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Depression and maternal attribution style in mothers of preschool children

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Case Western Reserve University, 1990

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DEPRESSION AND MATERNAL ATTRIBUTION STYLE IN MOTHERS
OF PRESCHOOL CHILDREN

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Submitted in partial fulfillment of the requirements
for the Degree of Doctor of Philosophy

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Mary Anne Lotstein
DEPRESSION AND MATERNAL ATTRIBUTION STYLE IN MOTHERS

OF PRESCHOOL CHILDREN

Abstract

by

MARY ANNE W. LOTHSTEIN

The present study examines the relation between depressive symptoms in mothers of preschool children and attributional style for the child's behavior. The subjects were 54 mothers of preschool children, ages 3 to 6. Two groups of mothers were formed, the depressed group and the nondepressed group, based on score on the Beck Depression Inventory. Other measures used were the Parental Attitude Test, the parent and teacher forms of the Achenbach Child Behavior Checklist, the Attributional Style Questionnaire, and the Maternal Attribution Test. The Maternal Attribution Test, devised by the author, measures the dimensions of the mother's perception of the causes for her child's behaviors.

The hypotheses were that the depressed mothers
would have more negative perceptions of their children, that they would be more accurate in their perception than the nondepressed mothers, that the depressed mothers would have a "depressive attributional style", and finally, that maternal attribution style would be a predictor of the mother's perception of her child.

Results included the finding that the two groups were significantly different in SES and mother's age. These findings were explained in terms of the social context of depression in women. Differences were found between the depressed and nondepressed mothers' perceptions of their children as measured by parental attitude, and perception of number of behavior problems. On some analyses, SES had an effect on the variation of perception scores, and this finding was discussed. Age of the mother did not have an effect on perception scores of the mother. There were no differences between boys and girls in how their mothers perceived them and there was one difference in perception based on age of the child. Although the depressed mothers felt more negatively about their children, the teachers of those children reported no significant difference in their behavior in school. Depressed mothers were found to have an "even-handed" attributional style for their children's behavior, while nondepressed mothers were found to have a
positive attributional style. Finally, number of behavior problems perceived by the mother, and attributional style for negative behavior were the best predictors of the mothers' perception of their children.
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Introduction

Definition of Maternal Depression

The spectrum of maternal depression during the child's life ranges from transient depressive episodes to more consolidated clinical depressions. The transient depressive states, often referred to as the "baby blues", occur in 65-75% of mothers after the birth of the baby, and usually clear up in 7-10 days. This is a mild condition, consisting of sadness, weepiness, emotional lability and extreme tiredness. Other forms of depression in the mother during the early life of the child range from mild transient to persistent depressions, primary affective disorders (either unipolar or bipolar), to severe psychotic depressions.

Beck (1961) using clinical interviews and his Depression Inventory, found the following characteristics to be present in depressed subjects: sad expression, stooped posture, slow spech, depressed mood, diurnal variation of mood, feelings of hopelessness, conscious guilt, feelings of inadequacy, somatic preoccupations, suicidal wishes, indecisiveness, low level of motivation and interest, fatigability and sleep disturbance, constipation, and loss of appetite. He found these symptoms occuring twice as frequently, and with more intensity in
psychotically depressed rather than neurotically depressed individuals. He concluded therefore, that no specific sign or symptom, other than delusions, could distinguish psychotic from neurotic depressions. The more severe the symptoms, the more likely the patient is of being diagnosed psychotically depressed. He feels that one can speak therefore, of a "depressive spectrum".

Incidence

The first three months after the birth of a child is a period of high risk for psychiatric disorders in women. In fact, during this period, women are diagnosed as having psychiatric disorders at five times the expectancy rate of the general population. The majority of these disorders are affective in nature. To be more specific about the incidence of depression, LaRoche (1986) has done a review of the epidemiological literature and concludes that clinical unipolar depression is most frequent in women ages 25-44, a time which is viewed as usually the most productive in a woman's life. She is usually married and living at home rearing children, therefore very much at risk for having depression while raising children.
As mentioned above, mild transient states of post-partum depression are extremely common, estimated at 65-75% of the mothers. Other, more serious and persistent forms of maternal depression are also fairly common. A study done in 1975 (Brown, NiBhrolchain, & Harris) found that in an urban population, the prevalence of depression in women varies from 5% to 42% of the samples studied, depending on social class and on presence of children under the age of six years. Middle class women were found to have a prevalence rate of 5% whereas working class women with children under the age of six years had prevalence rates of 42%. Other studies find similarly high rates of depression in mothers of young children (Zajicek & Wolkind, 1978). Although these figures may be inflated due to transient depression, there are indications that fully 10% of mothers remain depressed for the first three and one half years of their child's life, with a large proportion of those remaining chronically depressed (Wolkind, 1981).

Depression and Maternal Perception

Recently, a group of researchers examined the effects of maternal depression, child compliance, and child deviant behaviors on maternal perception of
child adjustment. They found that the mother's perception was the most important single variable in referral to child behavior clinics, and that depression in the mother is the best predictor of this perception (Christensen, Phillips, Glasgow, & Johnson, 1983; Griest, Forehand, Wells, & McMahon, 1980; Griest, Wells, & Forehand, 1979; Rickard, Forehand, Wells, Griest, & McMahon, 1981; Rogers & Forehand, 1983). Their research suggests that at higher levels of depression, mothers tend to view their children as more maladjusted and that the depression influences parental perception more than actual child behavior (Rickard et al., 1981).

Webster-Stratton and Hammond (1988) investigated the relationship between maternal depression, maternal perception of child adjustment, parent behavior, and child conduct problems of clinic referred children ages 3 to 8. The depressed mothers reported higher Internalizing scores, higher Externalizing scores and higher Depression scores on a child behavior problem checklist, however home observers found no difference between the children of depressed and nondepressed mothers, and there was a strong trend for teachers to report fewer behavior problems for the children of depressed mothers. Despite these findings, Brody and
Forehand (1986) believe that depression alone is not sufficient to account for parental perceptions of child maladjustment. Their reanalysis of the data suggests that a high level of maternal perception of child maladjustment is due to an interaction between a high level of maternal depression and a high level of child non-compliance. Brody and Forehand (1986) were able to demonstrate that mothers who reported similar levels of depression rendered different judgments regarding their child's adjustment depending on their child's rate of noncompliant behavior. These findings raise the need for a more refined theoretical analysis of the role of parental depression and children's behavior to parental perceptions of maladjustment. The purpose of the current research is to provide such a theoretical model through the use of attribution theory.

Patterson (1982) proposed that maternal depression may either directly affect maternal perceptions of the child, or the depression may disrupt the mother's practice of good child management, which then increases child acting-out problem behavior. Data is available to support both processes.
Maternal Depression and Parenting Behavior

Weissman, Paykel, and Klerman (1972) interviewed 40 depressed mothers and a matched comparison group of 40 mothers without psychiatric histories. In comparing the two groups, the researchers found the depressed mothers to be significantly more impaired in their mothering functions than the nondepressed mothers. The impairments in their parental role included diminished emotional involvement, impaired communication, disaffection, and increased hostility and resentment. In addition, depressed mothers of pre-school and school age children described themselves as being irritable and intolerant of the children's noise and activity. While this study did not specifically examine the issue of the mother's perception of her child, it would appear that the depressed mothers viewed their children's noise and activity levels more negatively than did the non-depressed mothers, and behaved more negatively toward their children than did the non-depressed mothers. Others (Anthony & Ittleson, 1980; McLean, 1974) have found similar perceptions of inadequate parenting in depressed parents. These results, however, must be viewed with caution, as they are based on interview
data and the literature indicates that depressed individuals tend to view themselves in more negative terms (Beck, Rush, Shaw, & Emery, 1979; Layne, 1983).

More direct evidence of how depression may affect parenting behavior has been gathered by Hinchliffe, Hooper, and Roberts (1978), and by Williams and Carmichael (1985). Hinchliffe et al. found that depression is associated with an increase in the use of control attempts, which has been shown to be an excellent predictor of child noncompliance (Williams & Forehand, 1984). Williams and Carmichael (1985) found depressed mothers of infants were confused, uncertain, and anxious in their handling of their infants, with some mothers becoming angry and frustrated to the point of hitting their infants. It would thus appear that there is evidence to support Patterson's contention that depression may disrupt a mother's ability to manage her child effectively.

**Maternal Depression and Child Behavior Problems**

Recent reviews (Beardslee, Bemporad, Keller, & Klerman, 1983; Orvaschel, 1983) of the effects of maternal depression on children further support Patterson's model that depressive moods in parents lead to increases in child acting-out behaviors. Children of depressed mothers have been found to
have difficulties in the areas of cognitive and school functioning, social and family behavior, and psychopathology (especially depression). In one study (Chodsian, Zajicek, & Wolkind, 1984) it was noted that child problems significantly correlated with maternal depression as early as 27 months, however the most direct relationship was found to be between maternal depression at 14 months and child problems at 42 months. Weissman et al. (1972) found that the children of the depressed mothers exhibited hyperactivity and excessive sibling rivalry. In addition, symptoms in several of the children they studied were more serious, and consisted of enuresis, school failure, and weight loss, all factors that have been associated with depression in children. Neale and Weintraub (1975) found that compared to the children of nondepressed mothers, children of depressed mothers were rated as having higher levels of classroom disturbance, impatience, disrespect, defiance, inattention, and withdrawal. Beisser, Glasser, and Grant (1967) reported similar findings. The children of a depressive parent were rated as more destructive, having more tantrums, and fighting more with siblings than the control children. In another study (Seifer, Sameroff, & Jones, 1981) the
infants of depressed, schizophrenic, and control mothers were evaluated. At both 30 months and 48 months, the infants of the schizophrenic and depressed mothers were rated as more depressed and bizarre than the infants of controls. However, only the infants of depressives were rated as less cooperative, more whiny, and using more imaginary play than the control children, indicating to the authors that depression in mothers might even be more detrimental to child behavior than other psychiatric disorders. Rolf and Garmezy (1974) compared the behavior of children of depressive mothers to the behavior of children of control mothers. The children of the depressive mothers exhibited more withdrawn, shy, and socially isolated behavior than did the control children. McLean (1974) found that children of depressed parents had difficulty learning interpersonal coping skills, and were likely to learn helplessness, self-depreciation, and social withdrawal as ways of interacting. In a study that evaluated children of mothers hospitalized for depression, Welner, Welner, McCrary, and Leonard (1977) found that these children had a higher incidence of depressed mood, death wishes, frequent fighting, withdrawal, headaches, and loss of interest
than did the children of control mothers.

Hammen, Adrian, Burge, Jaenickke, & Hiroto (1987) examined maternal depression (both current and lifetime), levels of stress, and child behavior and school functioning. They found that current depressive symptomatology in the mother was the best predictor of children's outcomes.

Fergusson, Horwood and Shannon (1984) concluded that the apparent relationship between family stress and child behavior problems could be almost entirely explained by the mediating factor of maternal depression. Another study (Sameroff & Seiffer, 1983) examined the risk factors of parental mental health, social status, parental perspectives, and family stress on the social-emotional competence of the child. Of these, only maternal mental illness remained significant when all other predictors were partialled out. The accumulation of this data strongly suggests that depressive moods in parents constitute a significant risk to the children of these individuals.

The second mechanism in Patterson's model is that depression directly affects maternal perceptions of the child. As noted earlier, results of numerous studies (e.g., Christensen et al., 1983; Forehand,
Wells et al., 1982; Rickard et al., 1981) have indicated that parents, almost exclusively mothers, who report higher levels of depression, perceive their children as more deviant. It should be noted that measures of depression accounted for more variance in parental perceptions of child adjustment than did objective evaluations of child behavior. A recent study by Forehand, Lautenschlager, Faust, and Graziano (1986) using a LISREL path analysis concluded that maternal depressive mood has a direct effect on perceptions and only an indirect effect on child behavior through parenting behavior. While other models can be generated to account for the relation between maternal depression and perceptions, and between maternal depression and parenting/child behavior (e.g. child behavior influences maternal depression), it would appear that an important issue that needs to be addressed to further understand the interaction between problems is the process through which the maternal depression affects the mother's perception of her child's adjustment or her behaviors toward the child.

**Depression and Attribution Style**

This study will examine one possible process—the effect of depression on a mother's attributions
about her child's behavior. Specifically, this study will examine whether depressed mothers' explanations of the causes of their child's behavior differ from those of nondepressed mothers' explanations. The reasons a mother gives for why her child behaves a certain way would appear to be an important determinant in how she perceives her child, as well as in how she responds to the child. Indeed, Kelley and Michela (1980) stated that, "attributions affect our feelings about past events and our expectations about future ones, our attitudes toward other persons and our reactions to their behavior and our conceptions of ourselves and our efforts to improve our fortunes" (p.489). In addition, Beck's model of depression (1967) directly addresses the role of cognitions or thought patterns in producing depression and depressive symptomatology.

Because the primary focus of the present study is maternal attribution, some brief introduction of the concept of attribution is appropriate at this point. Attribution theory is a concept introduced by Heider (1944) and developed by many psychologists, most notably Bem (1972), Kelley (1973), and Jones and Nisbett (1971). Attribution theory is concerned with defining the ways by which people understand and
explain behavior, their own and others'. One of the principal ways of understanding behavior as suggested in attribution theory is through the dimension of internality versus externality. Behavior can be perceived as being caused by an internal factor, such as ability, personality trait, or attitude, or it can be caused by an external factor, such as the situation. Other dimensions which have been examined as influencing one's understanding of behavior include responsibility for outcome, controllability of outcome, and whether a certain cause for behavior is stable versus unstable or global versus specific.

There has been a great deal of interest recently in the relation of causal attribution to theories of depression. The learned helplessness theory of depression was reformulated by Abramson, Seligman, and Teasdale (1978) to account for individual differences in causal attribution style. Specifically, they proposed that the tendency to attribute uncontrollability of bad outcomes to internal, stable and global causes predisposes individuals to depression (due to lowered self-esteem, feelings that things won't change, and generalizability of helplessness). They called this a "depressive attributional style". This
attributional style, it was hypothesized, when combined with a negative life event, can cause depression. Studies, (Alloy, Peterson, Abramson, & Seligman, 1984; Klein, Fencil-Morse,& Seligman, 1976; Kuiper, 1978; Rizley, 1978; Seligman, Abramson, Semmel, & von Baeyer, 1979) have produced results in agreement with this hypothesis. Additionally, there have been some results pointing to the presence of a depressive attributional style for positive events (Peterson, Schwartz, & Seligman, 1981; Seligman et al. 1979), although the results are not as strong. The depressives in these studies tended to view positive events as being caused by more external, unstable, and specific causes than the non-depressives. However, the depressives were more "evenhanded" in their assigning of causal attribution, that is, they tended to perceive causes of both positive and negative events more similarly. The nondepressed, on the other hand, were more extreme in their different explanations for positive and negative outcomes. That is, the nondepressed have been found to have a "self-serving" bias wherein success is explained in an internal, stable, and global manner, and failure is explained in an external, unstable, and specific manner (Raps,
Peterson, Reinhard, Abramson, & Seligman, 1982; Sackheim & Wegner, 1986; Seligman et al., 1979).

Most of the research in attribution has used college students as subjects and critics have thus noted a lack of generalizability as a shortcoming. In response to this criticism, recent studies (Raps et al., 1982; Sackheim & Wegner, 1986) have used clinically depressed patients as subjects and found similar results. In these studies, depressed patients were found to utilize a "depressive attributional style" whereas comparison groups of hospitalized schizophrenics, and hospitalized medical patients did not utilize such a style of attribution. Rather than interpreting this style of attribution in the subclinically depressed population as a cognitive distortion, Sackheim and Wegner (1986) believe the depressive attributional style to be a result of a lack of the self-serving bias that is typical of non-depressed individuals. Using a population of depressed (>12 on the Beck Depression Inventory) and non-depressed (< 6 on the Beck Depression Inventory) college students and clinically depressed patients (as well as schizophrenics and medical patients as controls), the authors had the subjects complete two tasks. One was a story task in which they had to
rate positive and negative situational outcomes in terms of the controllability of the outcome, their own responsibility for the outcome, and the intensity of the outcome (i.e., how good or bad). In the other task, the subjects actually performed a number-guessing task to which they were randomly assigned either success or failure, and then they rated their own performance on the same dimensions as the first task (i.e., controllability, responsibility, and intensity). The results indicated a strong self-serving bias in the attributional functioning of non-depressed individuals. That is, if an outcome is positive, the non-depressed subjects attributed high controllability, high responsibility, and strong intensity to themselves and their efforts. Further, in cases of a negative outcome, the non-depressed subjects attributed low control, low responsibility, and low intensity. The attributional behavior of the depressed subjects was more complex. The depressed students did not show this "self-serving" bias, or showed it to a significantly lesser extent. The depressed patients, however, displayed an attributional pattern that was opposite in direction to the control groups. That is, when outcomes were negative, the depressed patients felt they had more
control and experienced the negativity as more intense. Since the attributional behavior of the normal subjects was not based on a realistic appraisal, but rather due to the random assignment of success and failure, then differences in the responses of the depressed subjects and control groups do not necessarily indicate cognitive distortion in the depressed groups, but rather lack of a self-serving bias (Sackheim & Wegner, 1986).

Other research in self-appraisal of depressives has reported more accuracy of appraisal in depressed than in nondepressed. Alloy and Abramson (1979), in investigating the topic of judgment of contingency as it relates to a learned helplessness theory of depression, noticed an unusual outcome. The depressed subjects were more realistic and accurate about their own degree of contingency (i.e., to what degree their responses affect a certain outcome) than were nondepressed individuals. The authors hypothesized a lack of self-esteem to be responsible for the breakdown of the mechanism of self-deception in depressed individuals, which was operating in nondepressed individuals. Depressed individuals also were found to be more accurate in judging their own social competence than either nonpsychiatrically
disturbed controls or subjects with psychiatric diagnoses other than depression (Lewinsohn, Mischel, Chaplin, & Burton, 1980). Depressed individuals' perceptions of themselves as being less socially competent than the subjects in the other groups was most consistent with outside observers ratings of the social competency of the three groups. The other groups were hypothesized to have an "illusory self-enhancement", in which they perceived themselves more positively than how others saw them.

**Depression and "Other" Attribution**

The ability of depressed subjects to judge others however, may not be as accurate as their ability to accurately judge themselves. Tabachnik, Crocker, and Alloy (1983) studied depressed and nondepressed college students and found that while nondepressed students perceived themselves as better than others, and thus less accurate, they were more accurate than the depressed students in judging the percentage of college students who were characterized by certain attributes. This finding suggests that the realism and accuracy of depressed subjects' self-judgments may not carry over to their judgments of others. In a similar vein, another study (Martin, Abramson & Alloy, 1984) examined the judgments of
depressed and nondepressed subjects about their own and others' control of contingency. Depressed subjects, on the whole, while accurate about their own control of contingency, were not accurate about the amount of control that they perceived others as having.

While the research findings point to a lack of accuracy in depressed subjects in judging others, there is some evidence that judging an "intimate other" may be another matter. Taylor and Koivumaki, in a study of causal attribution (1977), found that there existed a "positivity effect" in which people were seen as causing positive behaviors, and situational factors were seen as causing negative behaviors. This positivity effect was found to operate most strongly on perceptions of intimate others (in this case, the spouse). The authors noted that this positivity effect explained more of the variance for intimate others than did the self-serving bias for self perception. Given the absence of a self-serving bias in depressed individuals' perceptions, one might suspect a similar absence of positivity effect for intimate others.

Empathy with others seems to have an effect on attribution of other's behavior similar to the
effects on attribution of being an "intimate other". Regan and Totten (1975) found that observers who were instructed to empathize with a target figure produced different causal attributions for the targets' behavior than observers who did not empathize. (Attribution research has described the tendency for individuals to self-attribute internal causes for good outcomes and external causes for bad outcomes. Conversely, when an individual is judging another's behavior, the opposite attributions are made—external causes for good behavior and internal causes for bad behavior. This is called the actor-observer difference.) Specifically, Regan and Totten (1975) found that they could make observers' attributions similar to that of actors by inducing the observer to empathize. Another study (Gould & Sigall, 1977) found quite similar results. Subjects who were instructed to empathize with a target figure, attributed causes for the target's behavior which were the same as they would have attributed for their own behavior. That is, if they were instructed to empathize with the target figure, they attributed his success at a task to dispositional factors (internal) and his failure at a task to situational factors (external). The authors' conclusion was that "the
empathic sharing of emotional experience leads to the sharing of self-enhancing outcome attributional biases" (p. 490).

Gretarsson and Gelfand (1988) also found a positive bias in mothers' attributions of their children's behaviors. They interviewed normal mothers (nondepressed) about their 4 to 12 year old children, specifically about their children's positive and negative characteristics and instances of their children's desirable and undesirable social behavior. The authors found that normal mothers perceive their children to be dispositionally good. They saw their children's positive characteristics to be inborn (internal) and negative characteristics to be transitory and extrinsically caused (external). They explained their children's prosocial behavior as caused by personality dispositions and attributed undesired characteristics and misdeeds to situational influences. The only exception was when the child was considered difficult to control. Then the mothers tended to view the child as "constitutionally impaired".

To briefly summarize the relevant research findings in attribution as it relates to depression: there seems to be a "depressive attributional style"
in which negative events are seen as being caused by internal, stable, and global factors. In addition, there is some evidence for believing that depressives see positive events being caused by more external, unstable, and specific factors than non-depressives do. Other research indicates that clinically depressed patients utilize a depressive or "punitive" attributional style, and that subclinically depressed individuals actually are lacking the "self-serving" bias of nondepressed individuals. Furthermore, while depressed subjects are accurate at making judgments about themselves, they are not as accurate as non-depressed persons in making judgments about others. Finally, when the non-depressed are making judgments of causal attribution of others, "intimate others" and others that are empathized with are included in their self-serving bias. For normal mothers, the self-serving or positive bias, is almost always extended to their children.

It is predicted in this study that depressed mothers will extend their depressive attributional style to understand the causes of their children's behavior, just as the non-depressed subjects in the previous studies extended their self-enhancing bias to those they empathized with. Although this idea
has not been examined experimentally, there is some research in related areas which supports this hypothesis. Larrance and Twentyman (1983) studied maternal attributions of child-abusing and child-neglecting mothers as compared to a control group of non-abusing mothers. They found that the abusing mothers expected their children to behave in a more negative manner than the non-abusing mothers did. Additionally, they found that the abusing mothers attributed their children's successes to external and unstable causes, whereas they attributed their children's failures to internal and stable causes. The comparison group of non-abusing mothers showed a pattern of attributions in the opposite direction. That is, the comparison mothers showed a pattern of self-enhancing attributions for their own children.

In another study, Seligman, Peterson, Kaslow, Tanenbaum, Alloy, and Abramson (1984) examined the effects of depression on attribution style in depressive children and their parents. The authors reported that children with depressive symptoms also exhibited a depressive attributional style. These depressed children's mothers, but not their fathers, shared a similar attributional style. The authors explain this result by stating that "a child may
learn how to explain bad events from the mother".
They go on to state that "the intrapsychic vicious
circle of the depressive may therefore be embedded in
an interpersonal vicious circle" (p.238). It would
seem that this may be an additional reason why
children of depressed mothers are at high risk for
developing depression themselves.

While not attempting to confirm that there is an
intergenerational learning of depressive
attributional style, this study will attempt to
confirm that depressive mothers do indeed extend
their depressive attributional style to their
children's behaviors. This is hypothesized to be a
significant factor in the depressives' more negative
perception of their children as well as their more
negative behavior toward their children. Additional
hypotheses are that children of depressives do have
more behavior problems (because of the interpersonal
difficulties inherent in depression), and that the
depressive mothers will be more accurate about their
children's symptoms than the comparison group of
mothers (because of the tendency of normal mothers to
use a self-enhancing bias for their children).

In conclusion, the present study will make the
following hypotheses:
1. Depressed mothers will have a more negative perception of their own children than the nondepressed mothers as measured by a more negative attitude toward their children, the feeling that their children have more behavioral problems, and a more negative expectation for their children (the belief that their children are more responsible for bad outcomes and less responsible for good outcomes).

2. Depressed mothers will exhibit a "depressive" attributional style as it relates to their children's behavior and the nondepressed mothers will exhibit a "self-serving" attributional style as it relates to their children's behavior. That is, the depressed mothers will perceive their children's negative behavior as being caused by more internal, stable and global factors than the non-depressed mothers, and their children's positive behavior as being caused by more external, unstable and specific factors than the non-depressed mothers. The pattern of the nondepressed mothers scores will be in the opposite direction.

3. The children of the depressed mothers will have more behavioral problems than the children of the nondepressed mothers and the depressed mothers' perceptions of their children's behavior will be more
consistent with the teachers' view of their children's behavior than the nondepressed mothers' perceptions.

4. The mother's attributional style will be a significant predictor of her perception of her child.
Method

Subjects

Subjects were mothers of preschool children (between the ages of 3 and 6). There were 54 subjects in all, 24 in a depressed group and 30 in a non-depressed group.

The first group of subjects was recruited from local suburban nursery schools. Letters were sent out to directors of nursery schools in a suburban area explaining the research and asking permission to recruit subjects for the current study from the mothers at the preschool (see Appendix A). If the director was interested, an appointment was made to discuss the research, and the procedures involved were explained to the director. Flyers that briefly explained the research were left with the director to be distributed to the mothers by the preschool teachers. The flyers described the research as having to do with "How Mothers Understand Their Children's Behavior" (see Appendix B). The mothers that volunteered were contacted by telephone and an appointment was made to conduct the research. Of the mothers contacted in this manner, all but two were in a non-depressed range on the Beck Depression Inventory (9 and below). Therefore it was decided
that mothers in the depressed range of functioning would have to be actively recruited.

Permission was received from the research committee at a large psychiatric hospital to specifically recruit clinically depressed mothers for the present study. All the outpatient therapists at the hospital were contacted individually. The therapists were asked if they had any patients that were depressed and had a child between the ages of 3 and 6 (see Appendix C). Thirty-five therapists were contacted and all replied that they did not have any patients who fit the criteria.

It was decided at that point to save time by advertising for subjects in a local suburban newspaper (see Appendix D). Ten appropriate subjects were recruited in this manner. Additionally, other subjects were recruited from a Families in Crisis program at a YWCA in a nearby suburb. (One of the mothers who had responded to the newspaper ad had referred the researcher to the YWCA program.) The director of the Families in Crisis program was quite interested in the research and was able to contact 16 subjects believed to be appropriate for the research. Of those contacted, 14 were in the depressed range of functioning, and 2 were in the non-depressed range.
All the subjects recruited through the newspaper ad and through the YWCA program were paid $15 for their participation.

The cutoff points for the Beck Depression Inventory that were used in the present study were 0–9 for the non-depressed group, and 10 and above for the depressed group. While other researchers have used widely varying cutoff scores for depressed and nondepressed groups (cf. Harvey, 1981; Rizley, 1978; Sackheim & Wegner, 1986; Martin, Abramson, & Alloy, 1984; Tabachnik, Crocker, & Alloy, 1983), the current study uses the cutoff points specified by Kovacs and Beck (1977) to delineate depth of depression (0–9 = no depression, 10–15 = mild depression, 16–23 = moderate depression, and 24 and above = severe depression). The two subject groups did not differ significantly with respect to age of child, or sex of child, however they did differ with respect to age of mother, marital status, and SES.

Measures

The instruments used were the Beck Depression Inventory to assess the level of depression of the mother, the Parent Attitude Test (PAT) to assess the mother's perception of her child's adjustment (Appendix E), and two forms of the Achenbach Child
Behavior Checklist (CBCL and TRF) to assess the mother's perception of her child's behavioral problems and the teacher's perception of the child's behavioral problems. A modified version of Larrance and Twentyman's (1983) method for assessing maternal attributions of child behavior was used: the MAT, a taped interview and a questionnaire (see Appendix F for questionnaire form). In addition, the Attribution Style Questionnaire (ASQ) which was devised by Peterson (1982) was used to determine the mother's attribution style for her own behavior.

The Beck Depression Inventory (Beck, 1967) consists of 21 sets of statements which refer to the central cognitive and behavioral symptoms usually associated with depression. In each set of statements, the subject receives either a 0, 1, or 2, depending on the severity of the depressive symptoms perceived by the subject. Extensive psychometric information has been collected for the BDI. Adequate internal consistency and test-retest reliability data has been gathered (Beck, Ward, Mendelson, Mack & Erbaugh, 1961; Golin & Hartz, 1979; Mayer, 1978). Further, evidence for content, criterion, and construct validities have been established (Bailey & Cooper, 1976; Beck et al., 1961; Bumbery, Oliver, &
McClure, 1978; Golin & Hartz, 1979; Langevin & Stancer, 1979; Mayer, 1978; Marsella, Sanborn, Kameoka, Shizuru & Brennan, 1975), as has its sensitivity to change (Johnson & Heather, 1974). As well as being well validated, the BDI is self-administered, and takes only a few minutes to complete, making it an ideal screening instrument.

The Parent Attitude Test (PAT) is a measure of parental perception of the child's attitudes and behaviors. It consists of four independent scales: the Behavior Rating Scale, the Home Attitudes Scale, the School Attitudes Scale, and the Adjective Check List. The development of the PAT, as well as the instrument's reliability and validity are discussed by Cowen, Huser, Beach, and Rappaport (1970). The instrument's reliability is adequate, with an overall internal consistency figure of .83 obtained by using Cronbach's alpha technique, and test-retest correlations ranging from .57 for the School Attitudes Scale to .72 for the Adjective Checklist. The instrument also has shown evidence of predictive and criterion validity. The scores on the Parent Scales were able to discriminate significantly and in the expected direction between groups rated by their teachers as adjusted and maladjusted. In addition,
the Parent scales are correlated significantly and moderately well with achievement scores and self-report and sociometric data (median correlations in the low .20s). Correlation of ratings of adjustment by teachers and clinicians with parent ratings were also in the expected direction and significant (highest correlation was .62 between perceived school attitudes and teacher's rating of maladjustment). The intercorrelations between the various subscales are significant and positive (ranging from .26 between the Behavior Ratings and School Attitudes to .68 between the Adjective Checklist and Home and School Attitudes). The moderate level of the intercorrelations, however, suggests that the individual scales are relatively independent measures of parental perception of adjustment. Overall, the Parent Attitude Test seems to be a reliable and valid measure of child adjustment.

Three of the four scales of the PAT were used in this study. The Home Attitudes Scale and the School Attitudes Scale consist of 7 and 5 items, respectively. (These two scores were added to give one comprehensive score called Characteristic Attitudes and Behaviors.) Each item is rated by the parent on a 5-point scale. An example of one item
is, "When your child talks about school it seems as if he. . .", with the response options ranging from "likes it very much" to "dislikes it very much". The Adjective Checklist was also used. This questionnaire consists of 34 adjectives, 17 prejudged to be negative, and 17 prejudged to be positive. Each adjective was scored by the parent on a 3 point scale ranging from "does not show at all", to "shows very strongly". Each of the adjectives describes a personality characteristic or attribute of children, such as "helpful" or "shy". The scales are designed so that a higher score indicates parental perception of greater difficulty with adjustment (Home and School Attitudes scale) and more negative perception of the child's personality (Adjective Checklist).

The Child Behavior Checklist (Achenbach, 1980) was used to assess child behavioral problems and symptoms. The CBCL consists of an inventory of 113 child behavior problems. Each problem is rated by the responder as "not true", "sometimes true", or "very true" about that child. Two forms of the behavior problem checklist were used: the Parent Form and the Teacher's Report Form. Other scores which are included on the checklist and were used in this research are the Social Competence Scale.
(compromised of the Activities score and the Socializing score) and the Internalizing and Externalizing Scores.

The Achenbach Child Behavior Checklist (CBCL) is a standardized assessment tool which is reported to have significant reliability and validity (Achenbach & Edelbrock, 1983). For total problem and competence scores, the median Pearson correlation for 1-week test-retest reliability of mothers' ratings was .89. In terms of content validity, the authors found that 116 of the 118 behavior problems, and all 20 of the social competence items were significantly associated with clinical status, as established independently of the CBCL. Additionally, significant correlations (ranging from .71 to .92) were found between the CBCL total behavior problem score and other behavior rating scales and empirically derived syndromes. This provides evidence of construct validity. Using referral for mental health services as a criterion, the authors present evidence for criterion-related validity in terms of significant differences (p<.001) between demographically matched referred and non-referred children on all Profile scores for all sex/age groups.

One of the other scores from the CBCL which was
used was the Social Competence Scale, which includes parents' reports of the child's participation and performance in areas designated as Activities and Social. Unlike the behavior problem scales, low scores on the Social Competence Scales are clinically significant. The scales called Internalizing and Externalizing were derived by performing second-order factor analyses of the behavior problem scales. It was found that the scales formed two broad-band groupings in all sex/age groups. The broad-band groupings correspond to the distinction between fearful, inhibited, over-controlled behavior (Internalizing) and aggressive, antisocial, undercontrolled behavior (Externalizing).

The Teacher Report Form (TRF) of the CBCL was designed to obtain teachers' reports of their pupils' problems and adaptive functioning in a standardized format. The authors (Achenbach & Edelbrock, 1986) feel that the teachers' reports are as important as the parents' reports. Compared to the Parent Form of the CBCL, the TRF has 24 items which have been replaced with behaviors that teachers would be better able to report (such as makes odd noises in class; or fails to finish things he/she starts). Nine items are similar to those of the CBCL, except for slight
changes of wording to make them more appropriate for the school environment. The remaining 85 items, plus 2 open-ended items, are identical on the two forms. Teachers also rate pupils on four general adaptive characteristics which are scored and added together to get an Adaptive Functioning score. In addition, there are Internalizing and Externalizing scores which are derived in a similar way to the Internalizing and Externalizing scores on the Parent Form of the CBCL, and have a similar meaning.

The authors also provide evidence of adequate reliability and validity for the TRF. Test-retest reliability over a 1 week period is excellent. The median Pearson correlation was .90, with negligible change in mean scale scores. The content validity of the TRF was evaluated in terms of whether its items were related to concerns about pupils' need for special help for behavioral and social/emotional problems. The authors found that all but one problem item and all adaptive functioning items were significantly associated (p<.005) with referral status, as established independently of the TRF. In terms of construct validity, correlations between the TRF and corresponding scales of the Conners Revised Teacher Rating Scale were found to range from .62 to
.90. The authors used referral for professional help with behavioral and social/emotional problems as a criterion, and presented evidence for criterion-related validity for the TRF. Significant differences (p<.001) were found between demographically similar referred and nonreferred pupils on all TRF scales for all sex/age groups.

Another measure which was used with the subjects is the Attributional Style Questionnaire (Appendix G) developed by Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, (1982). This scale (the ASQ) was used to assess the attributional style of the subjects for their own behavior. The authors (Peterson et al., 1982) state that their scale is satisfactory in terms of the internal consistency and stability of its composite scores. Using Cronbach's alpha technique, the internal reliability of the composite attributional style scales was estimated. The alpha coefficients of .75 and .72 were obtained for good events and bad events, respectively. Moreover, the attributional style composite scores are unrelated to each other, having a correlation of .02 in the sample studied. The five week test-retest correlations of the attributional composite scores are .70 for good events, and .64 for bad events,
indicating that the ASQ has respectable stability, and does indeed measure a "style". In addition, the authors and others (Alloy, et al., 1984; Golin, Sweeney, & Shaeffer, 1981) give evidence for construct, criterion, and content validity. This scale consists of 12 hypothetical situations, 6 positive and 6 negative, which the subject is instructed to imagine having happened to her. For each situation, she is asked to write the most important cause for that outcome, and to rate the cause on scales (1 to 7) measuring internality, stability, and globality. An example of a positive situation is "Your boyfriend/husband is treating you more lovingly". An example of a negative situation is "Your friend comes to you for help and you tell her you can't help her". The scale is scored by finding the mean of the sum of the three scores for all the positive and negative situations. This yields a Composite Positive (CP) and Composite Negative (CN) score. For each subject, in addition, their Composite Negative score is subtracted from their Composite Positive score, yielding a CPCN score, which gives information about that subject's attributional style.

The final instrument used was a modified version
of the technique used by Larrance and Twentyman (1983) to assess maternal attribution. In their study, significant group differences were found between abusing, neglecting and comparison mothers both in terms of expectation for behavior and causal attribution of behavior, indicating that the measure has construct validity.

In the present study, both an interview method and a questionnaire were used with the first groups of subjects (from suburban nursery schools), while only the questionnaire was used with the second group of subjects. It was decided that it would be more efficient to solely use the questionnaire for the second group of subjects, because of time and financial constraints. The first group of interview tapes were scored and correlated with the first group of questionnaires, and the Pearson correlations between the two methods for Composite Negative and Composite Positive and the Maternal Expectation score are presented in Table 1. In addition, t-tests were performed on the group means for each of these scores on the interview method and the questionnaire method. No significant differences were found between the two methods on the three scores compared (PO, NO, and MAT Expectation score). The correlations between the two
Table 1
A Comparison of the Taped Interview and the MAT Questionnaire for the Non-depressed Mothers (n=24)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Interview</th>
<th>Questionnaire</th>
<th>t</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT Expectation</td>
<td>4.5 (.65)</td>
<td>4.4 (.96)</td>
<td>-1.6</td>
<td>.63**</td>
</tr>
<tr>
<td>MAT PO</td>
<td>3.0 (.68)</td>
<td>3.1 (1.1)</td>
<td>-.04</td>
<td>.15</td>
</tr>
<tr>
<td>MAT NO</td>
<td>5.1 (1.1)</td>
<td>5.2 (1.1)</td>
<td>1.0</td>
<td>.40*</td>
</tr>
</tbody>
</table>

* p<.05. **p<.01.
methods were significant for two of the three scores (NO and Expectation score). Because there was no difference between the two methods for the three composite scores, and the correlations between two of the scores were significant, it was decided that the two methods were measuring the same construct and the interview method was eliminated for the second group of subjects.

The Interview Method of the MAT

The interview form of the MAT used a picture album containing pictures of two children (the mother's child, and an unknown child of the same sex and age) in six ambiguous play situations. Some of the situations had positive outcomes and some had negative outcomes. In the interview method, the mothers went through the album twice with the researcher. The first time through, the mother's task was to describe to the interviewer 1) what she thought happened in each ambiguous sequence of pictures (who did what). And the second time through the album, for each situation, the mother was told which child hypothetically caused the outcome (positive or negative). Her task was to tell the researcher why the child behaved that way (cause) and also whether that cause was internal or external to
the child (internality), whether the cause was always present (stability), and whether that cause would affect other areas of the child's life (globality). Each of these interviews was taped for scoring at a later date.

**The Questionnaire Method of the MAT**

The questionnaire method of the MAT is in two parts, corresponding to the two parts of the interview method of the MAT. They are presented together and are both filled out by the mother when presented. The first part of the questionnaire consists of six written descriptions of the ambiguous situations seen in the album, with a rating scale for expectation after each description (see Appendix F). The mother reads the description of the ambiguous play situation (three situations have positive outcomes and three have negative outcomes) and then rates whether she feels her child caused the outcome, the other child caused the outcome, or whether she isn't sure who caused it. She rates this expectation on a Likert-type scale ranging from 1 to 9, with 1 being the most positive expectation, and 9 being the most negative expectation.

The second part of the MAT questionnaire consists of six play situations which have been
hypothetically caused by either the mother's child or the unknown child of the same age and sex as the subject's child. Three of the play situations have a negative outcome (scribbling on a wall, taking a toy, and not finishing a puzzle), two have a positive outcome (sharing a toy, not breaking a toy) and one has an outcome caused by chance (winning at Candyland). The mother reads the situation, in which she is informed that her child either behaved positively or negatively, or succeeded at a game (chance situation). She then responds in writing by telling why her child behaved in that manner (cause), and by answering three questions about the cause. Each answer is scored on a Likert-type scale from 1 to 9. The first question concerns whether the mother feels the cause of her child's behavior was internal (1) or external (9) or somewhere in between. The second question concerns the stability of the cause (1=most stable, 9=least stable), and the third question concerns the globality of the cause (1=most global, 9=most specific).

The ratings of the first part of the MAT produced a mean expectation score (1-9) for each mother. Ratings for the second part of the MAT resulted in several scores. Each mother received a
score for internality of positive outcomes (PI) which is the mean interality score for the positive situations, a score for internality of negative outcomes (NI), which is the mean of the internality scores for negative outcomes, and a score for internality of chance outcomes (CI). In a similar manner, mothers also received scores for stability of positive, negative, and chance outcomes (PS, NS, and CS), and scores for globality of positive, negative, and chance outcomes (PG, NG, and CG). Additionally, each mother received a composite score for positive, negative, and chance outcomes (PO, NO, and CO). These scores were computed by adding all the ratings (internality, stability, and globality) for positive, negative, and chance events, and dividing by the number of ratings. The lower the composite score for negative events, and the higher the for positive events, the more a mother would tend to have a "depressive attributional style" for her child's behavior. Conversely, a mother with a relatively higher composite score for negative events and lower composite score for positive events would be seen as having a "self-serving" attributional style for their child's behavior. This is the attributional style which Larrance and Twentyman (1983) found in their
control group of non-abusing mothers. The rating scales and introduction of the MAT are modelled after the Attributional Style Questionnaire (ASQ) developed by Peterson et al. (1982). The rating scale endpoints for the dimensions of internality, stability and globality use the same phrases as the ASQ with the exception of changing the word "you" to "your child". The situations which are rated in the present study are not the ones used by Peterson et al. (1982) which are appropriate only for adults, but instead, are the written descriptions of the series of photographs shown to the mother previously in the MAT interview.

Larrance and Twentyman (1983) discuss several reasons for using an independent manipulation (the photo album) to assess parental bias instead of comparing ratings by independent observers with parental ratings of children's behavior in a testing situation. These reasons are pertinent to the present study as well, and would also apply to the MAT questionnaire. Namely, the independent manipulation gives the experimenter more control of the success/failure activities of the child than a testing situation would. In addition, training parents to achieve significant reliability in coding
their child's behavior would make any group
differences difficult to interpret in an
observational study.

Procedure

Initial contact and recruitment of the first
group of subjects.

Directors of local nursery schools were
contacted by telephone and then by mail in order to
briefly explain the research proposal and to seek
their permission to recruit subjects from their
schools. Directors who were agreeable were asked to
send out a notice to the mothers of their pupils
explaining the research, giving her permission for
the mothers to participate if they are interested,
and also telling them that the study is in no way
connected with the nursery school and that non-
participation would not be penalized. The mothers
were told that the research was about "How mothers
understand their children's behavior".

The mothers that were interested returned the
form to the nursery school teacher, and the forms
were gathered by the researcher. Mothers who
returned the forms were contacted by telephone and
also sent a consent form which detailed the
procedures involved in the research (Appendix H).
Specifically, they gave their permission to have their children photographed in a series of pre-arranged play situations, and to have the child's teacher fill out a questionnaire about their child's behavior. All the mothers who initially returned forms agreed to these procedures.

The researcher then got permission from the nursery school directors (who had previously agreed to the recruitment of volunteers) to come to the nursery school to photograph all those children whose mothers had agreed to be subjects. By photographing the children before the interview, the data collection process was more efficient, and the photo album was ready before the interview began.

Photographing of the child for the stimulus pictures.

All of the children of the subjects at one nursery school were photographed at one time. Seven photographs were taken of each child, in prearranged poses (one situation calls for two poses for the subject's child). In each case, the poses were identical to another unknown child. The photos were then placed in an envelope with the subject's code number on it and saved for the interview.
The album that was presented at the time of the interview consisted of six pages of stimulus photos. Each page represented a different ambiguous situation. Each situation had a series of three photos: one of the subject's child, one of the model child, and an outcome photo. The order of presentation varied with each interview. The situations were as follows:

I. Ambiguous interpersonal interaction (can be interpreted as taking a toy or giving a toy)
   1. Child #1 with a toy (doll for girls, truck for boys)
      Child #2 with toy
      Child #1 without toy
   2. Child #2 with a toy (doll for girls, truck for boys)
      Child #1 with same toy
      Child #2 without toy

II. Ambiguous destructive outcome
   1. Child #1 with crayons and paper
      Child #2 with crayons and paper
      Wall with crayon marks
   2. Child #2 with a toy (wind-up toy for girls, truck for boys)
      Child #1 with same toy
Toy broken on the floor

III. Ambiguous successful outcome

1. Child # 1 with a game of chance
   Child # 2 playing the same game
   Game board showing someone has won

2. Child # 2 with a puzzle
   Child # 1 with same puzzle
   Puzzle shown completed

In each situation, the children's faces were not shown in order that the facial expression would not be used for interpretation of the situation. The other child was always the same for each subject and was the same sex as the mother's child.

Collection of data.

After the child had been photographed, the mother was contacted by telephone and an interview appointment was made. Prior to collecting the maternal attribution data, the subject was given a standard introduction and asked to fill out a "stress inventory" (BDI). It was explained that raising preschoolers is a very stressful task, and the researcher wanted to assess the level of stress that the mother was experiencing.

The researcher then explained that she was interested in finding out about how mothers
understand their children's behavior, and specifically, what kind of predictions and explanations they give about their children's behavior. Furthermore, the mothers were told that all the situations were fictitious, and that the play situations that they would be looking at did not really happen.

The first part of the interview was the presentation of the stimulus pictures for the mother's predictions of her child's behavior. For example, when presented with the first series of photographs, the ambiguous interpersonal interaction, she was told that an interaction had occurred between the two children. The interviewer pointed to each of the photos and said, "See, here is your child, and here is another child who is your child's age. What happened?" She was asked to tell the interviewer what she thought might have happened based on how she knows her child. This technique was used for the remaining five situations as well. As mentioned previously, all of the subject's answers were audiotaped for scoring at a later time.

The album was then presented a second time; this time with prearranged negative or positive outcomes assigned to each situation. Each subject's child was
assigned three positive outcomes and three negative outcomes. For example, in situation #4, the mother was told that the other child admitted breaking the toy, therefore her child did not break the toy (positive outcome). The mother was asked to give the main reason for her child's behavior, based on how she knew her child. In the successful outcome situations, an outcome based on chance was included in order to determine if the mother had a "self-enhancing" bias for her attribution for her child's behavior.

Then, three additional prompting questions were asked after the cause was given by the subject. They were:

1. Was the cause due to something in your child (internal), or was it due to something in the environment (external)?

2. In a similar situation, would the cause of this behavior again be present? (Stability)

3. Does this cause influence other areas of your child's life (globality)?

After the interview method of the MAT, the subject was presented with the MAT questionnaire (See Measures section for a description). The mother read the introduction, and then the interviewer explained
the meaning of each end of the scale to the mother. This was done at the beginning of Part I and Part II of the questionnaire, and thereafter as often as needed. The mother circled the number which was closest to where she felt the answer belonged. Part I asked the subjects for their expectations for their child's behavior, and Part II asked the subjects to tell the reasons for their child's behavior and to answer questions about the cause. Part II consisted of the written descriptions of the six situations that she had been shown in the photo album. The outcomes were identical to those in the interview, three being positive and three being negative. For each situation, the subject gave one major cause of her child's behavior, and rated her explanation for her child's behavior, both on an internal-external scale, on a stability-instability scale, and on a global-specific scale. Scales ranged from 1 to 9. Before part II of the questionnaire was filled out, the meanings of the scales were clarified. The definition for an internal rating stressed that the behavior was caused by the person (skill or effort), whereas an external rating meant that the behavior was caused by properties of the environment (e.g. task difficulty or luck), or another person (i.e. most
internal; 9 = most external). Stable ratings represented causes of behavior which were consistent across time and situation, whereas ratings of instability emphasized causes of behaviors that were likely to change over time and across situations (1 = most stable, 9 = most unstable). Finally, ratings of globality emphasized causes of behaviors that affected other parts of the child's life, whereas ratings of specificity emphasized causes of behavior which were specific only to that situation (1 = most global; 9 = most specific). Location of the endpoint descriptions were alternated with each situation in order to avoid a position effect. At the end of the interview, the mothers were again reminded that all the situations were fictional, and that they did not really occur.

At the conclusion of Part II of the MAT questionnaire, the subjects were given the PAT and the Parent Form of the CBCL to complete. If there was not enough time, they were given a stamped envelope to return the completed forms to the researcher. They were reminded that their child's teacher would be asked to fill out the Teacher Report Form of the CBCL, and were shown a copy of this form to examine. The subjects were then thanked for their interest and
their time.

**Collection of data for second group of subjects.**

As previously mentioned in the Subjects section, only two subjects in the first group of volunteers scored in the depressed range on the BDI. Depressed subjects were recruited through a newspaper advertisement and through a YWCA Families in Crisis Program. The subjects recruited through the newspaper therefore felt that they were depressed, and they were given a BDI as a screening instrument. Of the subjects recruited in this manner, two potential subjects were rejected because they did not score above 9 on the BDI. Those that did meet the criteria were paid $15 for their participation after they filled out the forms. They signed a consent form (Appendix H) and were given the same instructions and explanations about the research as the first group of subjects received. The issue of depression was not emphasized, and instead, the understanding of their children's behavior was given as the main focus of the research. These subjects filled out the MAT questionnaire, the PAT, the Parent Form of the CBCL, and the ASQ. The researcher remained present to answer any questions they might have.
The subjects that were recruited from the YWCA met with the researcher in small groups. They were told that the researcher was interested in how mothers understand their children's behavior, and that as part of the research they would be filling out a "stress inventory" (the BDI). Of the 16 subjects recruited in this manner, 14 scored above 9 on the BDI. All were paid for their participation, however, because the director of the program had specifically asked them to come to take part in a research study. Those two subjects who scored below a 9 on the BDI were used in the Non-Depressed sample. All of the subjects recruited in this manner filled out the Consent Form, the MAT questionnaire, the PAT, the Parent Form of the CBCL, and the ASQ, as well as the BDI.
Results

Demographic Variables

The demographic variables of the two subject groups (depressed and nondepressed) were analyzed for differences between the two groups. Table 1 presents the findings. Differences were found between the two groups on the variables of age ($t_{52} = 2.84, p < .01$) socioeconomic status ($t_{47} = 3.19, p < .01$), and marital status (Fisher's Exact Test, $p = .007$).

The difference in mother's age between the two groups (depressed $M = 30.5$, nondepressed $M = 34.6$) was statistically significant. The difference in SES between the two groups, is also statistically significant, and an analysis of covariance (ANCOVA) was used to control for the pre-existing differences in age and SES between the two groups in the next set of analyses (Cook & Campbell, 1979).

Comparison of Groups of Mothers

Table 3 shows the mean scores, standard deviations and range of scores on the data collected from the two groups of mothers of preschoolers (depressed and nondepressed). Mean scores and standard deviations for standardization groups and comparison groups are presented in Table 4. The clinically important scores were analyzed for differences using an analysis of covariance (ANCOVA)
Table 2

Demographic Variables for Depressed \((n=24)\) and Nondepressed \((n=30)\) Groups of Mothers

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Depressed (M (SD))</th>
<th>Non-Depressed (M (SD))</th>
<th>(t)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother's age</td>
<td>30.5 (5.6)</td>
<td>34.5 (4.9)</td>
<td>2.84</td>
<td>.007</td>
</tr>
<tr>
<td>SES</td>
<td>43.1 (18.3)</td>
<td>57.3 (12.6)</td>
<td>3.19</td>
<td>.003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Frequency</th>
<th>Chi-square</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex of Child</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>23</td>
<td>.37</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Mother's Employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not employed</td>
<td>16</td>
<td>23</td>
<td>.65</td>
</tr>
<tr>
<td>Employed</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>22</td>
<td>28</td>
<td>*</td>
</tr>
<tr>
<td>Minority</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Note. SES figures are based on Hollingshead's (1975) four factor index of social status.

* A Fisher's Exact Test was used for this analysis, as a Chi-square analysis would have been inappropriate.
### Table 2 (continued)

**Demographic Variables for Depressed and Nondepressed Groups of Mothers**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Depressed (n = 24)</th>
<th>Nondepressed (n = 30)</th>
<th># of subjects</th>
<th>Chi-square</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married (or cohabiting)</td>
<td>15</td>
<td>28</td>
<td></td>
<td></td>
<td>.007</td>
</tr>
<tr>
<td>Single, Separated, or</td>
<td>9</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Child Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>10</td>
<td>8</td>
<td>1.7</td>
<td>.43</td>
<td></td>
</tr>
<tr>
<td>Four</td>
<td>6</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Five &amp; Six</td>
<td>7</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number of Children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>4</td>
<td>5</td>
<td>3.7</td>
<td>.055</td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>6</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three or More</td>
<td>13</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* A Fisher's Exact Test was used for this analysis, as a Chi-square would have been inappropriate.
Table 3

**Group Means, Standard Deviations, and Range of Scores for Depressed and Nondepressed Groups**

<table>
<thead>
<tr>
<th>Test</th>
<th>Depressed</th>
<th>Non-depressed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>N</td>
</tr>
<tr>
<td>BDI</td>
<td>21.7 (8.6)</td>
<td>24</td>
</tr>
<tr>
<td>Range</td>
<td>10 - 48</td>
<td></td>
</tr>
<tr>
<td>Parent Attitude Test (PAT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACL</td>
<td>26.3 (7.2)</td>
<td>21</td>
</tr>
<tr>
<td>Range</td>
<td>10 - 43</td>
<td></td>
</tr>
<tr>
<td>CAB</td>
<td>15.0 (7.2)</td>
<td>24</td>
</tr>
<tr>
<td>Range</td>
<td>4 - 34</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>41.9 (13.7)</td>
<td>21</td>
</tr>
<tr>
<td>Range</td>
<td>14 - 77</td>
<td></td>
</tr>
<tr>
<td>Child Behavior Checklist (CBCL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total B.P.</td>
<td>44.3 (25.5)</td>
<td>22</td>
</tr>
<tr>
<td>Range</td>
<td>11 - 112</td>
<td></td>
</tr>
<tr>
<td>Internal.</td>
<td>17.6 (10.9)</td>
<td>22</td>
</tr>
<tr>
<td>Range</td>
<td>1 - 47</td>
<td></td>
</tr>
<tr>
<td>External.</td>
<td>19.2 (12.5)</td>
<td>22</td>
</tr>
<tr>
<td>Range</td>
<td>1 - 49</td>
<td></td>
</tr>
<tr>
<td>Activities</td>
<td>5.7 (1.9)</td>
<td>22</td>
</tr>
<tr>
<td>Range</td>
<td>2 - 8.8</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>4.7 (1.9)</td>
<td>22</td>
</tr>
<tr>
<td>Range</td>
<td>.2 - 7.6</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 (Continued)

**Group Means, Standard Deviations, and Range of Scores for Depressed and Nondepressed Groups**

<table>
<thead>
<tr>
<th>Test</th>
<th>Depressed</th>
<th>Nondepressed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>n</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Teacher Report Form</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total B. P.</td>
<td>11.5 (10.7)</td>
<td>19</td>
<td>16.4 (11.8)</td>
</tr>
<tr>
<td>Range</td>
<td>0 - 32</td>
<td></td>
<td>0 - 37</td>
</tr>
<tr>
<td>Internalizing</td>
<td>4.3 (5.3)</td>
<td>18</td>
<td>4.5 (4.6)</td>
</tr>
<tr>
<td>Range</td>
<td>0 - 18</td>
<td></td>
<td>0 - 15</td>
</tr>
<tr>
<td>Externalizing</td>
<td>6.2 (7.3)</td>
<td>18</td>
<td>10.7 (8.5)</td>
</tr>
<tr>
<td>Range</td>
<td>0 - 27</td>
<td></td>
<td>0 - 28</td>
</tr>
<tr>
<td>Adaptive Functioning</td>
<td>14.8 (3.7)</td>
<td>17</td>
<td>18 (3.7)</td>
</tr>
<tr>
<td>Range</td>
<td>9 - 23</td>
<td></td>
<td>11 - 24</td>
</tr>
</tbody>
</table>
Table 4

Summary of Standardization Scores and Comparison Scores

<table>
<thead>
<tr>
<th>Beck Depression Inventory</th>
<th>B.D.I. Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinician rating</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Non-depressed</td>
<td>10.7 (8.1)</td>
</tr>
<tr>
<td>Mild</td>
<td>18.7 (10.2)</td>
</tr>
<tr>
<td>Moderate</td>
<td>25.4 (9.6)</td>
</tr>
<tr>
<td>Severe</td>
<td>30.0 (10.4)</td>
</tr>
</tbody>
</table>

Parental Attitude Test

<table>
<thead>
<tr>
<th></th>
<th>Lower 1/3**</th>
<th>Upper 2/3***</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Parent Scores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.A.B.</td>
<td>15.0 (7.2)</td>
<td>9.3 (4.5)</td>
</tr>
<tr>
<td>A.C.L.</td>
<td>26.3 (7.2)</td>
<td>17.4 (6.6)</td>
</tr>
</tbody>
</table>

* Clinicians' ratings of psychiatric patients, Beck, 1967.

** Scores of parents of students in lower 1/3 of class in terms of adjustment, Cowen, 1970, total N of all responders =395.

*** Scores of parents of students in upper 2/3 of class in terms of adjustment; Cowen, 1970.
Table 4 (continued)

**Summary of Standardization Scores and Comparison Scores**

<table>
<thead>
<tr>
<th></th>
<th>Clinic *</th>
<th>Non-clinic**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
</tbody>
</table>

**Child Behavior Checklist**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Beh. Problems</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (4-5)</td>
<td>59.8 (30.1)</td>
<td>24.1 (14.2)</td>
</tr>
<tr>
<td>Girls (4-5)</td>
<td>58.8 (29.1)</td>
<td>25.2 (17.1)</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internalizing Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (4-5)</td>
<td>25.1 (15.6)</td>
<td>9.7 (6.8)</td>
</tr>
<tr>
<td>Girls (4-5)</td>
<td>28.7 (14.9)</td>
<td>10.8 (9.3)</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Externalizing Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (4-5)</td>
<td>29.7 (15.6)</td>
<td>11.3 (7.8)</td>
</tr>
<tr>
<td>Girls (4-5)</td>
<td>21.2 (13.6)</td>
<td>8.4 (6.6)</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activities Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (4-5)</td>
<td>5.0 (2.9)</td>
<td>6.6 (2.1)</td>
</tr>
<tr>
<td>Girls (4-5)</td>
<td>5.9 (2.6)</td>
<td>7.2 (1.9)</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (4-5)</td>
<td>4.2 (2.1)</td>
<td>6.3 (1.3)</td>
</tr>
<tr>
<td>Girls (4-5)</td>
<td>4.2 (2.0)</td>
<td>7.2 (1.6)</td>
</tr>
</tbody>
</table>

* Mean scores for clinic referred sample of all SES levels, N= 100; Achenbach & Edelbrock, 1983. ** Mean scores for nonclinic sample of all SES levels, N= 100; Achenbach & Edelbrock, 1983.
Table 4 (continued)

**Summary of Standardization Scores and Comparison Scores**

<table>
<thead>
<tr>
<th></th>
<th>Clinic* M (SD)</th>
<th>Non-clinic* M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teacher Report Form</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Beh. Problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (6-11)</td>
<td>65.8 (31.9)</td>
<td>22.3 (22.9)</td>
</tr>
<tr>
<td>Girls (6-11)</td>
<td>47.2 (32.6)</td>
<td>15.1 (16.2)</td>
</tr>
<tr>
<td>Internalizing Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (6-11)</td>
<td>11.3 (7.8)</td>
<td>4.1 (5.0)</td>
</tr>
<tr>
<td>Girls (6-11)</td>
<td>10.7 (8.1)</td>
<td>4.7 (5.1)</td>
</tr>
<tr>
<td>Externalizing Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (6-11)</td>
<td>49.1 (23.1)</td>
<td>16.7 (17.0)</td>
</tr>
<tr>
<td>Girls (6-11)</td>
<td>30.6 (23.4)</td>
<td>8.8 (11.9)</td>
</tr>
<tr>
<td>Adaptive Functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys (6-11)</td>
<td>10.6 (4.4)</td>
<td>17.3 (4.6)</td>
</tr>
<tr>
<td>Girls (6-11)</td>
<td>13.2 (5.1)</td>
<td>18.9 (4.6)</td>
</tr>
</tbody>
</table>

* Clinic referred sample of all SES levels, N= 300; Achenbach & Edelbrock, 1986.

** Non clinic sample of all SES levels, N= 300; Achenbach & Edelbrock, 1986.
with SES and mother's age as the covariates.

**Depressed vs. Nondepressed Mothers' Perceptions**

In order to address Hypothesis 1, which states that the depressed group of mothers will have a more negative perception of their children than the nondepressed group of mothers, the following scores were compared: total score for Parental Attitude Test (PAT), sum of behavior problems on the CBCL (CBCL BP), and the Expectation score on the Maternal Attribution Test (MAT). These scores were chosen to represent the mother's perception of her child for the following reasons. The total score of the Parental Attitude test (PAT) correlated very highly with the two subtests, the Characteristic Attitudes and Behaviors Test (CAB) and the Adjective Checklist (ACL), and represents the mother's beliefs about how her child is functioning at home and at school, and how she describes his/her personality. The CBCL Behavior Problem Score represents the mother's perception of her child's behavioral problems. The Maternal Attribution Test Expectation score represents the mother's perception of how she feels child would behave in social situation, playing with other children. These scores will be referred to as the Perception Scores on Tables 5, 6, and 7.
In comparing the two groups of mothers by depression levels, and using mother's age and SES as covariates, the results are mixed. There is a group difference on the PAT score, F(1,39) = 8.5, p<.01, and there is an almost significant difference on the CBCL Behavior Problem score, F(1,42) = 3.3, p = .08, but there is no group difference on the MAT Expectation score, F(1,40) = 2.7, p = ns (see Table 3 for means and standard deviations). On the PAT, the results were not significantly affected due to SES, F(1,39) = 2.3, p = ns; however, SES has an almost significant effect on the CBCL behavior problem score, F(1,42) = 3.5, p = .07, and a close to significant effect on the MAT Expectation score, F(1,40) = 3.8, p = .06. The covariate of mother's age did not have a significant effect on any of the perception scores.

In order to investigate whether the age of the child was a factor in the mothers' perceptions of their children, a one-way analysis of variance was performed on the three scores being studied. Table 5 shows the means and standard deviations of three groups for the three tests. The scores of the subjects were divided into three groups based on the age of the child: three year olds, four year olds, and five and six year olds. There were no
significant differences between the three child age groups on the mean scores of mother's age or SES. Therefore, analyses were performed without using age or SES as covariates. Table 5 presents the means and standard deviations of those scores. On the PAT test, there was no significant difference between age groups, \( F(2,46)= .02, \ p=.98. \) Additionally, there was no difference between groups on the CBCL Behavior Problems score \( F(2,48)= .0007, \ p=.99. \) On the MAT Expectations score, however, there was a significant difference between the age groups, \( F(2,47)= 3.33, \ p<.05. \) A Scheffe test revealed that the mothers of the four year olds had significantly more positive expectations of their children than the mothers of the three year olds, but not significantly different from mothers of the five year olds.

In order to determine whether the sex of the child was a factor in the mother's perception of her child, the perception scores (PAT Total, CBCL Behavior Problems and MAT Expectation) were analyzed by sex of child with SES as a covariate, and by sex of child and depression level of mother with SES as a covariate. The results (see Table 6) indicate that for all three scores, SES was a significant source of variation, while sex of child was not. (For the PAT
Table 5
A Comparison of Maternal Perception Scores by Age of Child

<table>
<thead>
<tr>
<th>Score</th>
<th>Mothers of Three Year Olds</th>
<th>Mothers of Four Year Olds</th>
<th>Mothers of Five/Six Year Olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAT Total</td>
<td>32.9 (12.7)</td>
<td>33.2 (13.3)</td>
<td>32.2 (16.3)</td>
</tr>
<tr>
<td>n =17</td>
<td>n =16</td>
<td>n =16</td>
<td></td>
</tr>
<tr>
<td>CBCL B.P.</td>
<td>33.6 (18.1)</td>
<td>33.8 (17.5)</td>
<td>33.5 (26.7)</td>
</tr>
<tr>
<td>n =16</td>
<td>n =17</td>
<td>n =18</td>
<td></td>
</tr>
<tr>
<td>Expectation Score</td>
<td>4.9 (.69)*</td>
<td>4.2 (.95)*</td>
<td>4.6 (.86)</td>
</tr>
<tr>
<td>n =18</td>
<td>n =16</td>
<td>n =16</td>
<td></td>
</tr>
</tbody>
</table>

* These scores differ from each other at the .05 level of significance.
Table 6

A Comparison of Maternal Perception Scores by Sex of Child with SES as a Covariate

<table>
<thead>
<tr>
<th>Test</th>
<th>Boys M</th>
<th>Boys n</th>
<th>Girls M</th>
<th>Girls n</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAT Total</td>
<td>33.9</td>
<td>32</td>
<td>28.5</td>
<td>12</td>
<td>.52</td>
<td>ns</td>
</tr>
<tr>
<td>CBCL B.P.</td>
<td>34.4</td>
<td>34</td>
<td>30.7</td>
<td>13</td>
<td>.02</td>
<td>ns</td>
</tr>
<tr>
<td>Expectation  Score</td>
<td>4.7</td>
<td>31</td>
<td>4.4</td>
<td>14</td>
<td>.80</td>
<td>ns</td>
</tr>
</tbody>
</table>
Total score, the covariate of SES produced an \( F(1,41) = 6.6, p = .01 \); for the CBCL Behavior Problems, SES produced an \( F(1,44) = 6.5, p = .01 \); and for the MAT Expectation score, the covariate of SES produced an \( F(1,42) = 4.6, p = .04 \). For the PAT Total score by sex of child, \( F(1,41) = .52, p = \text{ns} \); for the CBCL Behavior Problems score, the difference between sexes produced an \( F(1,44) = .02, p = \text{ns} \); and for the MAT Expectation score, the difference between sexes was \( F(1,42) = .8, p = \text{ns} \).

The literature (Weissman, 1972) suggested that depressed mothers are particularly sensitive to excessive noise and activity, and therefore the possibility existed that depressed mothers might perceive their boy children differently than their girl children. To test this hypothesis, a two-way (group by sex of child) ANCOVA was performed on the data, with SES as a covariate. The results are presented in Table 7. SES was a significant source of variance for each of the data analyses (for PAT \( F[1,39] = 8.0, p = .007 \); for CBCL, \( F[1,42] = 7.0, p = .01 \); and for MAT Expectation \( F[1,40] = 5.0, p = .03 \)). The group effect of depression was significant for the PAT Total score, \( F(1,39) = 10.9, p = .002 \); and the CBCL Behavior Problems score, \( F(1,42) = 3.9, p = .05 \); and
Table 7
A Two-Way Comparison of Maternal Perception Scores by Group and Sex of Child with SES as a Covariate

<table>
<thead>
<tr>
<th>Group</th>
<th>Boy</th>
<th>Girl</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>n</td>
</tr>
<tr>
<td>Depressed</td>
<td>44.0</td>
<td>11</td>
</tr>
<tr>
<td>Nondepressed</td>
<td>28.7</td>
<td>21</td>
</tr>
</tbody>
</table>

CBCL B.P. Score

<table>
<thead>
<tr>
<th>Group</th>
<th>Boy</th>
<th>Girl</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>n</td>
</tr>
<tr>
<td>Depressed</td>
<td>48.6</td>
<td>12</td>
</tr>
<tr>
<td>Nondepressed</td>
<td>26.6</td>
<td>22</td>
</tr>
</tbody>
</table>

MAT Expectation Score

<table>
<thead>
<tr>
<th>Group</th>
<th>Boy</th>
<th>Girl</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>n</td>
</tr>
<tr>
<td>Depressed</td>
<td>5.0</td>
<td>11</td>
</tr>
<tr>
<td>Nondepressed</td>
<td>4.5</td>
<td>20</td>
</tr>
</tbody>
</table>
approached significance for the MAT Expectation score, F(1,40)=3.6, p=.06. The main effect of sex of the child was not significant for any of the scores, and there were no significant interaction effects present.

This group of results indicates that SES may have an effect on the mother's perception of her preschool child. Generally, as the SES level of the mother decreases, the child is perceived more negatively. Additionally, for the most part, the mother's level of depression also affects the mother's perception of her child, with the depressed mothers perceiving their children more negatively than the nondepressed mothers. The depressed mothers describe their children more negatively, feel they are not doing as well in school, and there is a trend toward feeling they have more behavior problems. The mothers' predictions about their children's behavior in a social situations is not effected as strongly, but there is some tendency for depression to effect predictions. The sex of the child does not seem to be an important factor in how mothers of preschoolers perceive their children's overall functioning, for either depressed or nondepressed mothers. The age of the child has some importance in
the mother's perception of the child, however. Mothers of four year old children expect their children to behave in a more socially appropriate manner (MAT Expectation score) than mothers of three year old children, and not significantly different from five and six year old children.

**Attributional Style of Depressed Vs. Nondepressed Mothers**

In order to address Hypothesis #2, concerning attributional style of the mother for her child's behavior, t-tests were performed on the mean scores of the two groups of mothers on the MAT (Table 8). Using Bonferroni procedures, the critical significance level for the individual t-tests was $p<.004$. At that significance level, the scores which were significantly different between the depressed and non-depressed groups of mothers were the Negative Internal score (NI), $t(50) = 3.21$, $p=.002$, and the Negative Overall score (NO), $t(49) = 3.10$, $p=.003$. There was no statistically significant difference between any of the other scores for the two groups.

In order to adjust for differences in SES and mother's age between the two groups of subjects, the NO score and NI score were subjected to an analysis of covariance with mother's age and SES as the
### Table 8

**Mean Scores and Standard Deviations on Maternal Attribution Test By Group**

<table>
<thead>
<tr>
<th></th>
<th>Depressed</th>
<th>Nondepressed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composite Score</strong></td>
<td>$n=23$</td>
<td>$n=28$</td>
</tr>
<tr>
<td><strong>Depressed</strong></td>
<td><strong>Nondepressed</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Internal (PI)</strong></td>
<td>3.8 (1.8)</td>
<td>3.3 (1.4)</td>
</tr>
<tr>
<td><strong>Stable (PS)</strong></td>
<td>3.5 (1.8)</td>
<td>2.8 (1.0)</td>
</tr>
<tr>
<td><strong>Global (PG)</strong></td>
<td>3.5 (1.5)</td>
<td>3.5 (1.7)</td>
</tr>
<tr>
<td><strong>Pos. Overall (PO)</strong></td>
<td>3.7 (1.4)</td>
<td>3.1 (1.1)</td>
</tr>
</tbody>
</table>

**Positive Situations**

<table>
<thead>
<tr>
<th><strong>Negative Situations</strong></th>
<th><strong>Composite Score</strong></th>
<th><strong>Nondepressed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal (NI)</strong></td>
<td>3.7 (1.5)</td>
<td>5.2 (1.9)</td>
</tr>
<tr>
<td><strong>Stable (NS)</strong></td>
<td>4.2 (1.6)</td>
<td>5.0 (1.2)</td>
</tr>
<tr>
<td><strong>Global (NG)</strong></td>
<td>4.6 (1.6)</td>
<td>5.4 (1.5)</td>
</tr>
<tr>
<td><strong>Neg. Overall (NO)</strong></td>
<td>4.2 (1.2)</td>
<td>5.2 (1.1)</td>
</tr>
</tbody>
</table>

**Chance Situation**

<table>
<thead>
<tr>
<th><strong>Composite Score</strong></th>
<th><strong>Nondepressed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal (CI)</strong></td>
<td>4.3 (2.7)</td>
</tr>
<tr>
<td><strong>Stable (CS)</strong></td>
<td>3.7 (1.8)</td>
</tr>
<tr>
<td><strong>Global (CG)</strong></td>
<td>4.4 (2.4)</td>
</tr>
<tr>
<td><strong>Chance Overall</strong></td>
<td>4.3 (1.6)</td>
</tr>
</tbody>
</table>

**Expectation Score**

<table>
<thead>
<tr>
<th><strong>Composite Score</strong></th>
<th><strong>Nondepressed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.9 (.67)</td>
</tr>
</tbody>
</table>

* Using Bonferroni procedures, these $p$ values reach the critical level of significance.
covariates. Also, the PO score was subjected to an analysis of covariance to determine whether SES or mother's age had an effect on the lack of a significant difference between the two groups. An analysis of covariance of the NI score revealed that there was no significant effect due to SES, $F(1,39) = .13$, $p=ns$; and age of the mother had no significant effect $F(1,39) = 3.01$, $p=.09$; however, there was a significant difference between the groups due to depression $F(1,40) = 5.9$, $p=.02$. An analysis of covariance of the NO scores revealed that SES did not have a significant effect on the NO scores, $F(1,39) = .13$, $p=ns$; and age of the mother did not have a significant effect on the variation, $F(1,39) = 3.0$, $p=.09$. There was, however, a very significant main effect by group, $F(1,39) = 11.4$, $p=.002$. The depressed group of mothers viewed their children's negative behaviors as being more internal, stable, and global overall than the nondepressed mothers. On the other hand, the mothers' perceptions of their children's positive behaviors (PO) was found to be significantly effected by SES, $F(1,39) = 8.0$, $p=.007$, and not by mother's age $F(1,39) = .96$, $p=ns$; or group (depressed vs. nondepressed), $F(1,39) = .30$, $p=ns$.

To determine if the child's age or sex had an
effect on the maternal attributional style, ANCOVAs were performed on the mean MATPO and MATNO scores grouped by three child age groups and a separate analysis on two groups by sex of child, with the covariates of age of mother and SES (Table 9). The results indicate that for positive behaviors, there is a significant difference between mothers' attributions for girls vs. boys' behavior. For girls, mothers perceived their positive behaviors as being significantly more internal, stable and global than boys, $F(1,39) = 4.1$, $p = .05$. As mentioned above, SES does have an additional effect on the mothers' overall positive attributional style, $F(1,39) = 8.8$, $p = .01$; however mother's age did not have an effect, $F(1,39) = 1.0$, $p = ns$. When the mean MAT PO scores were analyzed by age of child, the results indicate that there is no significant effect due to age of child, $F(2,38) = 2.2$, $p = ns$.

When mean MAT NO scores were grouped and analyzed by sex of child, it was found that mothers' attributions for their childrens' negative behaviors were not effected by SES, $F(1,39) = .10$, $p = ns$; age of mother, $F(1,39) = 2.4$, $p = ns$; or sex of child, $F(1,39) = 1.0$, $p = ns$. However, there was a significant difference between the mean MAT NO scores when
Table 9

Means and Standard Deviations of Maternal Attribution Scores Grouped by Age and Sex of Child

<table>
<thead>
<tr>
<th>Age of Child</th>
<th>Three</th>
<th>Four</th>
<th>Five and Six</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT PO</td>
<td>4.0 (1.2)</td>
<td>3.0 (1.2)</td>
<td>3.1 (1.0)</td>
<td>2.2</td>
<td>ns</td>
</tr>
<tr>
<td>MAT NO</td>
<td>4.4 (1.0)</td>
<td>5.3 (1.3)</td>
<td>4.7 (1.3)</td>
<td>3.4</td>
<td>.04</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boys</th>
<th>Girls</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>M</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>MAT PO</td>
<td>3.6</td>
<td>2.7</td>
<td>4.1</td>
</tr>
<tr>
<td>MAT NO</td>
<td>4.8</td>
<td>4.6</td>
<td>.22</td>
</tr>
</tbody>
</table>
analyzed by age of child, $F(2,38) = 3.4$, $p = .04$; with mothers perceiving younger children's negative behaviors as being more internal, stable and global.

In order to assess the attributional style of the two groups of mothers, a matched sample $t$-test, or repeated measure $t$-test was performed on the MAT PO and MAT NO scores of the subjects. For the depressed group of mothers, there was no significant difference between the positive overall (PO) score and the negative overall (NO) score, $t(21) = 1.7$, $p = .10$. That is, the depressed group of mothers viewed their children's positive and negative behaviors as having the same degree of internality, stability and globality. This could be called an "even-handed" attributional style. The nondepressed mothers, on the other hand, showed a significant difference between the PO and NO scores, $t(27) = 6.14$, $p < .001$, with the mothers viewing their children's positive behaviors significantly more internally, globally, and stably than their children's negative behaviors. This has been called a "positive attribution style".

The above results concern the mothers' attributions for their children's behaviors. With the second group of subjects, it was decided to
investigate the mothers' attributions for their own behavior, to determine if they had a depressive attributional style for their own behavior as well as for their childrens' behaviors. The depressed group of mothers were administered the Attribution Style Questionnaire (Peterson et al., 1974). Because the nondepressed group had not taken the ASQ, a control group of mothers of preschoolers was administered the ASQ, as well as the BDI and a demographic form in order to determine if the groups were equivalent in terms of demographics. Table 10 presents the results. T-tests were performed on the means of the demographic data and the ASQ scores. Using Bonferroni procedures, the critical significance value of the t-tests was determined to be .007. The results of the analyses of the demographic data for the two groups indicates that there are no significant differences between the groups. Results of the analyses on the ASQ data indicate that while the differences between the groups on the CP score (composite positive score) and the CN score (composite negative score) did not achieve significance, they were approaching statistical significance and in the expected direction (For CP, \( t [29] = 2.11, p=.04 \), and for CN, \( t [29] = 2.06 \),
Table 10

A Comparison of Demographic Variables and Attribution Style Questionnaire Scores Between the Depressed Group and a Control Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Depressed M (SD)</th>
<th>Control M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Age</td>
<td>30.1 (5.7)</td>
<td>32.8 (5.1)</td>
</tr>
<tr>
<td>SES</td>
<td>44.8 (18.4)</td>
<td>41.1 (18.0)</td>
</tr>
<tr>
<td>BDI</td>
<td>22.4 (8.8)*</td>
<td>4.0 (2.3)*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depressed ( # subjects)</th>
<th>Control ( # subjects)</th>
<th>**</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother Employed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>6</td>
<td>.12</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>12</td>
<td>7</td>
<td>.45</td>
</tr>
<tr>
<td>Single</td>
<td>8</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or Sep., Divorced)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One or Two</td>
<td>8</td>
<td>7</td>
<td>.12</td>
</tr>
<tr>
<td>Three or More</td>
<td>12</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

* p<.01

** Fisher's Exact Test was used for these analyses.
Table 10 (con't.)

A Comparison of ASQ Variables Between the Depressed Group and A Control Group

<table>
<thead>
<tr>
<th>ASQ Variable</th>
<th>Depressed M (SD)</th>
<th>Control M (SD)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>4.7 (.7)</td>
<td>5.3 (.9)</td>
<td>2.1</td>
<td>.05</td>
</tr>
<tr>
<td>NO</td>
<td>4.6 (.9)</td>
<td>3.9 (.8)</td>
<td>2.0</td>
<td>.05</td>
</tr>
<tr>
<td>CP</td>
<td>14.3 (2.0)</td>
<td>16.1 (2.6)</td>
<td>2.1</td>
<td>.04</td>
</tr>
<tr>
<td>CN</td>
<td>13.8 (2.6)</td>
<td>11.8 (2.4)</td>
<td>2.1</td>
<td>.05</td>
</tr>
<tr>
<td>CPCN</td>
<td>.48 (3.14)</td>
<td>4.3 (2.8)</td>
<td>3.3</td>
<td>.003*</td>
</tr>
</tbody>
</table>

* Using Bonferroni procedures, this value reaches a critical level of significance.
p = .05). The depressed group believed their positive behavior was the result of more external, unstable and specific causes than the control group. Additionally, the depressed group viewed their negative behavior as being the result of more internal, stable and global causes than the control group.

The CPCN score is equal to the difference between the CP and CN score for each subject, and represents the attributional style of the subject. That is, if the CPCN score is positive, the subject views her positive behavior as being more internal, stable and global than her negative behavior. The opposite would be true for a negative CPCN score. The difference between the two groups on the CPCN score did achieve a critical level of statistical significance ($t [29] = 3.37, p = .003$).

The results of the ASQ data analyses indicate that the depressed group of mothers has a different attributional style than the control group of mothers (who are not depressed, but are similar in demographic character). As a group, the depressed mothers are more "even-handed" about the causes of their positive and negative behavior, whereas the control group of mothers viewed their positive
behavior as being more internal, stable and global than their negative behavior. Depressive symptoms appear to affect the mothers views about the causes of their own behavior as well as their childrens' behavior.

**Accuracy of Mothers' Perceptions of Their Children**

It was predicted in Hypothesis #3 that the children of the depressed mothers would have more behavior problems than the children of the nondepressed mothers and that their perceptions of their children would be more accurate than the perceptions of the nondepressed mothers.

In order to assess whether the children of depressed mothers had more behavior problems than the children of nondepressed mothers, an analysis of covariance was performed on the Sum of Behavior Problems score on the Teacher Report Form (TRF B.P.) with SES and age as covariates. The results of all the analyses of the TRF B.P. and TAF data is summarized in Table 11. This analysis revealed that there was no effect on the teacher's behavior problem scores (TRF B.P.) due to SES $F(1,27)=1.4$, $p=\text{ns}$; or mother's age, $F(1,27)=.42$, $p=\text{ns}$; or depression level, $F(1,27)=1.2$, $p=\text{ns}$. When the TRF B.P. scores were analyzed by age of child with the covariates of
SES and mother's age, there were no significant differences between age groups, \( F(2,26) = 1.4, p = \text{ns.} \) Additionally, there was no significant difference between groups when the TRF B.P. scores were analyzed by sex of child (Table 11), \( F(1,27) = .001, p = \text{ns.} \)

As was stated earlier, there was a close to significant difference between the two groups on the sum of behavior problems on CBCL (PSUMBP) based on effect of SES, and a trend toward a significant difference between the groups based on depression. Therefore, the results indicate that while the mothers' views of their childrens' behavior problems are affected by SES and probably, depression (but not by the child's age or sex), the teachers' views of the childrens' behavior problems are not affected by SES, depression, or the child's age or sex.

The Adaptive Functioning score on the Teacher Report Form (TAF), is based on four ratings by the teacher concerning the student's overall functioning in the classroom (e.g. how appropriately is he/she behaving, how happy is he/she?). The higher the total score, the better the student's adaptive functioning is, according to the teacher. On this score from the Teacher Report Form, there was no significant effect on the teachers' scores due to SES.
Table 11

**Summary of TRF Behavior Problem Scores and Adaptive Functioning Scores**

<table>
<thead>
<tr>
<th>Score</th>
<th>Age of Child</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Three</td>
<td>Four</td>
<td>Five or Six</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>TRF B. P.</td>
<td>14.0 (9.2)</td>
<td>20.7 (12.8)</td>
<td>11.8 (10.8)</td>
</tr>
<tr>
<td>Adaptive Func.</td>
<td>14.3 (3.9)</td>
<td>15.7 (3.3)</td>
<td>19.5 (2.8)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>Boys</th>
<th>Girls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>TRF B.P.</td>
<td>15.5</td>
<td>21</td>
<td>16.0</td>
</tr>
<tr>
<td>Adaptive Func.</td>
<td>15.8</td>
<td>19</td>
<td>17.9</td>
</tr>
</tbody>
</table>
of the child, $F(1,24)=.03$, $p=\text{ns}$. However, while there was a significant difference based on mother's age, $F(1,24)=6.4$, $p=.02$; there was no significant difference due to the depression level of the mother, $F(1,24)=.50$, $p=\text{ns}$. When the TAF scores were analyzed by age of child and sex of child, the results indicate that the teachers' views of how well the child is functioning (TAF) were affected by the child's age, $F(2,23)=7.0$, $p=.003$, and the variation in the scores are significantly affected by the mother's age, $F(1,23)=8.7$, $p=.007$, but not by the child's sex, $F(1,24)=.70$, $p=\text{ns}$, or SES, $F(1,23)=.05$, $p=\text{ns}$. When one specific question from the Teacher Adaptive Functioning scale was analyzed (how happy is this child?) by depression level of mother, the results indicate a trend toward the children from the depressed group of mothers being viewed by the teachers as more unhappy. The scores were analyzed by a non-parametric analysis of data, the Mann-Whitney test, which produced a $Z=-1.9$, $p=.06$. Therefore, although the teachers' views of overall functioning of the child were affected by mother's age and age of the child, their view of how happy the child is seems to be affected by the mother's level of depression.

In answer to the question of whether the
depressed mothers were more accurate in their view of their children's behavior, Pearson product-moment correlations were performed on the scores for Parent and Teacher sum of behavior problems (CBCL B.P. and TRF B.P.) for both groups of mothers. The correlation for neither group was significant. The correlation between mothers' perceptions of behavior problems and teachers' perceptions of behavior problems for the depressed group was $r = .21$, $p = .42$, and for the nondepressed group was $r = .05$, $p = .86$, indicating that neither group of mothers was "accurate" in their perception of their child, at least when compared to the teachers' views.

**Prediction of Mother's Perception**

Hypothesis 4 was tested by a stepwise multiple regression. This analysis was performed to identify those variables that best predicted the mother's overall perception of her child (PAT Total score). The potential predictors that were included in the model were: CBCL sum of behavior problems (PSUMBP), child age, SES level, Socialization Scale on the CBCL (sum of the Activities Score and the Social score), mother's depression level (BDI), overall positive attribution score on the MAT (MAT PO), overall negative attribution score on the MAT (MAT NO), and
Expectations score on the MAT. A significance level of .05 was required to enter the model. The proportion of variance in the PAT Total score was explained for the variables in the model by $R^2$. The results of the multiple regression showed that CBCL B.P. was the first variable to enter, giving an $R^2$ of .56. The next variable to enter was MAT NO, with the $R^2$ increasing to .62. No other variable was statistically significant. In order to assess the total amount of variance that would have been explained had all variables been included, a second multiple regression was performed with all the variables, and the $R^2$ increased to .71 with no other variables being statistically significant.

The results of the stepwise multiple regression show that the significant predictors of the mother's perception of her child are the sum of the behavior problems that she believes the child to have, and her attribution of her child's negative behaviors. The first finding is to be expected, because these are very similar measures and are highly correlated ($r=.66$). It is important to note however, that the mother's attribution for her child's negative behaviors was a more significant predictor of the
perception of her child than her depression level. In summary, the more behavior problems the mother perceives the child to have, and the more she feels that negative behaviors are due to internal, stable and global reasons, the more negatively she will feel about her child.
Discussion

The first significant result in this study was that the group of mothers designated as "depressed" was significantly younger and of a significantly lower socioeconomic status than the "nondepressed" group of mothers. The depressed group had a mean age of 30.5, while the nondepressed group had a mean age of 34.5. Both mean ages, however, are well within the 25-49 year old group that Dean (1985) describes in his research study on the epidemiology of depression.

The statistically significant difference between groups on the SES factor is of greater concern. The depressed group had a mean four-factor index score of 43.1, while the non-depressed group had a mean four-factor index score of 57.3. Not only must this difference be controlled for statistically (through the use of analysis of covariance or ANCOVA) but it needs to be understood from a theoretical viewpoint.

The original group of subjects were volunteers whose children attended suburban nursery schools. Most of them were middle class and highly educated. A self selection process was obviously in operation in which those mothers who had time and interest in psychological research were the ones to volunteer. Of
those mothers, 2 out of the 30 (7%) interviewed scored above 9 on the Beck Depression Inventory. As mentioned in the Method section, an unsuccessful attempt was made to locate depressed subjects in the outpatient clinic of a large psychiatric hospital (a general adult outpatient clinic, not a Depression Clinic). In order to complete the study, mothers who scored above 9 on the Beck were found by advertising, and by making contact with a "Families in Crisis" program. Of those women, 22 of the 25 interviewed scored above 9 on the BDI. The majority of these women had less education and lower status jobs (or their husbands had lower status jobs) than the non-depressed group of women. Although initially an attempt was made to avoid an SES difference between groups, the reality of finding depressed subjects (mothers of preschoolers) made this impossible.

Several major studies (Belle, 1982; Brown & Harris, 1978; and Lin, Dean, & Ensel, 1986) have examined the relationship between social class and depression. Brown and Harris (1978) were interested in the direct involvement of the social environment in the disorder of depression. They randomly interviewed 458 women in a working class section of London and found that 17% could be classified as
having a clinical depression, and another 19% had enough depressive symptoms to be classified as "borderline depressed". One half of the clinically depressed cases were acute (onset within 3 months) and one half were chronic (depressions which had been present for 1 year). Of the "borderline depressed" cases, one third of these cases were acute, and one half were chronic. Since only one in twenty (5%) of the middle class women were classified as depressed, the authors make a strong case for viewing clinical depression as a social phenomenon. By using a variety of depressed women as subjects (inpatients, outpatients, those not in treatment, and those seeing a general practitioner for treatment) they were able to develop a model which they believe explains all forms of depression. They were able to identify provoking agents, which influence when the depression develops; vulnerability factors, which influence whether the provoking agents will have an effect; and symptom formation factors, which influence the severity and form of the depressive disorder.

The provoking agents were found to be severe events involving a long-term threat, and ongoing major difficulties. The distinctive feature in the severe threat was that it involved a loss or a
disappointment (a person object, role, or idea). The ongoing major difficulties were unpleasant and had lasted at least two years. These provoking agents were not sufficient to bring about a depression, but largely determined when a depression would occur.

The vulnerability factors were found to be: lack of an intimate tie (generally boyfriend or husband), three or more children under the age of 14 at home, having lost her own mother before age 11, and lack of employment. Working class women with children were four times more likely than middle class women to develop depression when there was a provoking agent. Having an intimate tie or being employed, on the other hand, protected against the vulnerability of provoking agents. The authors (Brown & Harris, 1978) found that most of the social class differences could be explained by the fact that working class women have more of these vulnerability factors. The remaining amount of SES differences in risk of depression were explained by the differences in working class women experiencing more severe events and major difficulties. These difficulties have often been called "inner city stress" and include such problems as poor housing, financial problems, and problems with husbands and children. The authors
conclude that social factors play a formative role in a majority of the onsets of depression at all treatment levels and with diverse symptom pictures. Social factors enhance the woman's vulnerability to loss events and the severity of the condition.

Another important finding is how the relation of social class to life stage affects the rate of depressive disorders in women. The authors (Brown & Harris, 1978) found that social class was not a factor in risk of depression for women without children. Single women and married women (both working class and middle class) with no children had a very low rate of psychiatric disorder (1 in 20), and women (of both social classes) who had been separated, widowed or divorced had a very high rate (1 in 3). For married women with children however, there were striking social class differences. Working class women with their youngest child under the age of 6 had a 31% rate of psychiatric disorder, while their middle class counterparts had a rate of 7%. (The majority of psychiatric disorders were depressive).

Belle and co-researchers (1982) explored more directly the relationship of low income to depression. Some of the factors involved in being
low-income were: the unpredictability of finances, unrelieved child care responsibilities, poor housing, and inadequate employment opportunities. These researchers found clearly that those women who experienced a more stressful and less supportive environment also experienced more depressive symptoms. The low income women they interviewed experienced significantly more stressful lives and more depression than the general population. While problems with money, lack of control over their own schedules, and having a deprived and disrupted childhood were associated with an increase in depressive symptoms, women who received financial, emotional, and child care help and had an intimate confidant were less depressed (Belle, 1982). Lin, et al. (1986) focussed on the relationship of stressful events and social support to depression. They found that having an intimate and confiding relationship with a confidant of the opposite sex is the most effective buffer against the effects of stressful life events on the incidence of depression. Marital disruption has two negative effects on depressive symptoms (increases depressive symptoms). Not only does marital disruption constitute an adverse life event, but it disrupts an intimate and confiding tie
(Lin, et al., 1986).

The women in the "depressed" group in the present study have many of the provoking agents and vulnerability factors in their lives that the above researchers (Belle, 1982; Brown & Harris, 1978; and Lin, et al., 1986) discuss. These women as a group were more often single, separated, and divorced, and as a group had significantly more children, and a significantly lower economic and occupational status. As mentioned above, these qualities are vulnerability factors and provoking agents for depressive symptoms. Being a single, divorced, or separated mother of a young child not only represents an adverse event (and a loss of a relationship) having happened, it prevents these women from having the "protection" of an intimate and confiding tie. Having a lower income often represents the stress of lacking adequate housing, not being able to afford adequate child care, and continual worry about finances. Although not examined in the present study, other factors which have been implicated in maternal depression are early adverse experiences in the life of the mother, such as death of her own mother or poor parenting, not succeeding in school, and therefore entering the world of marriage and child rearing early (Puckering,
Additionally, working class women report more dissatisfaction in their marriage than middle class women. Four out of ten (40%) working class women in the Brown & Harris study (1978) reported considerable dissatisfaction with their marriage or little warmth or enthusiasm. Two thirds of these women were "borderline depressed" (Brown & Harris, 1978). There was a similar finding in the present study. Nine out of the 24 (38%) depressed subjects had had a marriage bad enough to cause separation or divorce, and the rest were not specifically asked about the state of their marriage.

Brown & Harris (1978) discuss the question of treatment of psychiatric disorders in their sample of patients which also has a bearing on how subjects in the present study were chosen. There was definitely a process of self-selection for psychiatric help which was operating in the women in the Brown & Harris (1978) study. The majority of the working class women whom they interviewed had decided not to get psychiatric help for several reasons: they saw their social environment as of crucial importance in their difficulties (and therefore not amenable to change through psychiatric help), they had young children, and they had a determination to carry on
their lives.

In the present study, some of the same factors encountered in the Brown & Harris (1978) study affected the availability of depressed subjects. Depressed mothers of preschoolers were not very common in middle class suburban preschools, because depression has a fairly low incidence in middle class women with young children (7%). Additionally, mothers of preschoolers were not present at an outpatient clinic, probably for the same reasons cited in the Brown & Harris (1978) study (young children make it difficult to go for treatment). Since it was not feasible to randomly visit homes in a certain area to recruit subjects as the Brown & Harris (1978) and Belle (1982) studies had done, the present study had success in locating depressed mothers of preschoolers at a program which provided support to parents who were in a "crisis" for some reason. The program provided respite child care, counseling (not psychotherapy) to the parents (generally mothers), and advice about practical matters such as financial aid, educational advancement and housing matters. Therefore, although mothers who were experiencing symptoms of depression were easily recruited from this program, the confounding factors
of a lower socioeconomic status, younger age of mothers, more single mothers, and more children per family were unavoidable.

The present study found some effect on the mothers's perception of her child's functioning (as represented by number of behavior problems reported, and predictions about behavior) due to SES. In the Belle (1982) study, one of the findings was that mothers living in poverty had a different manner of interacting with their children, and different expectations than middle class mothers. The poor mothers tended to expect their children to be independent at an earlier age, to help out more, and they responded more to their children's negative behaviors than their positive ones. Kessler (1988) cites the Report of the Joint Commission on Mental Health of Children (1970) which discusses the child rearing patterns more prevalent among the very poor. The patterns include: harsh and inconsistent punishment, magical thinking, orientation to the immediate present, limited verbal communication; and a push for premature child independence. The findings of both of these studies indicate that poor mothers may have an unrealistic view of what young children should be like, and may expect more of the
child than the child can realistically be able to do. These findings may also explain why the mothers' perceptions of their children were negatively affected by a lower SES.

The mother's age was not a factor in any of the mothers' perception scores or the teachers' behavior problem scores, however the Teacher Adaptive Functioning Score was affected both by the child's age and the age of the mother. If we consider the Adaptive Functioning Score as a reflection of how well the child is doing, rather than how poorly he is doing (behavior problems), then it becomes apparent that both the child growing older and having an older mother have a beneficial effect on the child's success in school.

In addition to the effect of SES on the mothers' perceptions of their children, depression also significantly affected the overall attitude of the mother toward her child, and approached significance (p=.08) for an effect on the number of behavior problems (after the effects of SES and age were covaried out). Other researchers (Susman, Trickett, Ianotti, Hollenbeck & Zahn-Waxler, 1985; and Weissman et al., 1972) have noted similar tendencies for depressed mothers to be more irritable and critical
of their young children. When the effects of low SES and depression overlap, as they did to some extent in the present study, mothers react in especially negative ways. In Belle's (1982) study, observers of poor and depressed mothers described their mothering as being less responsive and nurturant, more restricting and actually hostile. The interaction between SES and depression becomes more apparent when we examine the mean SES levels of the subjects in the present study divided into three levels of depression (non-depressed, mild to moderate depressed, and moderate to severe depressed). The nondepressed group had a mean SES score of 57.3 (12.6), the mild to moderate group had a mean SES of 46.4 (15.6), and the moderate to severe group had a mean SES level of 40.7 (20.4), with the statistically different groups being only the non-depressed and the moderate to severe depressed groups. We can see with this analysis that the most depressed group (BDI = 17+) accounted for the difference in SES levels between the two main groups in the study (nondepressed and depressed). The other statistically significant finding about the most depressed group was that they were more likely to have three or more children, which is a finding similar to Brown & Harris (1978),
wherein they found that having three children under the age of 14 at home was a vulnerability factor for depression.

The mothers in the present study were more critical and pessimistic about their children due to SES level (although not an extremely strong effect) and depressive symptoms, but if we can assume that the teachers' reports of the children's behaviors were objective, then the depressed mothers were not more accurate about their children than the non-depressed mothers, as had been predicted. This finding is in agreement with the findings of Webster-Stratton and Hammond (1988) who found that although the depressed mothers perceived that their 3-8 year old children had more behavior problems than the children of the nondepressed mothers (using the CBCL), the behavior of the two groups of children did not differ on teacher report scores. In contrast was the finding of Conrad & Hammen (1989) that depressed mothers were more accurate at perceiving their children's (age 8-16) problems than nondepressed mothers. When the child did have behavioral problems, the depressed mother was more likely to perceive them than the nondepressed mother. One of the differences between these studies is the age of
the children that were included in the study. The present study involved mothers of children ages 3-6, similar in age to the children in the Webster-Stratton & Hammond (1988) study. Although there is evidence in the depression literature that the depressed mother either exaggerates her child's problems or her perception is due to an interaction between her depression and the child's actual behavior (Brody & Forehand, 1986) an alternative explanation is that the preschool child may behave differently at home than at school. Support for this hypothesis comes from several of the unsolicited comments of the preschool teachers who were asked to fill out Teacher Report Forms about the children of depressed mothers. One stated that the child was "always very willing to please his teachers in the classroom...., he enjoyed being a helper, and thrived on the positive reinforcement we give him here...", but the teacher noticed that "...his behavior did change when his mother came into the classroom....he appeared frightened and confused by whose direction he should take". Another teacher commented that the child was "non-compliant in the presence of her parent, and non-responsive in the presence of her parent". Puckering (1989) described mothers of preschoolers as being "less sensitively tuned in
their responsiveness to the child" (p.811). The children of depressed mothers in a study she cites (Cox, Puckering, Pound & Mills, 1987) needed to use more direct approaches to elicit responses from their mothers, sequences of positive interaction were cut short by distress or conflict, and the depressed mothers showed preoccupied inattention in the presence of their children. Perhaps there were no differences in estimates of child behavior problems by the teachers in the present study because the children of depressed mothers behave more appropriately with their teachers than they do at home (and more like the children of the nondepressed mothers). An alternative explanation is that the teachers of the worst behaved children were perhaps the ones who did not return the Teacher Report Forms, and this may have skewed the results. At this point, it is impossible to decide whether the depressed mothers are simply more critical and exaggerate their children's problems, whether the children behave differently and more appropriately with a teacher than with their mother, or whether the non-difference between groups was due to sampling problems. A study which compared the perceptions of mothers of preschool children and school age children
with observations of mother-child interactions and teacher reports might be able to disentangle the confounding elements.

Another way in which the mothers' perceptions of their children was affected was that the mothers of younger children (three year olds) believed that their children would behave in a less successful or positive manner in certain situations (MAT Expection score) than the older childrens' mothers did (four year olds), reflecting a realistic appraisal of older childrens' increasing control and experience.

The results concerning the mothers' attributional styles for their childrens' behavior indicate that depressed mothers' attributional styles for their own behavior are extended to their children. The nondepressed mothers in this study appraised their children's hypothetical behavior in a manner similar to the mothers in the Gretarsson & Gelfand (1988) study and the comparison group of mothers in the Larrance & Twentyman (1983) study. That is, they believed that their childrens' positive behaviors were significantly more internal, stable and global than their childrens' negative behaviors. This positive bias in appraising their children's behavior is so pervasive that Gretarsson and Gelfand
(1988) feel that any exceptions to this "powerful perceptual tendency are of extraordinary importance in the understanding of socialization" (p. 265).

Hence, the finding that the depressed mothers in this study view their children's behavior in an "even-handed" attributional style rather than a positive style is an important finding. It was hypothesized in the Gretarsson and Gelfand (1988) study that the mothers' positive parental bias could be useful in enhancing the parents' feelings of self worth by believing their children are especially meritorious.

Additionally, they (Gretarsson & Gelfand, 1988) felt that interpreting their children's behavior in a positive way may have enabled the caretaker to act in a consistent, effective and optimistic manner. The depressed mothers in the present study had an even-handed attributional style for their own behavior which was similar to their attributional style for their children. They attributed the same amount of internality, globality, and stability to both positive and negative behaviors. The striking difference between the groups, however, was present in the amount of internality ascribed to their children's negative behaviors.

Overall, however, the results of the present
study indicate that the best predictor of the mother's perception of her child's functioning (as measured by the Parental Attitude Test) is how many behavior problems she believes the child has, and the next best predictor is whether she feels the child's negative behavior is caused by internal, stable and global causes (MAT NO). Women who have depressive symptoms differ from mothers who do not in the way they view their children's behavioral causes. Although they are just as likely to view positive behavior being internally, globally, and stably caused, they see negative behavior of the child being just as internal, stable and global, whereas the nondepressed mothers view negative behavior as more external, unstable, and specific.

In answer to the major question raised in introducing the topic of maternal depression and maternal perception of the child, one of ways that the mother's perception of the child is affected is through maternal attribution style. Studies (Asarnow & Bates, 1988; Seligman, Castellon, Cacciola, Schulman, Lluborsky, Ollove, & Downing, 1988) have indicated that attributional style can change within the context of therapy for depression (although not implying that a "depressive attributional style"
causes depression). The results of the present study make a strong case for adjunct therapy for the mother of a child referred to a clinic for behavior problems. As the mother's depression remits, her own attributional style will improve. Nondepressed mothers are able to view their children's negative behaviors in a more positive way (caused by more external, unstable, and specific reasons) which affects their perception of their child, and also their interactions with them. By extending their own "self-serving" bias to their children's behavior, they are able to preserve their positive feelings about their children. In the Larrance and Twentyman (1983) study the authors stated that the maltreating mothers believed their children were acting intentionally to annoy them. While the depressed mothers in the present study seem to have feelings similar to the nondepressed mothers when their children behave positively, they are similar to the maltreating mothers when their children behave negatively. This could be one of the reasons why depressed mothers have been described as being more irritable, and even hostile to their children.

Future research in this area needs to focus on whether there is an improvement in the mother's
perception of her child and a reduction in her perception of her child's behavioral problems (and improvement in interaction style) when her attribution style improves.
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Appendices

Appendix A

Dear ,

I am a graduate student in clinical psychology from Case Western Reserve University, in Cleveland, Ohio. I am currently recruiting subjects for my dissertation on "How Mothers Understand Their Children's Behavior". I would appreciate it if you would allow me to ask the mothers of your students if they would be interested in participating in my research. The research involves being interviewed, and filling out several questionnaires about child behavior. All information gathered would be used for my research purposes only, and would be coded by number. The time involved would be approximately 1 1/2 hours. The mothers who have participated in the past have enjoyed it.

If you have any questions about this research, please feel free to call me at 233-5682. I will call you in the near future to find out if you would be willing to have me contact the mothers at your school.

Thank you very much for your cooperation.

Sincerely,

Mary Anne Lothstein

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Appendix B

Dear Mother of a Preschooler,

I am a graduate student in Child Clinical Psychology from Case Western University in Cleveland, Ohio. I am in the process of collecting data for my dissertation.

I am looking for mothers who would be willing to be subjects for my study. The topic I am studying is: "How mothers understand their children's behavior". I am particularly interested in mothers of preschoolers because I know what an exciting and frustrating stage this can be for parents. This project would only take about one hour of your time. It would involve filling out several questionnaires and being interviewed by me. (All data collected by me would be used for my research only, and would not have any name on it.) Mothers who have already participated in this project have enjoyed doing it.

I have spoken with the director of your child's school and she has given her approval for me to inform your about this project. This research has nothing to do with your child's school, and the information gathered will not be seen by the teacher
or director.

If you would be willing to be a subject, I will set up an appointment with you at your convenience. Please fill out the lower part of this sheet and have your child return it to school as soon as possible. If you would prefer, you may contact me at 233-5682 in order to schedule an appointment.

Thank you,

Mary Anne Lothstein

Yes, I am interested in finding out more about the study "How mothers understand their children's behavior", with the possibility of participating as a subject.

Name:__________________________________________

Telephone #______________________________
Appendix C

Dear Dr.,

I am a graduate student in clinical psychology and I am finishing my doctoral dissertation on the topic of depression in mothers of preschoolers. The topic of my research is "How mothers understand their children's behavior". Participation requires only an hour of the subjects time.

I am writing to ask if you might have in your practice any mothers who would be appropriate subjects for my study. They would need to be experiencing some depressive symptoms, and have a child between the ages of 3 to 6. If you would let them know about my study to ascertain their interest in participating, I would appreciate it. I will contact you at a later date to see if you have any patients who would be interested in participating and who would be willing to have me contact them.

Thank you for your help.

Mary Anne Lothstein, M.A.
Appendix D

Advertisment in Weekly Suburban Newspaper

Graduate student clinical psychology needs depressed mothers of preschoolers (ages 3-6) for University research project. Research involves approximately 1 hour of subject's time. Subjects will be compensated for their participation.

FOR MORE INFORMATION

call 233-5682
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Appendix H

Consent Form

I freely and voluntarily, and without any element of coercion or duress, give my consent to be a participant in the research project on how mothers understand their child's behavior conducted by Mary Anne Lothstein of Case Western Reserve University. I understand that I may withdraw consent at any time during the project. All results of my participation will be confidential. Reports of this research will not contain data in individually identifiable form.

Procedures to be followed in participation include:

1. Completion of four questionnaires by me. These measures will take approximately 45 minutes to complete. They involve measures of child behavior and parenting stress.

2. One questionnaire will require the experimenter to take seven photographs of my child as the child is involved in various activities, for example, coloring. I will receive these photographs at the end of the session when I complete the questionnaires.

3. My child's teacher will complete one
questionnaire regarding my child's behavior. Possible benefits of participation to me are a better understanding of my child's behavior and my reactions to it.

There are no physical risks involved in participation beyond those of daily living. The specific research questions involved in this project will be fully explained to me following participation. The investigator will respond to any questions I have during the course of the project.

The nature and purpose of this research project have been satisfactorily explained to me. If I have any questions, Mrs. Lothstein may be reached at 233-5682. A copy of this form is available to me upon request.

________________________  ______________________
Signature of Investigator  Signature of Participant

________________________
Date