.31**	-.01	.19*	-.05	.21*	.15+	-.07	-.05	.09	.09	.71**			
Verbal	.18*	-.05	.22*	-.06	.17*	.10	.04	.03	.07	.12	.58**	.62**		
Perceptual	.11	-.19*	.14+	-.04	-.00	.29**	.22*	-.02	.25**	.14+	.39**	.33**	.38**	
Quantitative	.11	-.08	.14+	-.15+	.13+	.05	.18*	-.08	.31**	.11	.38**	.38**	.55**	.48**

+p≤.10. *p≤.05. **p≤.01.

Note: some correlations are identical to Table 4.

income and maternal language ability. Nurturant only remained marginally significant above those two control variables. Maternal depressive symptomatology was not

significantly related to child Head Start PPVT-R scores beyond the positive parenting practices. These results are depicted in table 13.

Table 13

Hierarchical Regression Predicting Child Head Start Language Abilities (PPVT-R) – Hypothesis 3

Block	Predictors	Standardized Beta	R^2 Change	df
1			.05^{+}	2, 103
	Income	.11		
	PPVT-R (mother)	.20*		
2			.07*	2, 101
	Informative Feedback	.19*		
	Nurturant	.18^{+}		
3			.00	1, 100
	CES-D	-.05		

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

A regression analysis predicting child kindergarten language abilities (PPVT-R) was the second test of this hypothesis. Informative feedback was the only positive parenting practice significantly related to this variable, and thus was the only one positive parenting practice included as an independent variable in this regression. After controlling for household income, maternal language ability, and child Head Start language ability, informative feedback did not remain significant. Maternal depressive symptomatology was also not significantly related to child kindergarten language ability

beyond household income, maternal language ability, child Head Start language ability, and positive parenting practices. These results can be seen in table 14.

Table 14

Hierarchical Regression Predicting Child Kindergarten Language Abilities (PPVT-R) – Hypothesis 3

Block	Predictors	Standardized Beta	R^2 Change	df
1			.55**	3, 108
	Income	.10		
	PPVT-R (mother)	.18**		
	PPVT-R (child HS)	.67**		
2			.00	1, 107
	Informative Feedback	.03		
3			.01	1, 106
	CES-D	.09		

$^{+}p \leq .10$. $*p \leq .05$. $**p \leq .01$.

Informative feedback was also the only positive parenting practice that significantly related to child McCarthy Verbal scores. After controlling for the three control variables, however, it did not remain significant. Furthermore, the McCarthy Verbal scores showed no significant relationship with the Maternal CES-D scores beyond positive parenting practices. These results are in table 15.

The regression for McCarthy Perceptual scores revealed a slightly different result. Three positive parenting practices had previously been identified as significantly related

Table 15

Hierarchical Regression Predicting Child Kindergarten McCarthy Verbal Scores – Hypothesis 3

Block	Predictors	Standardized Beta	R^2 Change	df
1			.36**	3, 108
	PPVT-R (child HS)	.55**		
	Income	.15+		
	PPVT-R (mother)	.07		
2			.00	1, 107
	Informative Feedback	.02		
3			.00	1, 106
	CES-D	.02		

+p≤.10. *p≤.05. **p≤.01.

to Perceptual scores: directive questions, positive feedback, and concern. After controlling for the control variables (household income, maternal language ability, and child Head Start language ability) all three positive parenting practices remained significantly related to children's Perceptual scores. Maternal CES-D, however. did not demonstrate a significant relationship with the Perceptual scores above and beyond positive parenting practices. Table 16 illustrates results from the Perceptual scores regression.

The final regression necessary for testing hypothesis three is that of the child McCarthy Quantitative scores. Directive questions and concern were the positive

Table 16

Hierarchical Regression Predicting Child Kindergarten McCarthy Perceptual Scores – Hypothesis 3

Block	Predictors	Standardized Beta	R^2 Change	df
1			.17**	3, 108
	PPVT-R (child HS)	.38**		
	Income	.09		
	PPVT-R (mother)	.03		
2			.13**	3, 105
	Directive Questions	.19*		
	Positive Feedback	.23**		
	Concern	.17*		
3			.01	1, 104
	CES-D	-.09		

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

parenting practices used as independent variables for this regression. Above and beyond the three control variables, concern remained significant. Maternal CES-D followed its previous practice; it was not significantly related to Quantitative scores beyond the influence of positive parenting practices. These results are in table 17.

Hypothesis 3 stated that maternal depressive symptomatology would be negatively related to children's cognitive and language abilities in kindergarten, above

and beyond positive maternal parenting practices, household income, maternal language ability, and child language ability in Head Start. This hypothesis was not supported.

Table 17

Hierarchical Regression Predicting Child Kindergarten McCarthy Quantitative Scores – Hypothesis 3

Block	Predictors	Standardized Beta	R^2 Change	df
1			.16**	3, 108
	PPVT-R (child HS)	.36**		
	Income	.10		
	PPVT-R (mother)	.04		
2			.10**	2, 106
	Directive Questions	.13		
	Concern	.27**		
3			.00	1, 105
	CES-D	.01		

$^{+}p \leq .10$. $*p \leq .05$. $**p \leq .01$.

Maternal depressive symptomatology was not significant beyond the control variables for any child outcome. After reaching these conclusions, it was deemed necessary to examine the relationship between maternal depressive symptomatology and the child outcomes being investigated. The results of this correlation indicated that maternal CES-D scores were only significantly related to child McCarthy Perceptual scores. These results are represented in table 18.

Table 18

Correlation of Depressive Symptomatology and Child Language and Cognitive Outcomes

	CES-D	PPVT HS	PPVT K	Verbal	Percept	Quant
CES-D						
PPVT-R (child HS)	-.03					
PPVT-R (child K)	-.01	.71**				
Verbal	-.05	.58**	.62**			
Perceptual	-.19*	.39**	.33**	.38**		
Quantitative	-.08	.38**	.38**	.55**	.48**	

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

Hypothesis 4

Hypothesis four stated that negative parenting practices would predict (negatively) children's cognitive and language abilities in kindergarten, above and beyond depressive symptomatology, maternal language ability, child Head Start language ability, and household income. Based on correlations of the CES-D and child outcomes (see Table 18), it was expected that the CES-D would only contribute to the prediction of Perceptual scores. However, CES-D scores were entered in all regressions for hypotheses four and five in order to test them as they were written.

Correlations necessary for testing hypothesis four can be found in table 6. The negative parenting practices significantly associated with each child outcome measure

were used as independent variables in regressions for each of the respective child outcome measures. Each regression had two common control variables in block one: household income and maternal language ability. The first regression was for child Head Start language ability: each regression after that added it as a control variable in block one. The predictor in block two in each regression for this hypothesis was maternal

Table 19

Hierarchical Regression Predicting Child Head Start Language Abilities (PPVT-R) – Hypothesis 4

Block	Predictors	Standardized Beta	R^2 Change	df
1			.06*	2, 100
	Income	.13		
	PPVT-R (mother)	.21*		
2			.00	1, 99
	CES-D	-.04		
3			.13**	4, 95
	Mother Takes Over Task	-.28**		
	Rejecting	-.10		
	Bribing	-.17		
	Authoritarian	-.05		

$^{+}p \leq .10$. $*p \leq .05$. $**p \leq .01$.

depressive symptomatology. As previously stated, the criterion variable in the first regression was Child Head Start language abilities. This regression, as in hypothesis two,

included the following negative parenting practices: mother takes over task, rejecting, bribing, and authoritarian. Beyond all control variables, mother takes over task remained statistically significant. These results are represented in table 19.

The criterion variable in the second regression for testing this hypothesis was PPVT-R performance in kindergarten. Three negative parenting practices—mother takes over task, bribing, and authoritarian—served as control variables. After controlling for control variables and depressive symptomatology in blocks one and two, none of the negative parenting practices remained significant. These results can be found in table 20.

Table 20

Hierarchical Regression Predicting Child Kindergarten Language Abilities (PPVT-R) – Hypothesis 4

Block	Predictors	Standardized Beta	R^2 Change	df
1			.56**	3, 99
	PPVTHS (child)	.65**		
	Income	.08		
	PPVT-R (mother)	.22**		
2			.01	1, 98
	CES-D	.08		
3			.01	3, 95
	Mother Takes Over Task	-.05		
	Bribing	-.07		
	Authoritarian	.02		

$^{+}p \leq .10$. $*p \leq .05$. $**p \leq .01$.

The regression predicting McCarthy Verbal scores indicated similar results. Mother takes over task, rejecting, and authoritarian were included in the regression as negative parenting practices; none remained significant beyond the previously stated control variables. These results are shown in table 21.

Table 21

Hierarchical Regression Predicting Child Kindergarten McCarthy Verbal Scores – Hypothesis 4

Block	Predictors	Standardized Beta	R^2 Change	df
1			.37**	3, 99
	PPVT-R (child HS)	.57**		
	Income	.09		
	PPVT-R (mother)	.05		
2			.00	1, 98
	CES-D	.04		
3			.01	3, 95
	Mother Takes Over Task	-.02		
	Rejecting	-.09		
	Authoritarian	.05		

$^{+}p \leq .10$. $*p \leq .05$. $**p \leq .01$.

The regression analyzing relationships with child kindergarten McCarthy Perceptual scores revealed only slightly different results. Maternal negative parenting practices that served as independent variables included: direct commands, mother takes

over task, rejecting, and authoritarian. After controlling for household income, maternal language ability, child Head Start language ability, and maternal depressive symptomatology, the combined negative parenting practices still remained statistically significant. Only two of the practices, however, showed individual marginal significance: mother takes over task and authoritarian. These results are found in table 22.

Table 22

Hierarchical Regression Predicting Child Kindergarten McCarthy Perceptual Scores – Hypothesis 4

Block	Predictors	Standardized Beta	R^2 Change	df
1			.19**	3, 99
	PPVT-R (child HS)	.41**		
	Income	.09		
	PPVT-R (mother)	.00		
2			.01	1, 98
	CES-D	-.12		
3			.10**	4, 94
	Direct Commands	-.12		
	Mother Takes Over Task	-.16+		
	Rejecting	-.00		
	Authoritarian	-.21+		

+p≤.10. *p≤.05. **p≤.01.

The final regression related to hypothesis four predicts McCarthy Quantitative scores. Direct commands and mother takes over task were the only negative parenting practices included in this regression. As with many of the previous regressions, negative parenting practices did not remain significant beyond the control variables in blocks one and two. These results are in table 23.

Table 23

Hierarchical Regression Predicting Child Kindergarten McCarthy Quantitative Scores – Hypothesis 4

Block	Predictors	Standardized Beta	R^2 Change	df
1			.16**	3, 108
	PPVT-R (child HS)	.36**		
	Income	.10		
	PPVT-R (mother)	.04		
2			.00	1, 107
	CES-D	-.04		
3			.04+	2, 105
	Direct Commands	-.13		
	Mother Takes Over Task	-.15		

+p≤.10. *p≤.05. **p≤.01.

Hypothesis four stated that above and beyond depressive symptomatology, household income, maternal language ability, and child language ability in Head Start, negative parenting practices would predict (negatively) children's language and cognitive

abilities in kindergarten. This hypothesis was only partly supported. Child Head Start language ability explained the largest portion of the variance in most regressions, but negative parenting practices were significantly related to children's McCarthy Perceptual scores beyond all control variables (see table 22). This indicates an effect of negative parenting practices on some cognitive abilities.

Hypothesis 5

Hypothesis five stated that maternal positive parenting practices would predict (positively) child cognitive and language abilities in kindergarten, above and beyond maternal depressive symptomatology, maternal language abilities, child language abilities in kindergarten, and household income. Correlations between positive parenting practices and child outcome measures can be found in table 12. Those positive parenting practices significantly correlated with each of the child outcomes will be used as independent variables for the respective regressions, thus they will be the same as those used for each regression of hypothesis three.

The regression predicting child Head Start language abilities included household income and maternal language as control variables in block one and maternal depressive symptomatology in block two. Positive parenting practices used for this regression were nurturant and informative feedback. Above and beyond the variables in blocks one and two, informative feedback remained statistically significant in relationship to child Head Start language abilities. Nurturant remained only marginally significant. These results are found in table 24.

Table 24

Hierarchical Regression Predicting Child Head Start Language Abilities (PPVT-R) – Hypothesis 5

Block	Predictors	Standardized Beta	R^2 Change	df
1			.05^{+}	2, 103
	Income	.11		
	PPVT-R (mother)	.20*		
2			.00	1, 102
	CES-D	-.02		
3			.08*	2, 100
	Nurturant	.18^{+}		
	Informative Feedback	.20*		

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

As with previous hypotheses, child language ability in Head Start was entered as a control variable in block one for the following four regressions. The criterion variable in the first regression was child PPVT-R scores in kindergarten. Informative feedback was the only positive parenting practice used as an independent variable in the first regression. It did not, however, remain significant beyond the control variables of household income, maternal language ability, child Head Start language ability, and maternal depressive symptomatology. These results can be seen in table 25.

Table 25

Hierarchical Regression Predicting Child Kindergarten Language Abilities (PPVT-R) – Hypothesis 5

Block	Predictors	Standardized Beta	R^2 Change	df
1			.55**	3, 108
	Income	.10		
	PPVT-R (mother)	.18**		
	PPVT-R (child HS)	.67**		
2			.01	1, 107
	CES-D	.09		
3			.00	1, 106
	Informative Feedback	.01		

†p≤.10. *p≤.05. **p≤.01.

Child McCarthy Verbal scores were also significantly related to only one positive parenting practice, informative feedback. This variable did not remain significantly related to Verbal scores beyond the four control variables. Table 26 represents these results.

Table 26

Hierarchical Regression Predicting Child Kindergarten McCarthy Verbal Scores – Hypothesis 5

Block	Predictors	Standardized Beta	R^2 Change	df
1			.36**	3, 108
	PPVT-R (child HS)	.55**		
	Income	.15^{+}		
	PPVT-R (mother)	.07		
2			.00	1, 107
	CES-D	.02		
3			.00	1, 106
	Informative Feedback	.02		

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

The regression for child McCarthy Perceptual scores yielded a slightly different result than the other child outcomes. Positive parenting practices used in this regression included directive questions, positive feedback, and concern. After controlling for child Head Start language ability, maternal language ability, household income, and maternal depressive symptomatology, both directive questions and positive feedback remained significantly related to child Perceptual scores. Concern remained marginally significant beyond the control variables. These results can be found in table 27.

Table 27

Hierarchical Regression Predicting Child Kindergarten McCarthy Perceptual Scores – Hypothesis 5

Block	Predictors	Standardized Beta	R^2 Change	df
1			.17**	3, 108
	PPVT-R (child HS)	.38**		
	Income	.09		
	PPVT-R (mother)	.03		
2			.02+	1, 107
	CES-D	-.16+		
3			.12**	3, 104
	Directive Questions	.19*		
	Positive Feedback	.21*		
	Concern	.16+		

+p≤.10. *p≤.05. **p≤.01.

The regression for McCarthy Quantitative scores included both directive questions and concern as independent variables. After controlling for child Head Start language ability, household income, maternal language ability, and maternal depressive symptomatology, concern remained statistically significant. Directive questions, however, did not remain significantly related to McCarthy Quantitative scores. These results are depicted in table 28.

Table 28

Hierarchical Regression Predicting Child Kindergarten McCarthy Quantitative Scores – Hypothesis 5

Block	Predictors	Standardized Beta	R^2 Change	df
1			.16**	3, 108
	PPVT-R (child HS)	.36**		
	Income	.10		
	PPVT-R (mother)	.04		
2			.00	1, 107
	CES-D	-.04		
3			.10**	2, 105
	Directive Questions	.13		
	Concern	.27**		

$^{+}p \leq .10$. *$p \leq .05$. **$p \leq .01$.

Hypothesis five stated that above and beyond depressive symptomatology, household income, maternal language ability, and child language ability in Head Start, maternal positive parenting practices would predict (positively) child cognitive and language abilities in kindergarten. This hypothesis was supported in part. One positive parenting practice, concern, remained significantly related to children's McCarthy Quantitative scores beyond the effects of the control variables. In addition, maternal positive parenting practices explained a significant portion of the variance in children's McCarthy Perceptual scores above the control variables. These two findings support the

hypothesized relationship between positive parenting practices and children's cognitive abilities.

CHAPTER FIVE

DISCUSSION

Summary of Thesis

This study investigated the links between maternal depressive symptomatology, maternal parenting practices, and child outcomes in kindergarten. This research assumes the concept of triadic reciprocal determinism (Bandura, 1986). Recall that this concept is based on the idea that psychological functioning, behavior, and environment are all interacting to shape each other. In direct relationship to this study, mothers' depression (psychological functioning) can affect their parenting (behavior) and their child (environment). In the same way, their parenting can influence their depression and children. Considering the concept of reciprocity, it is possible to infer from the literature that maternal depression would be related to both maternal parenting practices and child outcome measures. In addition, this reciprocity includes the contribution of parenting practices independently to child outcome measures. From the literature, it can be inferred that parenting practices of an authoritative nature (Baumrind, 1978), responsive and reciprocal, will foster appropriate language and cognitive development, while those not conforming to an authoritative model will not cultivate these skills. Overall, the framework for this study is that mothers' psychological functioning affects their behavior (parenting) and their environment (children), and at the same time, their behavior (parenting) may affect their psychological functioning (depressive symptomatology) and environment (children). Although not tested in this study, it remains a possibility that the child is contributing to the maternal depression, parenting, and child outcomes.

In sum, the hypotheses stated that above and beyond maternal language ability and household income, maternal depressive symptomatology would be related to parenting practices. Additionally, beyond the same control variables and the additional control of child language ability in the preschool year of Head Start, both maternal depressive symptomatology and parenting practices would contribute independently to child outcomes in kindergarten.

These hypotheses were first tested by identifying which predictor variables were significantly correlated with criterion variables. The second step was to perform hierarchical regressions to identify the amount of variance explained in the criterion variable by the predictor variables in question.

Relationship between Maternal Depressive Symptomatology and Parenting Practices

Hypothesis one examined the relationship between maternal depressive symptomatology and parenting practices. This hypothesis stated that a relationship would be present beyond the control variables, the direction of the relationship was not postulated. Additionally, it was theorized that positive parenting practices would be related negatively, whereas negative practices would be related positively to maternal depressive symptomatology. This hypothesis was supported in part. Initial correlations revealed that five of the twelve parenting practices correlated significantly with maternal depressive symptomatology. After running a hierarchical regression, it was revealed that parenting practices accounted for a large portion of the variance beyond the control variables of household income and maternal language ability. Four of the practices remained significantly related to maternal depressive symptomatology: rejecting, bribing, cognitive inquiries, and informative feedback. All four of the significant practices (two

positive practices and two negative practices) related positively to maternal depressive symptomatology. This supports the hypothesis that negative practices will correlate positively with CES-D scores, but is contrary to the hypothesis that positive practices would be related inversely with the CES-D scores.

It is not clear why more parenting practices did not correlate with maternal depressive symptomatology, or why two parenting practices thought to be positive were positively related to CES-D scores. One possibility may be that this sample includes more motivated mothers than would be found in a non-purposive sample. These mothers are involved in Head Start and have agreed to participate in the project, and thus may be motivated to provide better parenting practices under direct observation. Another possibility involves mothers' judgements of their parenting. The literature indicated that depressed mothers tended to feel less confident in their parenting; this feeling of inadequacy may actually contribute to mothers' efforts to prove the quality of their parenting to researchers. One final theory as to why two positive parenting practices might be related to depressive symptomatology involves maternal anxiety. It is possible that mothers experiencing depressive symptomatology are worried about their children in this environment and they worry that their parenting skills are not adequate for raising their children appropriately. This anxiety could motivate them to ask their children a lot of questions about how and why the child does certain things in performing the task and even drive them to provide more informative feedback. Remembering that the behavior coded in the MCTT as cognitions inquiry is comprised of inquiries about the child's cognitions (i.e., "Remember how we did the last boat?"), it is reasonable to consider the mothers' anxiety as a source of more frequent use of this behavior. In the same vein,

informative feedback consists of statements such as, "You've folded it too far." This behavior also could be a product of mothers' anxiety about their children's performance.

Relationship between Maternal Depressive Symptomatology and Child Outcomes

Hypotheses two and three addressed the relationship between maternal CES-D scores and child language and cognitive abilities in kindergarten. Investigation of hypothesis two was confined to negative parenting practices, while positive parenting practices were examined by hypothesis three. Analysis for both began with the identification of parenting practices significantly related to child outcomes. Each of the five negative parenting practices correlated significantly with at least two of the five child outcome measures. Of the seven positive parenting practices, only two (maternal verbalizations and cognitive inquiries) did not correlate significantly with any of the child outcome measures. Hierarchical regressions isolating the contribution of CES-D scores were performed twice for each of the child outcome measures, once using positive practices as independent variables and once using negative practices. All regressions controlled for maternal language ability and household income. After each regression predicting child PPVT-R scores in Head Start, child language ability in Head Start became a control variable for regressions predicting the other child outcome measures. This process provided a way to control for contributions to the child's language ability prior to the project measurements in Head Start. This yielded a result that could more reliably be attributed to the effects of maternal depressive symptomatology experienced during the child's preschool year of Head Start.

Neither hypothesis two or three was supported. Results from these analyses indicate that maternal depressive symptomatology does not contribute to child language

and cognitive functioning beyond parenting or household income and maternal language ability. Correlations of the child outcomes and maternal depressive symptomatology revealed that the CES-D was not related to child language outcomes, and only the McCarthy subscale of perception, a cognitive scale, correlated significantly with maternal depressive symptomatology (-.19, $p \leq .05$). These results suggest that maternal depressive symptomatology is not the defining factor in the development of child language and cognitive abilities as assessed by the measures chosen for this study.

Relationship between Parenting Practices and Child Outcomes

Hypotheses four and five address the relationship between parenting practices and child outcomes. As with hypotheses two and three, analyses were conducted separately for negative and positive parenting practices. Two regressions were performed for each child outcome measure, and child Head Start language ability was controlled for in the regressions for the other four outcome measures. The results of these regressions suggest that parenting practices were more closely related to child cognitive abilities than maternal depression. Although both negative and positive parenting practices did account for a significant portion of the variance of PPVT-R scores in Head Start (negatively related to mother takes over task and positively to informative feedback), this relationship did not remain significant for PPVT-R scores in kindergarten. Child Head Start language ability combined with maternal language ability accounted for most of the variance in child kindergarten PPVT-R scores.

Maternal language ability was not significantly related to any of the McCarthy subscales, but child Head Start language ability continued to be strongly related to all of the subscales. None of the parenting practices proved to be significant above the control

variables in the regressions for the Verbal subscale. The Perceptual subscale, however, was significantly related to both positive and negative parenting practices. None of the negative practices reached significance individually (mother takes over task and authoritarian were both marginally significant), but taken together, the negative practices (all negative correlations) accounted for ten percent of the variance in the Perceptual subscale scores. Similarly, positive practices accounted for twelve percent of the variance in Perceptual subscale scores. Both directive questions and positive feedback were individually related to this scale. The Quantitative scale was also related significantly to some parenting practices. Although none of the negative practices were significant individually, they did contribute a small portion of the variance. Positive practices, however, did contribute significantly (and positively) to the Quantitative scores. The contribution of concern to the regression remained significant above all control variables.

Hypotheses four and five were only partially supported. No evidence was found in support of the relationship between parenting and child language ability in kindergarten. This can possibly be explained by contributions made to language development prior to Head Start. These contributions may include parenting. Some evidence was found to support the hypothesis that parenting would be related to cognitive outcomes. Both negative and positive parenting patterns related significantly to child Perceptual scores, with mother takes over task, authoritarian, directive questions, and positive feedback being the most influential practices. All significant practices did correlate in the hypothesized direction: negatively with negative practices and positively with positive practices. Also included in cognitive outcomes is Quantitative, which also

showed evidence of relationships with parenting practices. Negative practices only contributed marginally, but the positive practice of concern contributed significantly to the variance of this scale. This link was not originally clear because the practice of expressing concern in the MCTT includes expressions such as, "Are you cold?" and "Are you excited?" To clarify this link, a correlation was computed between maternal expression of concern and maternal mental operational demand (MOD), "the degree of representational thought required of the child by the mother's utterance" (Miller, 1998, p. 7). This analysis yielded a significant positive correlation between the level three MODs, maternal utterances that require a child to process abstract ideas (Miller, 1998), and the positive parenting practice of concern. This helps to put concern in the perspective of quantitative skills; mothers who require children to respond to abstract ideas may be helping their children develop such skills through their expression of concerned affect.

Weaknesses

A possible weakness of this study is the fact that those involved in the study were potentially more motivated than their counterparts in the community, taking time to be involved in what was sometimes a time-consuming data collection process. Thus, this study can only be generalized to families with a child involved in Head Start who are also willing to participate in a research project.

Another consideration should be the conservative nature of the tests of hypotheses. This study examined change in child language and cognitive abilities from Head Start to kindergarten based on maternal depressive symptomatology and parenting. By controlling for child Head Start language ability, only the effects of depressive symptomatology and parenting on children's cognition and language in kindergarten

above and beyond children's language in Head Start. Effects of depressive symptomatology and language without such controls would have been greater.

Another possible weakness for this study is the absence of the control of children's depressive symptomatology. Children's depressive symptomatology may contribute to their own cognitive and language outcomes, as well as, to their mothers' depressive symptomatology and parenting. This variable may be a significant factor in the reciprocal nature of the parent-child relationship.

Implications for Theory

The findings that maternal depressive symptomatology and parenting were related supports Bandura's concept of triadic reciprocal determinism. Maternal psychological functioning was related to maternal behavior as suggested by the concept. The finding that parenting practices were related to child cognitive outcomes also supports the theory of reciprocity; behavior and environment were related. The finding that depressive symptomatology was not related to child cognitive and language abilities does not necessarily invalidate the theory of reciprocal determinism in that specific aspects of the symptomatology, child characteristics, and other unknowns may also be contributing to the mix.

This research also provides some support for Baumrind's theory of parenting practices associated with child outcomes. Though parenting practices were not associated with child language outcomes in kindergarten, they were related to Head Start language. The strictness of the testing procedure for kindergarten must again be considered. Important to consider, is that by controlling for child language ability in Head Start, some parenting effects prior to Head Start may be excluded from this study.

Implications for Future Research

One avenue for investigating maternal depression and child outcomes could be to employ subscales of the CES-D to examine specific symptomatology. Some symptomatology may be more influential in child cognitive development than others. Though not utilized for the current study, depressive symptomatology as assessed by subscales of the CES-D was investigated post hoc. The interpersonal subscale, although not internally consistent in the current sample, is highly correlated with child cognitive functioning. This subscale is a two-item measure including, "People were unfriendly" and "I felt that people dislike me". Although the meaning of the correlation between the McCarthy subscales and these two items is not clear, this evidence suggests that specific depressive symptoms may be more closely related to child outcomes than full-scale CES-D scores and should be investigated further.

Future research should also include the examination of further child cognitive measures in relation to parenting practices and depression. This study used a limited number of cognitive measures and perhaps there are some that would better investigate that variable. Additionally, future research should include various aspects of cognition. Social cognition, for example, pertains to children's understanding of their own and others' thoughts and emotions, as well as, their conception of their social relationships (Shaffer, 1994). Cognitive-developmental theorists assert that children's level of cognitive development is largely responsible for their social cognition. With the finding in the current study that some positive parenting practices had a significant effect on child cognitive outcomes, it is plausible that this effect could be extended to other areas of cognition.

Implications for Practical Application

Parenting. This research confirms that parenting is an influential part of child development. Parenting may mediate the effects of family stress and psychological functioning on children's cognitive functioning. In the current study, mothers' positive parenting practices such as informative feedback and concern were linked to improved outcomes in their children; these are teachable practices. Practices such as these, as well as, alternatives to authoritarian and rejecting parenting practices can be added to parenting programs among populations similar to this one. To have the most immediate impact on samples like the current one, material about these types of parenting practices should be disseminated through the home visitation plan of Head Start teachers.

Additionally, the medical community has a unique opportunity to be involved with families when they are most likely to be open to training—during the pregnancy and when the parents have concerns about their children. Interaction with physicians, birthing coaches, and parenting classes prior to and immediately following birth are all opportunities to integrate information on positive parenting practices and encourage families to seek further parent education.

Mental Health. Considering the number of mothers in this study experiencing depressive symptomatology, an immediate application of these finding would be to target families in programs like Head Start with mental health information, screening, and treatment. Another application of these data would be for those currently undergoing treatment. It may be appropriate to refer them to parenting programs; improved parenting may be just as important as parental psychological functioning is to family health and development.

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APPENDIX A

INSTRUCTIONS FOR QUESTIONS: Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.
HAND CARD A.

0=Rarely or None of the Time (Less than 1 Day)
1=Some or a Little of the Time (1-2 Days)
2=Occasionally or a Moderate Amount of Time (3-4 Days)
3=Most or All of the Time (5-7 Days)

During the past week:

1. I was bothered by things that usually don't bother me.
2. I did not feel like eating; my appetite was poor.
3. I felt that I could not shake off the blues even with help from my family or friends.
4. I felt that I was just as good as other people.
5. I had trouble keeping my mind on what I was doing.
6. I felt depressed.
7. I felt that everything I did was an effort.
8. I felt hopeful about the future.
9. I thought my life had been a failure.
10. I felt fearful.
11. My sleep was restless.
12. I was happy.
13. I talked less than usual.
14. I felt lonely.
15. People were unfriendly.
16. I enjoyed life.
17. I had crying spells.
18. I felt sad.
19. I felt that people dislike me.
20. I could not get "going."

APPENDIX B

DIRECTIONS

General directions to coders: You will code mothers' utterances from the 5-minute videotape with a transcript of the tape in hand. The videotape will give you the context of the mother's verbalizations and will enable you to judge the tone and intent of the mother's communication.

There are two types of codes that you will assign to each of the mother's statements: 1) maternal behavior codes and 2) maternal operational demand codes. Maternal behavior codes consist of Perspective Taking, Egocentrism, Structuring, Control, Intrusive Control, and Feedback. Maternal operational demand codes are divided into three levels, each level corresponding to the degree of demand by the mother for representational thought by the child: low, medium and high.

Codes for maternal behavior are to be recorded in the left hand margin of the transcript. Codes for maternal operational demand are to be recorded in the right hand margin of the transcript.

Where statements are separated by a single slash, a double slash, three dots (. . .), or a # sign, code each statement separately. Exceptions to this rule include cases in which a # sign separates a direct command from an "okay?" (coded as C2, qualified command), ***or in which a # sign separates two statements that when joined would result in a higher level MOD than either statement considered alone (e.g., Sequencing --level 2), or in which a # sign separates a reason from a command (C5 command with reason).***

Where statements are separated by an "and," a "but," or an "or," and each statement includes a verb, code each statement separately. Do NOT separate statements if doing so would result in coding a lower level of maternal operational demand (e.g., two level 1 codes as opposed to one level 2 or level 3 code).

Coding Maternal Behavior

Directions: Each utterance of the mother one of the following codes in the left margin of the transcript: "Maternal Perspective Taking" (P codes), "Maternal Egocentrism" (E codes), "Maternal Control" (C codes), "Maternal Intrusive Control" (I codes), "Maternal Structuring of Task" (S codes), "Maternal Feedback" (F codes), **or** "Not Relevant" (Z), "Unintelligible" (X), or "None of the above" (N).

P Codes - Maternal Perspective Taking

Do not code if a statement is made in a sarcastic or sneering tone of voice.

P1) Statement of awareness of child's feelings or state, e.g., "You're angry because the boat doesn't fold right."

P2) Inquiry about the child's feelings or state (Emotions), e.g., or "Are you excited because we have only one more edge to fold?"

P3) Statement of awareness of child's perceptions, thoughts, or motives, e.g., "You want it to fold up but it keeps going down."

P4) Inquiry about the child's perceptions, thoughts, or motives (Cognitions), e.g., "Did you turn it that way because you want the sail to go down?" "Do you see that there are two folds now?" "Do you see which part of the paper makes the sail and which part makes the bottom of the boat?" ***"Are you ready?" "Remember how we did the last boat?"***

Rule for discriminating P4 from P2: When the inquiry is about anything COGNITIVE (including perceptions, reasons for feelings, motivations for behavior), code P4. When the inquiry is about anything EMOTIONAL, code P2.

Rule for discriminating P4 from C4: When the verb "see" is used to refer to or focus on the child's PERCEPTION/THINKING, code P4. When the verb "see" is used to refer to or focus on the child's LOOKING, code C4.

P5) Repetition with more information - The mother simplifies a statement she has made or offers additional information when the child doesn't understand her or doesn't respond to her. For example, the mother says, "Fold the paper in half" then modifies her statement, "start with the point on the left side and bring it over to the point on the right side." The second statement would be coded as repetition with more information. Because a repetition can be a command, an informative feedback, a qualified command, etc., please indicate the relevant C, I, or F code in parentheses. "Start with the point on the left side and bring it over to the point on the right side" would be P5 (F1). *Code P5 whenever the mother has said a word and then offers a definition of the word.*

The key to deciding whether a statement is a P5 as opposed to an E2 is whether the mother is adding more information. Where the mother adds a noun or a verb (or a noun or a verb phrase), the mother is clearly adding more information ("Turn it over this way" after "This way" is a P5; "Along the fold" after "Run your finger along here" is a P5; "Push it over to the edge" after "it needs to be up to this edge" is a P5). In cases where the information is ambiguous, such as "Open it up like this" after "Open it up," a P5 is coded only if the mother also adds nonverbal information (e.g., pointing to the boat on the board; however if the mother is actually holding or folding the paper to show the child, code E1-M or E1-S).

P6) Inquiry about child's needs/wants - "Do you want me to hold the paper? " "Do you need me to turn the paper?"

P7) Offer of help - "I'll hold this, so it won't get away from you."

P8) Making relevant to child by appealing to the past - Past experiences that are referred to must have taken place more than 30 minutes previous to the time on the tape. If P8 can be coded for the same statement as another code, put the P8 in parentheses, after the other code (i.e., other code predominates).

P9) Expression of interest in or concern about child's nontask needs - Mother makes statement or asks question about child's needs, wants, state, etc. that is about a nontask issue. For example, "Are you cold?" "Do you need to blow your nose?" "Are you sleepy?"

E Codes - Maternal Egocentrism

E1) Mother folds paper herself - In direct noncompliance with task instruction, the mother takes over the task and folds the paper to make the boat herself ***or turns the paper or opens the paper herself.*** Count as one instance of this behavior each fold, ***or turn, or opening of the paper*** made by the mother. E1 is a nonverbal behavior and will not appear in the transcript. Thus, you must attend carefully to the videotape in order to code E1 correctly. Code E1 in parentheses next to code(s) for verbal behavior. Indicate with an arrow when E1 continues for more than one utterance. The arrow should stop when E1 stops.

E1 - M: Mildly Egocentric. The mother folds the paper and holds the paper so that her child can or will crease it. The mother creases the paper for the child or re-creases the paper after the child has already creased it.

E1 - S: Strongly Egocentric. The mother holds the paper, folds the paper, and then creases it all by herself.

E2) Mother repeats previous instructions - After the mother has given the child an instruction and the child has not responded, the mother merely repeats the same statement (may be coded if made in a sarcastic or sneering tone). This applies when the mother is repeating instructions for the same step of the task, even though 5 or 6 statements by the mother intervene between the two identical instructions. If more than 6 statements, do not code E2. Do not code, "Wait, wait, wait, wait" or "No, no, no, no, " as E2's. They are C1's. ***However, "Wait" "Wait, wait, wait, wait" would be coded as a C1 followed by an E2(C1). If the mother added another "# Wait," code E2 (C1) again.*** Because the repetition can be a command, an informative feedback, a qualified command, etc., please indicate the relevant C, I, or F code in parentheses: E2 (C1).

S Codes - Maternal Structuring of the Task

S1) Structuring - Comments by the mother that refer to the rules, ***instructions, and/or steps*** of the boat task. ***The comments about rules refer to expected actions, for example the verbs should, supposed to, have to and need to often appear in structuring comments.*** For example, "Remember, I am not supposed to fold the paper for you." "The lady told us we had to make this shape first and then we get to make the triangle." ***The comments about steps refer to the next step that is supposed to take place on the task. Such key words as next, now, and first, often appear in structuring comments that refer to the steps of the boat task. "Okay, now we're done with the first part. " "The second picture is next. " Not every statement that begins with "next," "first," or***

"now" should be coded as referring to the steps of the task. When the mother is simply telling the child what to do next in terms of the little details of building the boat, don't code structuring: For example, "now you need to fold it down," would be coded as C1-C.

Structuring comments are comments made by the mother that indicate "moves" or transitions between pictures or stages of boat construction. Comments that refer to detailed steps within pictures or stages are <u>not</u> structuring comments.

All structuring codes are parenthetical. That is, code structuring in parentheses next to the primary code of C, E, F, I, P. Thus, "Now we have to do the second boat," would be coded as C1-C (S).

C Codes - Maternal Control

C1) Direct command - Command ***(in an imperative tone of voice!)*** to the child that both directs behavior and is direct in that there are no qualifiers. For example, "Fold the paper." "Turn the paper the other way." "Just fold it." "Just rub your finger down the side." ***Statements by the mother that include "have to" or "gotta." are coded C1 (e.g., "You gotta fold it down").*** If the mother says "No," in response to a child's behavior (e.g., reaching), code as C1, ***unless the mother's tone of voice is one of encouragement or telling a story (e.g., "No # If you fold it that way, the bottom of the boat won't be straight.")***. If the mother says "No," in response to a question, code as F1, ***unless the mother is being abrasive or negative in some other way ("No!" in a nasty tone of voice)***. If the mother says, in response to a behavior, "No, that's not the way," code as F1. ***The general rule for discriminating F1 from C1 is: If the mother is describing the child's ongoing activity (engaging in narrative, telling a story) code her statement as an F1 ("You fold it across there" in a sing-song or narrative voice to describe the child's action is an F1). If the mother is telling the child what to do, code her statement as a C1. ("Take the corner and fold it" in a sing-song voice or a narrative voice is an F1 in an imperative voice, it is a C!).***

C1-C) Complex direct command - Command to the child that directs behavior but is grammatically more complex than a simple interjection (see simple verb phrases in C1). The grammatical complexity may be indicated by a word designating time or sequence such as "first" or "then." The grammatical complexity may be indicated by the insertion of the verb indicating the command into a prepositional phrase. Examples of complex direct commands: "You need to fold it down." "First, you fold the paper." "Then, you turn it this way." "Now fold it up." ***"Go ahead and fold it." "Try to fold it."***

C2) Qualified command - Command to the child that is accompanied by a qualifier such as "okay?" "maybe" "let's" "can" or in which the mother uses the third person plural, "we". For example, "Fold the left side first, okay?" "Now let's fold up the bottom." "You can fold the left side first, then the right." "We bring this side down." When a command is both complex and qualified, code C2, qualified command. Note that "okay?" is a qualifier when used as a tag question at the end of a command, such as in, "Fold it up, okay?" Commands introduced by "okay," (e.g., "Okay, fold it up") are direct commands, like "Just fold it." ***When "see?" is used in a tag question at the end of a command instead of "okay?," code C2: "Now bring this corner, see?" If you think that a C2 may be an F1, code it as a C2.***

C2-Q) Using questions to direct the child's behavior - "Would you like to fold the left side now?" "Why don't you bring up the bottom part next?" "Can you fold the right side?" "What about the right side?" ***If something sounds like a question, but is not in question form, it may be changed to a question during coding based on intonation, but must be discussed by both coders prior to comparing codes for a particular transcript.***

C3) Bargains or cajoles - Directing the child's behavior by offering specific positive and realistic consequences for the behavior. "Finish it up quickly and then we can have our snack." Excessive, inappropriate, or unrealistic bribes should not be coded (e.g., "Do the next side and I'll get you that dress that you wanted.")

C4) Attention directive - Command that directs visual attention, such as, looking, seeing. For example, "Look at the first one." ***All C4's should be identifiable as C1's by their grammatical structure. Any statement that is an attention directive but not a direct command should be coded as whatever the other code is. Thus, if the mother is making a statement that also qualifies as a C1-C, a C-2, or a C-5, code the other code***

instead. Code as C4: "See the triangle," and "Look at the next one." "See, this is the way we do it," would be F1.

If the mother says "See" followed by command, code a command. "See, fold it down," would be coded as C1. " See, can you fold it down?" would be coded as C2-Q.

C5) Command with reason - Command in which the arbitrary nature of the mother's demand is diminished by her use of justification or explanation. For example, "Come back to the table 'cause we have to finish." "Leave the papers up there because we need to look at 'em." "Leave the other boat alone so that we can finish this one." ***"A command with a pause followed by a reason is coded as one continuous C5 statement. Thus, "Fold it this way. # So they'll be even" would be coded C5. Reasons do not have to be initiated by "so" or "because". "Come back to the table to finish the boat" and 'Come back to the table, we have to finish" would both be coded as C5.***

I Codes - Maternal Intrusive Control

Two of the following behaviors are not verbal, and, thus, they will not appear in the transcript. Thus, you must attend carefully to the videotape in order to code these reliably.

I1) Verbal threats - Directing the child's behavior with verbal threats of negative physical consequences, e.g., "If you don't get that done right now, I'll beat your butt!" "There won't be any supper tonight if you can't do that next part." Do not code statements about realistic consequences: "The longer it takes you, the longer it will be until we have that snack."

I2) Physical restraint/force - Physically restrains child from folding paper, moving, etc. Physically forces child to fold paper, touch paper, touch felt board, etc. Can also be used to code ***pulling*** the paper away from the child ***or preventing the child from folding the paper***. Code I2 in parentheses next to code(s) for verbal behavior. Indicate with an arrow when I2 continues for more than one utterance. The arrow should stop when I2 stops.

I3) Physical punishment - Spanking, hitting, pinching, slapping or any other behavior that is intended to result in pain. Code I3 in parentheses next to code(s) for verbal behavior.

I4) Physical threat - Threatening gesture, such as shaking fist at child, making threatening face at child and stepping closer to the child. If painful physical contact is continuous with the threatening gesture, code physical punishment instead. Code I4 in parentheses next to code(s) for verbal behavior.

F Codes

Feedback

F1) Informative feedback/Information - Feedback that provides the child with information that may be helpful to him/her in constructing the boat. This feedback must NOT be a command. For example, "If you turn it the other way, it will work." Other examples include, "You're getting it too close," and "You've folded it too far." A command followed by informative feedback would receive two separate codes for the two independent clauses. Thus, "Turn it the other way; then, it will work," would be coded as a C1, F1.

F2) Positive feedback - Positive reinforcement or encouragement of the child's behavior, efforts, attempts, etc. For example, "Good!" "That's right."

Not Relevant

Z) If mother is speaking to herself or the camera person, the mother's utterance should be coded as a (Z) for zero relevancy or not relevant.

Unintelligible

X) If mother's verbalizations are unintelligible or if she trails off without completing the statement, then code as X (same as transcription symbol for unintelligible verbalizations). *If the mother's statement includes X's, code as X. If the mother rephrases her unintelligible statement and adds more information, code the second statement as a P5.*

None of the Above

N1) If P codes, E codes, S codes, C codes, I codes, F codes, 0 codes and X codes do not apply to a maternal statement, code it as N1, NOT any of the other codes.

Rating Maternal Mental Operational Demand (MOD)

Mental Operational Demand is a construct that summarizes how demanding a mother's statements are of representational thought from her child. There are three levels of mental operational demand.

For each maternal statement that you have coded with a "maternal behavior" code (pages 1 to 3 of this manual), you should also code one level and type of MOD. If the mother's statement includes two MODs, code the higher-level MOD.

For repeated MODs, code either an E2 (MOD) or a P5 (MOD) to discriminate repetitions from new MODs.

If the mother's statement is unintelligible or not relevant, do not code a level for MOD.

Not Relevant

Z) If mother is speaking to herself or the camera person, the mother's utterance should be coded as a (Z) for zero relevancy or not relevant.

Unintelligible

X) If mother's verbalizations are unintelligible or if she trails off without completing the statement, then code as X (same as transcription symbol for unintelligible verbalizations).

Level 0: NO OPERATIONAL DEMAND. Level 0 statements do not demand any referential or representational abilities on the child's part.

"Don't do that!"
"Let's make picture #1 first."
"That's hard!"

Level 1: LOW MENTAL OPERATIONAL DEMAND. Level 1 statements require referential language abilities on the part of the child, not representational.

The following are some level 1 MODs and examples of maternal statements for each category. The demand is on the child to:

1. **Label** - Getting the child to name an individual object, location, event, or action. No inference is required from the child.

"What are we going to make?"
"What color is this boat?"
"Can you tell me the name of this?"

2. **Observe** - Getting the child to attend, observe, examine, using any of the senses. This category includes parental demonstrations that require the child to observe. The form of the demand is verbal and the parent's action is a demonstration.

"Do you see the paper in number 1?"
"Look at number 2."
"Look what happens to the boat, when I fold the paper this way."

3. **Demonstrate** - Getting the child to show through action or gesture how something is done, when the outcome is clearly observable by the child. The parent asks the child to demonstrate. If the parent does the demonstrating the operational demand on the child is to observe (see 2 above).

"Show me how to fold it."

4. **Produce Information** - Asking a yes-no question to get the child to produce, process, confirm or reject information about labeling, location, materials, events; the information requested is associational.

"Is this called a boat?"
"Is that even?"
"Did you fold the paper up?"

Level 2: MEDIUM MENTAL OPERATIONAL DEMAND. Some representational abilities are required. However all representations are clearly dependent upon immediate observable information and require very little mental transformation.

The following are some level 2 MODs and examples of maternal statements for each category. The demand is on the child to:

1. **Sequence** - Ordering events in time, as in the steps to complete the boat task. Key terms are "next," "last," "first," "start," "begin," "after," ***"second," "before." One of these key sequencing terms must be included in the mother's statement in order for sequencing to be coded ("and" is not a sequencing term).*** Do NOT code sequencing, if the mother only points to the first picture and says to do it first ***(code 0)*** or if the mother says ***"We're supposed to do*** picture #1 first" (code 0 and code S1, Structuring, under Maternal Behavioral Codes). ***Sequencing can occur within or between stages. Remember, "then" is not a sequencing word.***

"First, we'll make picture #1, then we'll make picture #2."
"What picture did you make after #1?"
"What picture do we make next?"
"Which picture did you make first?"
"After you make picture #3, what will you make?"
"What's next?"
"Do you have to open up the paper before you make the next fold?"

Even if the statement that begins "first" and the statement that begins "then" are separated by a # sign, one slash, a double slash, or three dots, do NOT code the statements separately but combine them together as a "Level 2 -Sequence."

2. **Estimating/Enumerating** - Seriation, ordinal counting (1, 2, 3, 4) or estimating that requires similar numerical ability..

"Count the steps on the board."
"Count the steps we have finished."
"How many steps are on the board?"

The following four types of level 2 demand all follow the general rules for "Compare" according to Sigel, p. 29.

3. **Describe similarities** - Noting and comparing common observable features. These comments require *perceptual* analysis - comparing features of objects, events, pictures, etc. Note that all objects to be compared are present and observable.

Rule for discriminating describe similarities and produce information: describe similarities demands comparison of perceptual features, produce information does not.

"Is your boat like #5?"
"Is the fold in the right place?" (assumes that it is!)
"Is the bottom folded up like #4?"

4. **Describe differences** - Noting and comparing observable differences in feature. As in "describe similarities," these comments require perceptual analysis. Note that all objects to be compared are present and observable.

"Is your boat different from #5?"
"Is the fold in the right place?" (assumes that it is not!)
"How is your paper different from #2?"
"How is this boat different from the one you made the first time?"

5. **Infer similarities** - Identifying nonobservable similarities. At least one of the objects, events, pictures must not be present for reference. Thus, infers similarities requires some conceptual analysis. The child is asked to compare at least one not present (or not yet present) object or event with an object or event that may or may not be present. ***Statements with "Remember" are coded as Infer Similarities, unless they are commands (e.g., NOT, Remember, fold it down!).***

"Fold your piece of paper the same way as #1 is folded." (Note, #1 is visible on the display board; the child's paper has not yet been folded, so only one item is observable.)

6. **Infer differences** - Identifying nonobservable differences. At least one of the objects, events, pictures must not be present for reference. Thus, infers differences requires some conceptual analysis. The child is asked to compare at least one not present (or not yet present) object or event with an object or event that may or may not be present.

"How is your paper different from #3 on the board?"

Level 3 - HIGH MENTAL OPERATIONAL DEMAND. Level 3 statements require representational abilities.

The following are level 3 MODs and examples of maternal statements for each category. The rule of thumb for is that questions make level 3 demands, declarative or exclamatory statements do not. Exceptions to this rule occur when the mother makes an evaluative statement, for which the child's response indicates that he has carried out a similar evaluation, such as when the child agrees or disagrees with the mother's evaluation. The demand is on the child to:

1. **Propose alternatives** - Getting the child to provide other options, different ways of carrying out the task at hand (but without any negative evaluation implied). Key terms are "other," "another," "different from before."

"What other way could you fold the paper?"
"Do you know another way to make a boat?"

2. **Evaluate consequences** - Appraising the quality of a product or outcome. Appraising feasibility. Appraising the aesthetic quality of personal liking. Thus, the demand on the child is to carry out these activities. "Can we" questions and "Can you" questions that use a collective meaning for "you" are classified as evaluate consequences. When the "you" is directed to the child, code either *evaluate competence* or *evaluate performance* (see below).

"Will the boat look right if you fold the top down?"
"Is this boat easy to make?"
"Can we make this boat?"
"This is hard to make." *Code only when the child responds indicating that he agrees or disagrees with this statement.*

3. **Evaluate own competence** - Appraising own abilities. The demand is on the child to appraise his/her own abilities. Note that questions make the demand on the child. Mother's statements that express her evaluation of the child's competence do not demand that the child think about his/her own abilities.

"Do you think you can make a boat like this one?"
"Can you fold it like this?"
"I can make a paper boat, can you?"
"Do you know how to make a boat?"
"Can you show Sissy how to make this when you get home?"
"Do you understand?"
"Do you know how to fold the paper to make the next picture?"
"Do you need me to help you?"
"Are you ready?" Code only when the child responds (verbal response or head nod/shake) that he/she agrees or disagrees with this statement.

4. **Evaluate own performance** - Appraising the quality of the performance or the effort expended on a task. The demand is on the child to assess his/her performance. Do not code praise and encouragement such as, "That's neat," or "Very good!"

"Did you work hard on that boat?"
"Was that hard work?"

5. **Infer cause and effect relationships** - Predicting outcome on the basis of causal relationship; explanation of events.

"We can make a boat [effect] by folding this paper [cause]?
"If you fold the bottom up, what will that make?"

6. **Plan** - Arranging conditions to carry out a set of actions in an orderly way; figuring out how to carry out a task; carrying out the task. The child must be involved in the decision or carrying out of the task.

"If you want the paper to fold here, what should you do?"
"How can you make a boat with this paper?"
"Now, what do we do?"

7. **Evaluate other's competence** - Appraising abilities of others. The demand is on the child to appraise the ability of the mother or someone else that she mentions. Note that questions make the demand on the child.

Rating Maternal Affective Tone

Directions to coders: After you have coded the above verbalizations and behaviors, replay the videotape, paying careful attention to maternal affect. At the end of playing the tape, rate the occurrence of four types of affect, each on a 5-point scale:

1 - the group of behaviors never occurred
2 - the group of behaviors occurred infrequently (2 - 3 instances)
3 - the group of behaviors occurred moderately often (4 - 5 instances)
4 - the group of behaviors occurred frequently and sometimes together (e.g., smiling and laughing; smiling and positive tone of voice or warm words of praise)
5 - the group of behaviors occurs very frequently both alone and in combination (smiling and laughing; smiling and positive tone of voice or warm words of praise)

Positive affect: The mother is happy, smiling, or laughing. Her body movements may reflect joy or other positive affect. The mother's tone of voice is positive, warm, and affectionate. Tone of voice, facial expression, voice, and body movement that are indicative of positive affect may occur independently or together.

1	2	3	4	5
Consistently NOT positive (may be negative, neutral, or flattened)	Infrequently positive in face or voice (2 or 3 instances)	Sometimes positive in face or voice (4 or 5 instances)	Frequently positive in face and/or voice (more than 5 instances of face or voice or both	Frequently positive in face and voice (more than 5 instances; face and voice together show positive affect at least once)

Hostile/Angry/Aggressive affect: The mother is hostile, angry, and/or aggressive. Her face may be angry, mad, furious, annoyed, disgusted, or contemptuous. The mother's tone of voice is negative. Tone of voice, facial expression, voice, and body movement that are indicative of hostile affect may occur independently or together.

1	2	3	4	5
Consistently NOT hostile	Infrequently hostile in face or voice (2 or 3 instances)	Sometimes hostile in face or voice (4 or 5 instances)	Frequently hostile in face and/or voice (more than 5 instances of face or voice or both showing hostility/anger	Frequently hostile in face and voice (more than 5 instances; face and voice together show hostility/anger at least once)

Flattened/Depressed/Sad affect: The mother is completely inexpressive emotionally or shows sadness/depression. In situations in which you might expect either positive or emotion or anger to be expressed, there is nothing. There is little or no variation in affective tone from moment to moment. There is also diminished body movement that would express positive or hostile affect. Sadness and depression may be expressed in face (downward turn of mouth) or voice (tired, melancholy tone) or both.

1	2	3	4	5
Consistently NOT depressed	Infrequently depressed in face or voice (2 or 3 instances)	Sometimes depressed in face or voice (4 or 5 instances)	Frequently depressed in face and/or voice (more than 5 instances of face or voice or both showing depressed affect	Frequently depressed in face and voice (more than 5 instances; face and voice together show depressed affect at least once)

Involved affect: The mother is engaged in and enthusiastic about the task or about the child. This category is indicative of more than positive affect. The mother is energetic. She does not have to be effervescent (bubble) but her energy is contagious.

1	2	3	4	5
Consistently NOT engaged or enthusiastic	Infrequently engaged or enthusiastic in face or voice (2 or 3 instances)	Sometimes engaged or enthusiastic in face or voice (4 or 5 instances)	Frequently engaged and/or enthusiastic (more than 5 instances of engagement and enthusiasm together at least once	Frequently engaged and/or enthusiastic (more than 5 instances of engagement and enthusiasm together at least twice

Rating Maternal Warmth

Please rate each mother after you have coded the first five minutes of videotape of the boat task. The question that you are answering is "How warm is the mother toward her child?" "This includes, but is not limited to, positive affect toward her child, responding to the child's bids for affection, maintaining physical proximity when appropriate, affectionate physical contact or a warm verbal tone or style (Iannotti, 1985, p. H9)." The scale is as follows:

5. Mother is very warm. Clearly shows her affection for her child.
4. Mother is warm. Frequently shows warmth and affection but is also likely to respond with a neutral tone.
3. Mother is average. Shows occasional warmth but generally responds in a matter-of-fact manner.
2. Mother is cool. Mother is somewhat distant to child. May show occasional warmth but in a mechanical or awkward manner. Generally conveys a slightly negative tone toward the child.
1. Mother is very cool. Mother is distant. Doesn't seem to care about her child. Conveys a negative affect toward child or the sense that the child is a burden or an imposition on her life.

Circle one of the following:

1	2	3	4	5
Very cool	Cool	Average	Warm	Very warm

Rating Maternal Awareness of Child's Motives, Emotions, or Thoughts

Please rate each mother after you have coded the first five minutes of videotape of the boat task. The questions that you are answering are: 1) To what extent "did the mother demonstrate an understanding of her child's perspective as evident in his/her feelings, thoughts, or motives?" 2) How sensitive was the mother "to the child's changing emotional state?" 3) How responsive was the mother to the child's needs, even when they were poorly expressed (Iannotti, 1985, p. H9)?" The scale is as follows:

5. Mother is very aware of her child's presence in the room and what her child is feeling and thinking. Frequently anticipates problems in communication and adjusts her verbalizations or suggests solutions to problems the child is having. Mother ***rarely*** demonstrates egocentric behaviors ***(i.e., up to two)*** toward her child.

4. Mother is aware of her child's perspective and anticipates problems. Mother makes adjustments in her behavior and suggests adjustments for her child. There are occasional ***(up to four)*** egocentric lapses, however, that may include ambiguous communications or ignoring the perspective of her child.

3. Mother is moderate or average in awareness. Mother is aware of child's presence and child's perspective but also exhibits more than occasional egocentric behavior ***(five to eight)***. This may include stating things in an egocentric manner, forgetting the child's perspective, or displaying gestures or objects outside the child's field of vision.

2. Mother is below average in awareness. Although she may be aware of child's perspective, she usually seems unaware and ignores the child's point of view. She uses ***more than eight*** egocentric statements ***or behaviors***, presents materials outside the child's field of vision, uses vocabulary unsuited to the age or developmental level of the

child, and/ or repeats statements (to which the child has not responded) without changing the content.

1. Mother is very unaware. Mother seems very self-centered and unaware of child's needs, feelings, thoughts or motives. She frequently presents tasks in an ambiguous manner; she repeats without variation, she refers to objects outside the child's visual field, and/or she uses words or concepts that are not appropriate for the child's developmental level. ***Thus, the total number of egocentric statements/behaviors is more than eight.***

Circle one of the following:

1	2	3	4	5
Very unaware	Unaware	Average Awareness	Aware	Very Aware

Rating Maternal Overcontrolling

Please rate each mother after you have coded the first five minutes of videotape of the boat task.

3. Mother is not appropriate because she is very overcontrolling and anticipates problems that do not appear to exist. The pacing of the task and the solution of the task are controlled by the mother with little input or influence by the child. The mother intervenes frequently (e.g., 4 or 5 times during the entire task) and physically when the child could have continued on his own without making any mistakes. The mother cannot keep her hands off of the boat. She allows the child to make folds but then does them again or runs her fingers over his/her folds, imitating (or fixing) the child's behavior in her own way, thus negating the child's efforts.

2. Mother is somewhat overcontrolling and anticipates some problems which do not exist. Thus the mother may tell the child what to do when he/she does not need help, but not as frequently as in the above examples (e.g., 1 to 3 times during the task). The mother does not take over the task physically (i.e., folding the paper or fixing the child's folds), or only folds the paper twice, but does direct the child's behavior verbally when he doesn't need her help (following the 1 to 3 times rule above).

1. Mother is not overcontrolling, either being uninvolved or giving clear and relevant directions to which the child is capable of responding. The mother's interventions are effective in helping the child reach the goal or the mother never intervenes. If the mother intervenes, she does so only when the child will take an incorrect step and intervenes so that the child's solution will be correct and the mother can praise the child.

Circle one of the following:

1	2	3
Not Overcontrolling	Somewhat Overcontrolling	Very Overcontrolling

Rating Maternal Undercontrolling

3. Mother is not appropriate because she is very undercontrolling and remains uninvolved despite the child's needs. She doesn't pick up cues from the child. She does not anticipate any problems that the child might be having. She does not prevent errors from occurring. The mother does not provide sufficient instruction or structure to guide the child to make correct folds and/or shapes. Some mothers may praise the child's work, even when folds and/or shapes are obviously wrong and will not result in anything that approximates the boat. If the mother makes the boat herself, she not undercontrolling, even if she has provided little to no instruction for the child.

2. Mother is somewhat undercontrolling in that she does not always intervene when the child signals clearly that he/she needs help. She prevents the child from making some mistakes but is not attentive enough to prevent other mistakes. The mother's lack of involvement is not as extreme as in the above category.

1. Mother is not undercontrolling, either being overcontrolling or giving clear and relevant directions to which the child is capable of responding. The mother's interventions are effective in helping the child reach the goal or the mother's interventions are intrusive

and overcontrolling. If the mother does not provide a lot of structure or instructions, it is because the child needs no help and is completing the task accurately on his/her own. If the mother makes the boat herself, she is categorized as a 1 on undercontrolling.

Circle one of the following:

1	2	3
Not Undercontrolling	Somewhat Undercontrolling	Very Undercontrolling

Rating the quality of the boat

Please rate the quality of the final boat, after the child has completed it on the following three point scale:

3. Boat is precisely folded. The final boat matches or closely matches the fifth and final step of the boat folding task that is fixed to the flannel board.

2. Boat is recognizable but imprecise. The final "boat" resembles a boat, but has points of dissimilarity or imprecision. The point at the top may be missing. Alternatively the sides and/or bottom may be folded at the wrong angles, but the three-sided nature of the

1. Boat is unrecognizable as a boat. The final "boat" does not resemble the final step of the boat folding task. The "boat" may be a folded wad of paper or it may be a crumpled wad.

APPENDIX C

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Date: July 23, 1999 IRB #: HE-00-108

Proposal Title: "THE RELATIONSHIPS AMONG PARENTING PRACTICES, MATERNAL DEPRESSION, AND CHILDREN'S LANGUAGE AND COGNITIVE PERFORMANCE FROM HEAD START THROUGH KINDERGARTEN"

Principal Investigator(s): Laura Hubb-Tait
Dusti Austin

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Signature

Carol Olson, Director of University Research Compliance — July 23, 1999 Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

VITA

Dusti S. Austin

Candidate for the Degree of

Master of Science

Thesis: THE RELATIONSHIPS AMONG MATERNAL PARENTING PRACTICES, MATERNAL DEPRESSION, AND CHILDREN'S LANGUAGE AND COGNITIVE PERFORMANCE FROM HEAD START THROUGH KINDERGARTEN

Major Field: Family Relations and Child Development

Biographical:

Personal Data: Born in Valparaiso, Indiana, On August 2, 1975, the daughter of Terry and Carla Stanley; Married Warren A. (Trey) Austin, III, On September 30, 1995.

Education: Graduated fro Elmore City-Pernell High School, Elmore City, Oklahoma in May 1993; received Bachelor of Science in Family Relations and Child Development from Oklahoma State University, Stillwater, Oklahoma in December 1997. Completed the requirements for the Master of Science degree with a major in Mechanical Engineering at Oklahoma State University in December 1999.

Experience: Employed 3 years as personal assistant to Dr. Jeffrey D. Spitler, Mechanical and Aerospace Engineering, Oklahoma State University 1996 to 1999; Volunteer 1996 summer for Healthy Families America, Pottawatomie County; Employed 1 ½ years as a Research Assistant for Dr. Laura Hubbs-Tait, Family Relations and Child Development, Oklahoma State University.

Professional Memberships: National Council on Family Relations; Oklahoma Council on Family Relations.