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**Latino Mother-Child Dyads: Attachment, Psychosocial Factors, Mother's Perception of
the Child's Temperament, and Quality of Dyadic Competence**

By

ANABEL BEJARANO

**A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of
the requirements for the degree of Doctor of Philosophy, The City University of New
York**

2000

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Abstract

Latino Mother-Child Dyads: Attachment, Psychosocial Factors, Mother's Perception of the Child's Temperament, and Quality of Dyadic Competence

by

Anabel Bejarano

Advisor: Vera S. Paster, Ph.D.

This study analyzed the mother-child relationship within a non-clinical sample of low socioeconomic status, Dominican and Puerto Rican mother-child dyads. The study examined the effects of stress, social support, maternal perception of the child's temperament, and attachment behaviors on dyadic competence for 23 dyads. Variables assessed shortly following the child's birth during the perinatal period, and at the child's age of 12 and 18 months, were used as predictors of dyadic competence in mother-child interaction during a free-play episode observed at the child's age of 18 months.

The methodology included nonstandard, semi-structured stress and social support scales developed for a prior study on multi-risk mothers (Fiks, Johnson and Rosen, 1985). The stress scale measured the reported level of stress experienced in the areas of finances, living arrangements, children, family and friends. The size of the social support network was based on the number of individuals counted on by the mother, and available to help with financial, personal, and health/medical problems. The mothers' perception of her child's temperament was based on questions regarding the consistency of the child's eating and sleeping habits, activities enjoyed by the child, the degree of fussiness and ease of comforting the child. Attachment

behaviors (proximity-and contact-seeking, contact-maintaining, resistant, and avoidant behavior) and the amount of crying were assessed during two reunion episodes of a modified Strange Situation procedure at 12 months based on a 7-point dimensional rating scale (Ainsworth, Bell, Waters, and Wall, 1978). At the child's age of 18 months, the degree of mutual competence in dyadic interaction was measured by the Parent-Child Observation Guide (Bernstein, Percansky, and Hans, 1987). This scale is based on Goldberg's (1977) concept of mutual competence and rates behaviors of the mother and child that support or encourage mastery of developmental tasks.

Maternal perception of the child as fussing alot at 18 months was highly predictive of less effective maternal competence in a free play situation. This dynamic relationship was stronger than that between maternal competence and stress, social support and attachment behaviors assessed at 12 and 18 months. However, stress from living arrangements and problems with friends and family during the perinatal period were predictive of maternal competence. The relationship between social support, rates of proximity seeking and contact maintenance behaviors and maternal competence failed to yield significant results.

Although the mother and child's rates of competence were not concordant, it was found that mothers who had accurate expectations of the child for the child's age, who treated the child with respect, who helped the child stay interested in a toy or activity, and remained patient with the child had higher rates of maternal competence. For the child, rates of competence were most correlated with their ability to invite an interaction or play activity with the mother, and noticing their mothers smiling at them in several situations. In addition, high rates of proximity seeking behavior during the first reunion episode was a strong predictor of the child's competence.

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Chapter I

Introduction

This study analyzed the mother-child relationship within a non-clinical sample of low socioeconomic status, Dominican and Puerto Rican mother-child dyads living in an inner-city section of New York City. The participants were a subsample of women and their children drawn from a completed longitudinal study, known as the Mother-Infant Program at Columbia Presbyterian Hospital in New York City.

Few attachment studies that assess the impact of dynamic and psychosocial factors on dyadic interaction include Latino participants, in particular longitudinal investigations. Consequently, little confidence can be placed on what is known thus far about the attachment of Latino mother-child dyads. Latino mother-child dyads have commonly been compared to Anglo dyads with respect to parenting and child development. When study designs are group comparisons, Latino subjects are often implied to be deficient or non-optimal. It may be that maternal behaviors considered optimal by researchers are embedded within the context of middle class, Anglo-American values and theories of child development (Garcia-Coll, 1990; Halpern, 1990; Harkness, 1980; Ogbu, 1981, 1988; Zayas and Solari, 1994). An inherent bias may exist in determining "optimal" versus "non-optimal" behaviors of Latino dyads as compared to those of Anglo dyads.

Rather than compare Latino dyads to Anglo dyads, this study investigated the influence of internal and external factors on mother-child dyadic competence within the context of a low-income community. Internal factors refer to dynamic variables, namely the mother's perception of

her child's temperament and the quality of attachment behaviors exhibited by the child at 12 months of age. External factors refer to the psychosocial variables of stress and social support experienced by the mother. Each of these variables were assessed for their impact on dyadic competence at the child's age of 18 months.

According to the 1990 U.S. Census Bureau, the Latino population in the United States increased from 16,940,000 in 1985 to 22,354,059 in 1990 (U.S. Bureau of the Census, 1991). These figures do not include undocumented immigrants known to enter the United States in large numbers, given the deteriorating political and social environments in Mexico, Central and South Americas, and the Caribbean. A report from the National Center for Health Statistics, Centers for Disease Control and Prevention (NCHS, February 13, 1998, electronic mail) found that in 1995, almost one in five births in the United States were to Hispanic women. In 1996, it was estimated that the Latino population of the United States would increase to over 35 million by the year 2000, to become the largest ethnic-racial group by 2020 (Casas and Vasquez, 1996). The upcoming population census for 2000 will soon provide an update on the current number of Latinos in this country.

Given the increasing diversity of Latino immigrant groups in this country, it is important to refine our clinical knowledge of the various ethnic subgroups. At this time, the Caribbean nation of the Dominican Republic is one of the fastest-growing Latino immigrant groups in the United States (Guarnizo, 1994). In New York City alone, there were an estimated 800,000 Dominicans residing in 1993, and 20,000 more arriving annually, according to the Dominican Studies Institute at the City University of New York (1999, November 12, The New York Times).

According to the 1990 U.S. Census, about 7 of every 10 Dominicans in the continental United States resides in New York City (U.S. Census Bureau, 1991). In New York City, the dominant Latino subgroup is Dominican. The area of highest concentration in New York City is located in the Upper Manhattan Valley, known as Washington Heights. Despite this sizable and increasingly important Dominican population, little is known about their parenting and relevant developmental trajectory. For mental health purposes, it is important to have an understanding of the primary relationship among Dominican mother-child dyads.

For the purpose of this study, the terms “Hispanic” and “Latino” are used interchangeably to refer to individuals of Caribbean (Puerto Rican and Dominican), Mexican or Chicano, and South and Central American heritage. The term “minority” refers not only to individuals of Hispanic descent but also to African-Americans, Native Americans, Alaskan natives, Asians, and Pacific Islanders (U.S. Code, Title 42, Section 7141[f]). Every effort was made to specify the subject’s ethnicity in the studies discussed.

The mother-child relationship was studied during the initial weeks following the child’s birth (perinatal period), the child’s age of 12 months, and the child’s age of 18 months. As children mature from infancy to toddlerhood, their cognitive and motor development facilitates increased autonomy and interaction needs, which in turn requires flexibility and competence in parenting ability (Mahler, Pine and Bergman, 1970, 1975; Winnicott, 1965).

The quality of the primary relationship assessed during these periods has been reported to contribute toward the child’s development of basic trust, increased socialization, a healthy sense of self as effective, and a secure attachment to the mother (Erikson, 1963; Lamb, 1982; Pine,

1985; Ainsworth, 1973). Depending on the quality of this first relationship, on how well the dyad communicates, the infant will learn whether her own behavior has an impact, whether she is able to influence the immediate environment, and whether she can consistently rely on contingent and sensitive responses from her caretaker (Ainsworth, 1969; Bowlby, 1958; Goldberg, 1977). The infant's emerging sense of emotional and social competence is thus directly related to the nature of the attachment to the mother.

In order to assess the quality of dyadic competence at 18 months during the observation of an unstructured play episode, the theoretical construct of mutual competence as described by Goldberg (1977) was examined. The term "mutual competence" is used in referring to the dyad's development of competence, or efficacy, in their respective roles. Competence for the mother and child results from successful interactions with one another. It has been operationalized as *"any interaction that enables either the child or the parent to feel secure, successful, or valued; to enjoy each other or to enjoy learning, and which is good for the development of the child"* (Hans, Bernstein and Percansky, 1991, p. 90). Mutual competence, as a construct is similar to the concept of developmental competence focused on by other researchers (Matas, Arend and Sroufe, 1978; Waters and Sroufe, 1983).

An adaptive mother-child relationship is one in which both are able to experience competence and a sense of self as effective in relating to one another. It is in the process of communicating, through the cumulative impact of daily interactions with the mother, that the infant develops a sense of competence with regard to emotional and social development (Bernstein, Hans and Percansky, 1991; Sroufe, Schork, Motti, Lawroski and LaFreniere, 1985;

White, 1959). Similarly, the mother gains a sense of satisfaction and efficacy in being able to accurately read and respond to her baby's communicative gestures, as well as by having the baby respond to her own communicative initiatives (Goldberg, 1977). Both members of the dyad need to know what to expect from each other, and how to influence the others' behavior. In particular, for mothers who may not have control in other areas of their life, communicating effectively with their child may provide an important experience of competence.

Within a transactional perspective it is acknowledged that although the mother has more control in shaping the relationship, both members function as a system, thereby impacting one another's communicative behaviors; and as a system they are affected by environmental or contextual factors (Belsky, Rovine and Taylor, 1984b; Egeland and Farber, 1984; Lewis and Rosenblum, 1974; Sameroff and Chandler, 1975). The dyad is affected by factors intrinsic to the mother, such as her internal representation of the child (Stern, 1985), factors intrinsic to the child, such as temperament (Thomas, Chess and Birch, 1968), and factors in the environment, such as levels of stress (Conger, McCarty, Yang, Lahey and Kropp, 1984) and the extent of social support available to the mother (Coletta, 1979).

Intrinsic to the mother, is her subjective impression of the child's temperament (Bates, 1983). A mother's perception of her child's traits indicative of temperament, whether positive or negative, were found to be associated with aspects of maternal behavior (Bates, 1983; Lee and Bates, 1985). In particular, negatively valued traits as perceived by the mother increase the risk of a problematic dyadic relationship (Broussard, 1976; Broussard and Hartner, 1970). Attachment researchers have also proposed that the quality of the mother-child relationship, as manifested by

dyadic interaction, is influenced by external factors such as cultural, socio-demographic, and psychosocial stressors in the life of the mother (Fracasso, Busch-Rossnagel and Fisher, 1994; Field and Widmayer, 1981; Harwood, Miller and Irizarry, 1995; Belle, 1982). Maternal stress (Conger, McCarty, Yang, Lahey and Kropp, 1984; McLoyd and Wilson, 1991) and the extent of the familial and social support network (Cochran and Brassard, 1979; Coletta, 1979, 1981) have been shown to influence mother-child interaction regardless of socioeconomic status. These distal factors, specifically the combination of stress and a lack of social support, affect a mother's emotional availability and responsiveness, and thereby the quality of interactions with her child, which in turn may affect the developing affective bond (Egeland and Farber, 1984; Emde, 1983; Halpern, 1990).

As indicated by previous findings, the mother-child relationship can be conceptualized as made up of several domains: internal or dynamic maternal factors, internal child factors, the interface of these internal factors influencing patterns of mother-child communication, and lastly, external or environmental factors that impinge on the dyad.

In this study variables assessed shortly following the child's birth during the perinatal period, and at the child's age of 12 and 18 months, were used as predictors of dyadic competence during a free-play episode observed at the child's age of 18 months. This study included the following as independent variables: the child's attachment behavior during two reunion episodes of a modified Strange Situation procedure at 12 months, (Ainsworth, Bell, Waters, and Wall, 1978), the amount and types of stress experienced by the mother at the perinatal, 12 and 18 month timepoints, the social support network available to the mother at the perinatal, 12 and 18 month

timepoints; and the mother's perception of her child's temperament at 12 and 18 months. The assessment of stress and social support covered the course of the child's first 18 months, and is based on the mother's report at each of the timepoints, therefore accounting for any changes over time.

The assessment of attachment behaviors was based on the Scoring System for Interactive Behaviors, a 7-point dimensional scale of four types of attachment behaviors exhibited by the child (proximity-and contact-seeking behavior, contact-maintaining behavior, resistant behavior, and avoidant behavior); and on the amount of crying during reunion episodes with the mother, as described by Ainsworth and colleagues (Ainsworth, et al., 1978)¹. Stress and social support were measured with nonstandard, semi-structured scales developed for a prior study on multi-risk mothers (Fiks, Johnson and Rosen, 1985). The stress scale measured the reported level of stress experienced by problems in the areas of finances, living arrangements, children, family and friends. The social support network was based on the number of individuals counted on by the mother, and available to help with financial, personal, and health/medical problems. The mothers' perception of her child's temperament was based on questions regarding the consistency of the child's eating and sleeping habits, activities enjoyed by the child, the degree of fussiness and ease of comforting the child.

At the child's age of 18 months, the degree of mutual competence in dyadic interaction while at play was measured using the Parent-Child Observation Guide, or PCOG (Hans and Bernstein, 1990; Hans, Bernstein, and Percansky, 1991). The PCOG is based on Goldberg's

¹ The Scoring System for Interactive Behaviors was reprinted with permission by the publisher.

(1977) concept of mutual competence and codes behaviors of the mother and child that support or encourage mastery of developmental tasks. It is designed for 18-36 month-old toddlers and consists of a parent and toddler behavioral profile that provides separate scores of competence for each, as well as a joint score reflecting the total mutual competence of the dyad.

This research is timely given the sparse information available on the early mother-child relationship of Latino dyads living in the inner city (Busch-Rossnagel, Fracasso and Vargas, 1994). Focusing on dyadic competence is important because of the role it plays in theories concerning the mother-infant relationship, attachment, and subsequent social and emotional development (Belsky, Taylor and Rovine, 1984a; Matas, Arend, and Sroufe, 1978; Pastor, 1981). This study answered the following questions for this sample of low-income Dominican and Puerto Rican mother-child dyads.

- Are the child's attachment behaviors during reunion episodes with the mother strong predictors of the quality of dyadic interaction at a later time point, as has been suggested by the relevant literature?
- Do stress and social support influence the mother's competence in interacting with her child?
- Is the mother's perception of her child's temperament more influential than the environmental factors of stress and social support, in predicting parental competence?
- Which factor, or combination of factors, are the strongest predictors of mother-child mutual competence? Is it internal factors such as maternal perception of the child's temperament, the quality of the child's attachment, or external factors such as stress and social support?

Chapter II

Review of the Literature

The Absence of Attachment: A Historical Overview

“En la Casa de Niños Expositos el niño se va poniendo triste y muchos de ellos mueren de tristeza.” (1760, from the diary of a Spanish bishop; Spitz, 1945). (In the Foundling Home for Children, the child becomes sad and many of them die of sadness).

An interest in children’s reactions to loss and maternal deprivation can be dated back to the 18th century. Observations of the effects on infants of extreme forms of stimulation deprivation were documented as early as 1933, in Austria by Durfee and Wolf (Spitz, 1945, p. 54). They found high rates of psychiatric conditions associated with infants institutionalized during their first year. In the 1940’s, Dr. René Spitz studied institutionalized orphaned infants and the pervasive effects on their development (Spitz, 1945). The severe developmental retardation was manifested in their progressively deteriorating cognitive ability, catatonic behaviors, and inappropriate reactions to strangers. He poignantly described the state of lethargy and depression into which infants who were deprived of stimulation succumbed.

Spitz concluded that institutionalized orphans, especially when hospitalized during early infancy, were most affected by the lack of a relationship with the mother, or a consistent adult figure who could provide verbal and physical stimulation, in comparison to the effects of other positive or negative environmental conditions. Spitz’s work generated efforts toward understanding the importance of the mother-infant relationship, and the consequences of the absence of such an attachment.

A subsequent landmark study by Harlow (1958) investigated Rhesus monkeys raised without their mother. They were placed alone in cages with two stationary mother-figures made of wire. One figure was covered in terry cloth and could be clung to, while the other provided milk from a nipple but could not be clung to. It was found that the terry cloth mother-figure was preferred, was clung to, and sought out in moments of fear, while the wire figure was approached only for nourishment. It was shown that the terry cloth mother-figure provided a significant form of physical and emotional stimulation. It was later found that not all the primates developed normally (Harlow and Harlow, 1969). Many of them were abusive or indifferent to other monkeys, and almost all had sexual problems.

Provence and Lipton (1962), in their comparison of institutionalized infants with home reared infants, were impressed by the developmental delays in the institutionalized children. Although both groups had their basic needs met, the institutionalized infants did not receive social or affective stimulation. They were confined to cribs that allowed little visual or physical contact with the institution's caretakers for the first eight months of life. These infants did not have an early affective relationship with a consistent caretaker. Initially, when the groups were compared after three or four months developmental differences were not noted. Though subsequently, the institutionalized infants began to exhibit their impaired social relatedness to adults, ranging from an absence of stranger anxiety to severe detachment, and catatonic behaviors. The lack of interaction with adults also led to the impairment of language development. The infants were described as being in a state of apparent chronic helplessness.

The observations of these pioneering researchers (Spitz, 1945; Harlow, 1958; Provence and Lipton, 1962) demonstrated the primary significance of a consistent early infant-caretaker relationship, specifically, the psychological and developmental effects of not experiencing appropriate and consistent affective interactions, or “*contact comfort*”, with a caretaker during the first years of life. Without such stimulation, the infant is unable to form attachments to adults, relate socially and appropriately to peers, modulate affect effectively, and in severe cases, does not develop language adequately.

Most importantly, the combined impact of the studies described brought into question the role of secondary drive theory (Lamb, Thompson, Gardner, and Charnov, 1985). Until the early 1950's, the roots of mother-infant attachment were understood according to Freud's theoretical formulations on primary and secondary drive (Freud, 1940). The infant's need for nourishment was considered a primary drive, as well as the main reason why infants interacted with their mother or caretaker. This primary drive was then satisfied by the mother at each feeding.

“Through repeated association of this gratification with the caretaker's presence, she became the focus of a secondary drive, such that the infant came to manifest a desire or drive for interaction with her, even in the absence of food” (Lamb et al., 1985, p.11). This secondary drive was considered the basis of the relationship between mother and infant. This perspective thereby disregarded the role of “*contact comfort*”, the significance of having a consistent caretaker, or the importance of early interactions for appropriate social development. The following section describes the subsequent empirical studies of mother-child attachment.

Evolutionary-Ethological Attachment Theory

John Bowlby, a psychoanalytic psychiatrist developed the theoretical formulation known as evolutionary-ethological attachment theory based on evolutionary biology, ethology, control-systems and object relations theory (Bowlby, 1958, 1969, 1973). Bowlby's premise is that similar to other animals, human infants and mothers have built-in reaction patterns, or complementary behavioral systems, primarily meant to ensure the infant's and species' survival. He argued that attachment and maternal behaviors are innately programmed in humans along the evolutionary trajectory.

Bowlby introduced the theory that infants are programmed with three interrelated behavioral systems (exploratory, wariness-fear, and attachment) that are activated or elicited in unfamiliar settings. *"Exploratory behavior is antithetical to attachment behavior in that it leads the infant toward interesting features of the environment and thus usually away from the attachment figure. If, however, the baby is alarmed, attachment behavior as well as wary/fearful behavior tends to be activated, and commonly (although not invariably) these two systems work in concert"* (Ainsworth et al., 1978, p. 256). Attachment behaviors such as smiling, crying, and reaching are intended to elicit the mother's attention. These behaviors act as releasers of maternal feelings of affection, and are activated to gain the mother's attention, to maintain proximity to her, and thereby ensure the infant's safety. Mothers are also believed to have a biologically based predisposition to respond to the infant's bids for attention, as exemplified by breast feeding, being attentive to and talking to the baby, and handling the baby with affection. The infant's attachment

behaviors are complemented by the mother's maternal behaviors, which in turn reinforce the infant's communicative behaviors.

In keeping with object relations and control systems theories, Bowlby emphasized that during the first year the infant's behavior becomes reciprocally adapted to the mother's response style, especially when she has consistently responded in a contingent and appropriate manner (Lamb et al., 1985). But if the infant experiences a pattern of inconsistent or inappropriate responsiveness on the part of the mother, then the child's proximity-seeking behaviors will have proven ineffective and may atrophy. Over time dysfunctional communication will have adverse consequences for the relationship, as well as for the child's social and psychological development (Bowlby, 1969; Lamb, 1982; Matas, Arend, and Sroufe, 1978; Pastor, 1981; Pine, 1985).

Attachment Studies

The preceding discussion describes empirical studies based on Bowlby's theoretical work. This will be followed by studies of factors known to impact mother-child interaction, specifically, the maternal perception of the child's temperament, stress, and social support.

The Strange Situation

Using Bowlby's theoretical work as the foundation for the structure of her studies, Mary Ainsworth developed a research procedure known as the Strange Situation to assess the quality of the infant's attachment formed toward the mother by the age of 12 months (Ainsworth, 1967; Ainsworth, Blehar, Waters, and Wall, 1978; Ainsworth and Wittig, 1969). It is important to emphasize that attachment is the emotional bond between mother and child, not the behaviors exhibited by the child. *"The existence and nature of the attachment bond are indicated by*

attachment behavior, which may include any behavior that results in a person's attaining or keeping proximity to, or contact with, some specific, preferred individual" (Colin, 1996, p.7).

The procedure was originally designed to assess the way infants use the caretaker as a "secure base" from which to explore in an unfamiliar environment; how infants react to a stranger when accompanied and unaccompanied by the mother; and how they react to brief but stress inducing separations from and reunions with the mother (Ainsworth et al., 1978). Distinct behavior patterns on the part of the child, during the separation and reunion episodes with the mother, were initially identified in a series of four observational studies using 106 White, middle-class dyads in the Baltimore, as well as dyads in Uganda in their natural environment. These behavior patterns were systematically categorized into three main groups indicating the quality of attachment between child and mother.

Ainsworth reasoned that according to Bowlby's formulations, fear or anxiety-provoking situations should elicit proximity-seeking behaviors from the infant, given that the need to have contact with and be protected by the mother would increase. The gradually increasing stress of the procedure would allow the researcher to observe how infants organize their behavior around the mother when distressed. The main premise in this procedure is that differences in maternal sensitivity to the infant's cues and communicative behaviors during the infant's first year should result in differences in the strength and tone of the child's attachment to the mother, as reflected by the particular attachment behaviors (Ainsworth, 1973; Ainsworth, Bell, and Stayton, 1971; Ainsworth, et al., 1978). From the initial studies (Ainsworth, 1967), a list was developed of

attachment behaviors that reflected the *"nature of relationships which have already develop. d"* over the course of the infant's first year (Lamb et al., 1985, p 17).

The procedure is made up of eight 3-minute episodes, as defined by Ainsworth and colleagues (Ainsworth et. al., 1978). Of relevance to this study are episodes number 5 and 8, during which the child is reunited with the mother following a brief separation from her. Prior to episode 5, the child is left in the room with the stranger (a female research assistant), and prior to episode 8 the child is left alone in the room. During episode 8, the expectation is for the child to be more distressed than during the first reunion (episode 5), given that he/she had been left alone in the room. It is expected that the child would be eager to be reunited with the mother.

During reunion episodes 5 and 8, the particular attachment behaviors exhibited are rated for their strength. The four attachment behaviors rated during the reunion episodes are: proximity and contact seeking behavior, contact-maintaining behavior, resistant behavior and avoidant behavior. In this study the amount of crying during the reunion episodes was used as an additional descriptive behavioral variable.

The first two attachment behaviors (proximity and contact seeking, contact-maintaining) reflect a positive quality, in terms of seeking contact with the mother or attempting to maintain direct contact. Through these behaviors the child is able to use the mother in order to calm down; to be soothed by her response to his behaviors. Although attachment behaviors are adaptive in nature, the latter behaviors (resistant and avoidant) reflect a negative quality in terms of relating to the mother by resisting or avoiding contact with her. Despite the child's distress, resistant or avoidant behavior keeps the mother at a distance. These behaviors are believed to reflect the

child's inability to fulfill the desire to have contact with the mother, the child's expectation that the mother will not be a source of comfort, and the child's manner of handling the inherent frustration. The four attachment behaviors are each rated according to a 7-point likert scale, with higher scores indicating a stronger display of that behavior (Ainsworth, et al., 1978). The amount of crying is scored according to the number of 15-second intervals during which it occurs [0-12] (Ainsworth, et al., 1978).

Proximity and contact seeking behavior refers to instances in which the child initiates a contact with the mother, that is effective in eliciting a response from her. For example, as soon as the mother enters the room the child walks or crawls directly to the mother and grasps her hand. Contact-maintaining behavior refers to *"the degree of activity and persistence in the baby's efforts to maintain contact with the mother once he has gained it"* such as clinging when the mother tries to put him down (Ainsworth, et al., 1978, p. 347). Resistant behavior is the opposite of the two preceding behavioral styles. Resistant behaviors are those in which the child actively and/or angrily resists the mother's attempts to greet, interact or console him upon reunion. For example, the child pushes the mother away, wants to be put down, or has a temper tantrum. These resistant behaviors may also alternate with proximity seeking behaviors. Avoidant behavior appears less angry than resistant, but is clearly defensive in nature. Examples are the child ignoring the mother upon reunion by walking or looking away, averting her gaze, or hiding his face despite her efforts to engage him.

Crying during the reunion episodes is understood to be an expression of the distress in response to being separated from the mother, and infants vary in their ability to be calmed upon

the mother's return (Ainsworth, et al., 1978). Crying *per se*, is not problematic, unless accompanied primarily by resistant or avoidant behavior. In such case, it is believed to indicate an elevated degree of distress, and the child's inability to be soothed by his/her ineffective behavioral repertoire. Although Ainsworth's original studies analyzed the amount of crying exhibited throughout all of the episodes of the Strange Situation, researchers have demonstrated that a measure of crying only during the reunion episodes can effectively be used as a single variable (Richters, Waters, and Vaughn, 1988).

Although not used in this study, it is important to note that Ainsworth conceptualized and classified the infants as *securely* or *insecurely* attached according to one of three formal attachment groups known as, (A) insecure-avoidant, (B) securely attached, and (C) insecure-resistant. The type of behavior captured by each of these attachment groups is distinct, yet lies along a continuum of adaptation. The infants considered securely attached (group B) manifest proximity-seeking and contact maintaining behaviors upon reunion with the mother. They typically miss the mother when separated, greet her actively, and are calmed by her presence and physical contact. Infants considered to be insecure-avoidant, or anxiously attached (group A) show little or no distress at separation, tend to ignore or actively avoid the mother upon reunion even if distressed, and appear disinterested in the mother's attempts to engage. Those perceived to be resistant (group C) tend to combine proximity-seeking behavior with angry and rejecting gestures during the reunions. Their reaction to the mother's return appears ambivalent, although they will be quite distressed during the separation period, and are not easily calmed by the

reunion. Within each group (A, B, C) there are gradations of the behaviors described, with a total of eight subgroups.

Several researchers have conducted behavioral analyses using only the dimensional attachment ratings, as opposed to formally classifying the infants as secure/insecure (A, B, C) (Goodman, Hans, and Cox, 1999; Lamb, Hwang, Frodi, and Frodi, 1982; Thompson, Lamb, and Estes, 1982). This study focused on the dimensional attachment ratings of the infant's behavior when reunited with the mother, as a behavioral analysis of the nature of the child's defenses.

As hypothesized by Ainsworth (1973), and her colleagues (Ainsworth Bell, and Stayton, 1971; Ainsworth et al., 1978), the attachment categories (A, B, C) are associated with particular maternal behaviors, or interaction styles. The key aspects of parenting that have distinguished the three attachment categories are maternal interactions considered sensitive, responsive, warm, well timed and mutually rewarding (Lamb, Thompson, Gardner, and Charnov, 1985; Isabella and Belsky, 1991). Children described as securely attached were found to have mothers who consistently respond to their cues in a sensitive manner, were described as more tender when holding the infant, more available and accepting of the child, and as maintaining reciprocal and harmonious interactions. These findings have been supported by subsequent studies (Egeland and Farber, 1984; Londerville and Main, 1981). Mothers of children considered to be insecure-avoidant were found to be insensitive, rejecting, irritable, to avoid physical contact, not to show positive feelings toward their child, and were seen as over-stimulating (Main and Stadtman, 1981; Tracy and Ainsworth, 1981). The mothers of those thought to be insecure-resistant were found to be underinvolved (Belsky et al., 1984b), inconsistent in their responsiveness, understimulating,

and therefore as tending not to demonstrate reciprocal or mutual interactions (Crockenberg, 1981; Sroufe, 1978, 1979).

Probing further into the life of the toddler, studies have focused on their subsequent socio-emotional development in relation to their reported attachment classification. Children classified as securely attached have generally been found to be more competent in terms of engaging in more exploration at one year (Ainsworth, Bell, and Stayton, 1971), being more socially competent in their quality of play, as having better problem solving ability at two years of age (Matas, Arend, and Sroufe, 1978), as demonstrating more social relatedness with peers (Pastor, 1981; Waters, Wippman, and Sroufe, 1979), and as exhibiting more manageable behavior and ego control during preschool (Arend, Gove, and Sroufe, 1979).

This continuum of development, as predicted by attachment security, is believed to be fairly stable over time—both in the child's emotional development with peers, as well as in the quality of the relationship with the mother (Belsky, Taylor, and Rovine 1984a; Egeland and Farber, 1984; Matas, Arend, and Sroufe, 1978; Sroufe, 1979; Waters, 1978). Despite the breadth of attachment studies, it is important to acknowledge several points: findings are predominantly based on White, middle class samples with stable caretaking environments, similar studies of low-income Latino children are not cited in the relevant literature, and it is unknown whether these findings apply to Latino mother-child dyads.

The Strange Situation and cultural differences

The original Strange Situation studies took place in Baltimore and Uganda (Ainsworth, 1967), and were replicated in Germany (Grossman, Grossmann, Spangler, Suess, and Unzner,

1985). Japan (Miyake, Chen and Campos, 1985), and Israel (Sagi, Lamb, Lewkowicz, Shoham, Dvir and Estes, 1985). In the United States, the Strange Situation has predominantly been conducted with middle-class, Anglo and European-American families. In samples of middle-class Anglo and European-American dyads, approximately two thirds of infants are classified as securely attached, and one third is found to be insecurely attached (Ainsworth et al., 1978). This distribution is in contrast to findings with the aforementioned cultures (Germany, Japan, Israel) in which higher proportions of insecurely than securely attached infants were found.

These results strongly suggest that cultural factors influence both the reactions in the testing situation and the interpretations of these behaviors that are warranted. This is applicable to the issues of the present study. A suggestion about these geographical differences offered by Levine and Miller (1990), is that culturally defined experiences related to the laboratory procedure (i.e. playing in an unfamiliar room, degree of stress generated by the physical separation between mother and child, meeting a stranger, and the socialization of reunions with mother) will vary in meaning and intensity by cultural group, and will affect the infant's responses throughout the procedure.

Other researchers have questioned the Strange Situation procedure in terms of the validity of findings for children from other ethnic and cultural groups (Harwood, Miller and Irizarry, 1995; Zayas and Solari, 1994). The debate has centered on questions regarding the varying stress levels experienced by infants from different cultures during the procedure, the socialization of reunion behaviors in different cultures, and the child rearing values and goals exercised by non-Anglo groups. For example, the emphasis and socialization of early autonomy and exploratory

behavior in higher income, Anglo groups is not commonly promoted or valued among the Japanese (Miyake, Chen and Campos, 1985), Puerto Ricans (Harwood and Miller, 1991) and Dominicans (Fracasso, 1987). Instead, mothers from these groups prefer for their child to remain in close proximity to her, will do things for their child as opposed to encouraging exploration, and demonstrate more physical contact with their child (Zayas and Solari, 1994). Similarly, in the classroom Puerto Rican and Mexican mothers were found to prefer their children to be obedient and conforming, as opposed to Anglo mothers who prefer their children to develop autonomous and self-directed activities (Ortiz-Colon, 1985).

As summarized by Zayas and Solari (1994, p 202), *"different distributions of infant attachment classification are linked to cultural variation in parenting behavior and life experiences"*, and furthermore, *"parents' socialization values, beliefs, goals, and behaviors are determined in large measure by what their culture defines as good parenting and preferred child behaviors for each gender"*.

Studies of economically disadvantaged ethnic minority dyads in the U.S., including those of Latino descent, have found larger proportions of infants to be insecurely attached compared to investigations of white, middle class subjects (Vaughn, Egeland, Sroufe and Waters, 1979; Waters, Vaughn and Egeland, 1980; Fracasso, 1987; Fracasso, Busch-Rossnagel and Fisher, 1994; Busch-Rossnagel, Fracasso, and Vargas, 1994). A meta-analysis of low-income American samples of various ethnic groups found that 45%-54% of infants were insecurely attached, although the secure infant is the preferred, or *"modal classification"* across varying income and cultural groups (van Ijzendoorn and Kroonenberg, 1988).

Studies of attachment security focusing primarily on Latino dyads are limited in number. The handful of studies in the literature have characterized low-income, Latino infants as having higher levels of insecure attachment (Fracasso, 1987; Fracasso, Busch-Rossnagel, and Fisher, 1994; Leyendecker, Lamb, Fracasso, Scholmerich, and Larson, 1997; Zepeda, Santos, and Nevarez, 1997). Latino mothers have been found to prefer particular attachment behaviors and styles different from that of their Anglo counterparts (Harwood, Miller and Irizarry, 1995).

Fracasso (1987) and her colleagues (Fracasso, Busch-Rossnagel, and Fisher, 1994) assessed the quality of attachment and maternal interactions in a low-income sample of Puerto Rican and Dominican dyads from New York. Consistent with other studies of low income American samples, these results yielded 50% securely attached and 50% insecurely attached, with 30% designated as avoidant and 20% as resistant. No differences between Puerto Ricans and Dominicans were found in maternal interactions or attachment classifications based on ethnicity, which is not surprising given the cultural similarities in the women's Caribbean background.

Unlike prior studies, Fracasso found differences in security of attachment based on the child's sex. Two thirds of the boys were securely attached, while two thirds of the girls were insecurely attached. This finding was unanticipated by Fracasso. Although possible reasons for the sex-based difference in rates of secure attachment were not provided by the researchers, it can be speculated that sex based socialization practices in Hispanic cultures are reflected in these findings. Much has been written about the clearly demarcated gender roles within Puerto Rican families, the pampering of sons, and the concepts of *Machismo* and *Marianismo* used to define traditional gender roles (De la Cancela, 1986; Gil and Vasquez, 1996; Stevens, 1973; Vasquez,

1994). Although the literature has focused on Puerto Rican families, these gender-defining concepts are commonly believed to apply to all Hispanic groups.

Boys are socialized into the psychosexual code of behavior known as machismo, which defines them as both superior to women, and as having authority over them. Males are encouraged to be courageous, sexually aggressive, are given more freedom of movement, and are expected to be providers and protectors of the family. They are not socialized to demonstrate feelings of emotional pain, nor are they raised to be responsible for domestic duties. "*Machismo is the sum total of what a man should be*" (Gil and Vasquez, 1996, p.7).

In contrast, girls are raised within marianismo, or the marianista framework based on the image of the Virgin Mary. Girls are socialized to be subordinate to men, particularly to those in their immediate family, to be self-sacrificing, take care of others, and remain chaste until their wedding day. They are responsible for all of the household chores, and are given little autonomy throughout their development. "*Marianismo defines the ideal role of a woman*" (Gil and Vasquez, 1996, p.7).

Given this contrast in socialization paths, it may be that mothers are more engaged, allow more autonomy, and are more invested in comforting sons. With girls, mothers may tend to pamper them less, have higher developmental expectations, discourage autonomy, and be more strict when the female toddler misbehaves.

In Fracasso's investigation, among the Hispanic dyads secure attachment was related to the increased use of parental interventions such as "*frequent abrupt interfering pick-ups*" (Fracasso, Busch-Rossnagel, and Fisher, 1994, p. 149) during play activity, while Ainsworth et al.

(1978) related such maternal behaviors to insecure attachments in the Anglo samples.

Leyendecker and colleagues (1997) studied a sample of economically disadvantaged recent immigrants from Central America and assessed particular maternal and infant behaviors at 4 and 8 months in relation to attachment classification at 12 months. A cultural group difference showed that Central American mothers of *disorganized* infants (group D) engaged in more vocal-verbal exchanges than their secure peers, while Euro-American mothers of disorganized infants demonstrated less vocal exchanges than their secure counterparts. This finding, along with those of Fracasso et al. (1994) raise the issue of culture-bound parenting styles which may affect the assigned attachment classifications and reflect the premise that Latino parents are generally known to exhibit more physical contact and interventions (Zayas and Solari, 1994).

Zepeda, Santos, and Nevarez (1997) reported preliminary findings of attachment distributions among three groups of Mexican and Mexican-American mothers of varying income and acculturation levels based on years of residence in the United States. Overall, fifty-one percent of the infants were classified as insecurely attached. The least acculturated mothers reported higher levels of parental stress, in addition to having the greatest proportion of disorganized attachments (group D). They were unclear whether increased stress was a primary contributor to the high rate of insecure attachments in their sample. Despite the income differences, income level did not affect security of attachment, as each of the three groups had high rates of insecurely attached toddlers.

The work of Harwood and colleagues (1995) found that Puerto Rican and Anglo mothers differed in the characteristics they value in children, and the specific attachment behaviors

considered desirable and undesirable within each attachment category. Lower and middle income, Anglo mothers valued qualities such as self-confidence, independence, and individual achievement in a hypothetical situation resembling the Strange Situation; while the Puerto Rican mothers preferred toddlers who demonstrated affection, respectfulness, and proximity seeking. The attachment behaviors preferred by each group reflect and are consistent with the values and socialization goals of their respective cultures.

The studies described above using the Strange Situation procedure to assess attachment security with Latino dyads found high rates of insecure attachments. These studies revealed differences in patterns of attachment behaviors based on ethnicity, immigrant status, maternal parenting styles, preferred toddler behavior based on mother's ethnicity, and gender differences in rates of secure attachment in Latino samples. The findings raise questions as to which low income Latino infants are at risk of developing insecure attachments, the meaning of "insecure attachment" for non-Anglo cultures, and, equally as significant, whether maternal interactions are culturally based. Do the behaviors labeled as "insecure" have the implications for later mother-child relationships that have been found for Anglo samples? If Latinos are raised with the socialization goal of relative enmeshment, not individual autonomy (Canino and Canino, 1980), then a lack of secure attachment in early childhood may not have the same negative implications as those held for Anglo samples. As stated by Garcia-Coll (1990, p. 271), "*we would expect attachment and separation processes to foster interpersonal dependency (rather than autonomy) in these infants and their families*". The following discussions will introduce factors believed to influence mother-child interaction.

Dynamic Maternal Factors: Perception of the Child's Temperament

Characteristics of infant temperament are usually based on and assessed by a caregiver's ratings, in the form of self-report questionnaires or structured interviews (Bates, 1980, 1983; Bates, Freeland and Lounsbury, 1979; Shaw and Vondra, 1995; Thomas, Chess and Birch, 1968). Despite variability in the questionnaires or scales used, and whether parental ratings are supplemented by those of trained outside observers (i.e. nurse, pediatrician), criteria of infant temperament focus on particular dimensions. The standard dimensions assessed are adaptability to novel stimuli or situations, degree of reactivity, soothability, fussiness or irritability, regularity of sleep cycle, problems with eating and digestion, sociability, and predictability (Bates, Freeland, and Lounsbury, 1979; Broussard, 1976; Thomas, Chess and Birch, 1968). Assessments of these factors attempt to capture the infant's general affective and behavioral tone during the first year of life, often with a focus on the degree of "infant's difficultness" or difficult to handle temperament (Bates, 1980; Bates, Freeland and Lounsbury, 1979; Thomas, Chess and Birch, 1968).

There is debate among developmental researchers regarding the accuracy of parental ratings of temperament, (Bates, 1983; Sroufe, 1985). At issue is whether parental ratings of the child's temperament reflects the biologically and innately based traits of the difficult infant, which almost any caretaker would find challenging to handle (Thomas, Chess and Birch, 1968; Thomas, Chess and Korn, 1982). Or instead, whether parental temperament ratings reflect a parent's subjective perception of her child and not necessarily, or primarily, the child's

neurological make-up (Bates, 1980, 1983; Broussard, 1976; Johnson and Rosen, 1990; Plomin, 1982; Sameroff, Seifer and Elias, 1982).

The seminal work of Thomas, Chess and Birch, (1968) identified the factors that define a difficult temperament in infants. Their New York Longitudinal Study investigated the relationships between temperament, parental behaviors and attitudes, and behavior disorders in childhood. Infants characterized as having innate or constitutional tendencies for a difficult temperament were found to maintain a high behavioral activity level, irregularity in their eating, sleeping, and bowel function, negative withdrawal responses to new stimuli, slow adaptation to changes in the environment, intense reactions whether positive or negative, predominantly low threshold of responsiveness or easy to react, frequent negative affect, behavioral and affective persistence, and distractibility (Thomas, Chess and Birch, 1968, p.20). Three infant profiles emerged, the difficult child, the slow-to-warm-up child, and the easy child. Of the 10% in their sample classified as difficult, 70% later developed behavioral problems, compared to 25% of children in the other two categories. Although the researchers agree that a difficult and unpredictable temperament may influence a parent's responsiveness, their primary position is that parental ratings of "difficultness" reflect the infant's true biologically based temperament (Thomas, Chess and Korn, 1982).

In contrast to that position, a transactional perspective is argued for by Bates (1980, 1983) and others (Bates, Freeland, and Lounsbury, 1979; Broussard, 1976; Broussard and Hartner, 1970; Johnson and Rosen, 1990; Plomin, 1982; Sameroff, Seifer and Elias, 1982; Sroufe, 1985). These researchers propose that a parent's subjectivity and contextual factors influence the

perception of their child's temperament, thereby affecting the quality of parental responsiveness, which in turn influences the child's behavior within a transactional model.

Bates argues that because the primary source of information on an infant's temperament are the parent's necessarily subjective opinion, then the concept and assessment of "difficult temperament" should be considered a social perception or social construct (1983). He points out that in studies on temperament, the amount of parent-observer concordance on temperament ratings has been limited; that most of the variance found in parental reports of temperament has not predicted an objective reality of the child's behavior; and that the subjective factors impacting the parent's perception "*ultimately may be more important in social development outcome than the objective within-the-infant factors*" (1983, p. 93). Plomin (1982), in agreement with Bates's position, suggested using the terms "parental accuracy" and "parental construction" to distinguish between the objective and subjective factors inherent in the perception and ratings of their child's temperament.

Although Bates (1983) did not identify the intervening variables affecting a parent's assessment of the child's temperament, his argument refers to the nature of the parent's personality. Under the umbrella of the parent's personality could be included dynamic factors such as, a parent's frustration tolerance level, previous parenting experience, how they interpret the infant's behavior, knowledge about infant development, the parenting role models they refer to, as well as the parenting they themselves had received.

Environmental factors such as stress, living in poverty, and maternal drug use have been suggested as contributing toward a mother's negatively biased perception of her infant, as well as

her responsivity to the child (Johnson and Rosen, 1990). In a comparison of observer ratings and maternal ratings of infant temperament, Johnson and Rosen (1990) found a lack of agreement between the evaluations. More importantly, they found that mothers who rated their infants' responses more positively, were rated more positively in their own responsiveness toward the child by trained observers. They concluded that mothers who found their child easier to handle were able to interact in a more positive and responsive manner with the child.

Similarly, Sameroff, Seifer and Elias (1982) found that a mother's characteristics were the strongest predictors of parental temperament ratings, thereby suggesting that temperament ratings are *"more a result of projections of the parents than of characteristics of the child"* (p.172). Group differences were found between low and middle-income parents in the perception of infant temperament. These researchers reported that low-income white and low-income Black parents more frequently rated their infants as having a difficult temperament. These parents rated their infants as more intense and with a lower threshold to stimulation, than did higher income white parents. The increased perception of infant difficultness among the low-income parent group was described as influenced by the emotional distress related to raising children in a life marked by poverty. Although not delineated by these authors, emotional distress for mothers living in poverty may be influenced by the number of children they are raising, whether they have a spouse or partner to share responsibilities with, the amount of help available to care for the child, and how much time these mothers have at their disposal to play with the child.

Bates, Freeland and Lounsbury (1979) found that first-time, less experienced mothers who were relatively low in extraversion, low in achievement orientation, and had a low

occupational level were more likely to perceive their infant as difficult. They also found that a perception of the infant as fussy-difficult was persistent over time.

The researchers concluded that the mother's perception and objective temperament characteristics of the infant influence one another, and both are important in the child's development. For example, a mother who believes her infant to be difficult may be less flexible in experimenting with different ways of responding to the infant's fussiness, or may misinterpret the causes for the child's upset.

Regardless of their position in this debate, researchers have obtained parental reports of temperament by focusing on the dimensions of temperament as defined by Thomas, Chess and Birch, particularly the regularity or predictability of the infant's sleep and eating cycle, how much the infant will generally fuss/cry, how easily infant is soothed or comforted, and the infant's activity level (Bates, Freeland, and Lounsbury, 1979; Broussard and Hartner 1970; Shaw and Vondra, 1995; Susman-Stillman, Kalkoske, Egeland and Waldman, 1996).

Lee and Bates (1985) investigated the relationship between maternal ratings of difficult temperament when the children were 6, 13, and 24 months with patterns of mother-child interaction at 24 months. They found that mothers of difficult infants used more intrusive and negative control strategies when attempting to control the child's inappropriate behaviors. These ineffective strategies were often followed by resistance in the children. Dyads in which the child was perceived as difficult at 6 and 13 months had more conflict during interactions at 24 months that involved autonomy issues (putting toys away, clean up time). The researchers concluded that

these findings, and the stability of perceived infant difficultness over time "*may be indicative of an overall negative quality of the mother-child relationship*" (Lee and Bates, 1985, p. 1323).

Regardless of whether parental ratings are accurate, or negatively impacted on by subjective and environmental stressors, parental perception of infant's fussiness/ difficultness has been found to be related to later psychopathology in the child. Shaw and Vondra (1995) using the Infant's Characteristics Questionnaire (Bates, Freeland and Lounsbury, 1979) as a predictor of externalizing and internalizing behavioral problems during early childhood, found a positive association between a mother's ICQ scores at ages 1 and 2, and internalizing behavior problems in girls at age 3. The results were less consistent for the boys. Broussard demonstrated consistent findings of later behavior problems (1976). The researcher had Caucasian, first-time mothers of varying socio-economic status rate their one-month infant in comparison to the average infant on crying, spitting, feeding, elimination, sleeping, and predictability. Based on the mother's total score of these behavioral items, with lower scores reflecting more desirable infant behavior, the perception of their infant was considered to be positive (better than the average infant), or negative (worse than the average infant). Infants were categorized as "low risk" of developing later emotional or developmental problems if the mother had a positive perception, or "high risk" of later pathology when the mother had a negative perception. Based on the mother's perception, 60% were placed in the low risk group, and 40% in the high risk group.

These dyads were followed up when the children were four and a half years old. Two child psychiatrists, blind to the infant's placement in the low or high risk groups, conducted clinical interviews of the children and observed them in 25 minutes of free play. Based on these

assessments, the psychiatrists determined which children needed therapeutic intervention for various developmental and emotional problems. Thirty-four were placed in Group I (psychopathology and in need of intervention) and 51 were placed in Group II (healthy). The remaining 35 had either organic disorders, such as brain damage, or required further psychiatric evaluation to determine their diagnosis.

The main study hypothesis was supported. In Group I (psychopathology), 70% had originally been considered at high risk of developing problems based on their mother's negative perceptions of them at 1 month of age, while in Group II (healthy), 76% were originally in the low risk group based on their mother's positive perception of them at one month. Prospectively, of those in the high-risk group, 66% were found to need intervention, while only 20% of infants in the low-risk group were found to require intervention. These results are impressive, given that they were not influenced by the type of delivery, parent's educational level or income, religious affiliation, the mother's age, stressors immediately preceding or following the child's birth, how often the child had been hospitalized, or sex of the child.

The findings were suggestive of two possible theories as interpreted by the researchers. One theory is that assessments made by mothers at one month are accurate indications of the child's innate characteristics they detected early on. A second line of reasoning is that the mother's early perception and expectations of the infant may influence the child's development "*in a self-fulfilling prophecy*" (Broussard, 1976, p.24). Although the authors did not indicate the link between a mother's perception and her child's development, the mediating factor would presumably be parental behavior and the quality of parental responsiveness.

When re-contacted between the ages of 10 and 11, the results for a sample of 70 dyads found that *"the association between the maternal perception of the neonate and the subsequent emotional development of the child has persisted over time and is predictive of the probability of mental disorder"* (Broussard, 1976, p. 91). Of cases in which mothers had a negative perception, only 7.7% were found to be healthy at age 10 or 11. The researchers also found that boys viewed negatively by their mothers were at more of an increased risk of developing problems than the girls. They concluded that *"the absence of a positive maternal perception....is associated with a very high rate of subsequent psychopathology"* (p. 92).

The studies discussed above demonstrated the role of a parent's perception of their infant's temperament on maternal responsiveness and on a child's later emotional and social development, as well as the *"importance of difficult temperaments in initiating poor infant-caretaker relationships "* (Sameroff, Seifer and Elias, 1982, p. 165). Based on this literature, this study compared maternal perceptions of the child's temperament with maternal behavior. Maternal perceptions were assessed at the child's age of 12 and 18 months, as predictors of maternal competence at 18 months during a dyadic free play session.

Environmental Factors: Stress and Maternal Behavior

The negative impact of chronic stress on parenting ability is of concern to researchers, clinicians and professionals working with low-income families. The term "chronic stress" is used by researchers to indicate long-term demographic conditions which may negatively affect a parent's psychological functioning and the effectiveness of their parental behaviors (Conger, McCarty, Yang, Lahey and Kropp, 1984; Halpern, 1990; Longfellow, Zelkowitz and Saunders,

1982; Makosky, 1982). These conditions include low-income status, dependence on public assistance, single-parenting, young maternal age at first child's birth, family size, low educational achievement, and lack of adequate social support or social isolation.

Acute stress measures typically include questions regarding stressful life events such as, problems with employment/finances, health, death/loss, marital discord/divorce, family arguments, change of residence or living arrangements, and accidents (Cochrane and Robertson, 1973; Pianta and Egeland, 1990). Mothers living in poverty have been shown to experience high rates of stress (Conger et al., 1984; Egeland and Farber, 1984; Vaughn, Egeland, Sroufe and Waters, 1979; Pianta and Egeland, 1990) and perceive their living situation as out of control with few available options (Kamerman and Kahn, 1988). In contrast to middle class dyads, poor families tend to experience more stressful events and changes such as job loss, and instability in childcare and living arrangements. Poor mothers tend to report higher rates of stress, and consequently their parental or interactive behaviors with their children have been reportedly compromised.

Conger et al. (1984) studied a sample of White and African American families of varying socio-economic-status. They found that higher chronic stress levels associated with demographic risk factors were positively correlated with aversive maternal behavior, authoritarian child rearing values, lower rates of supportive interactions, and negative perceptions of their pre-school aged child. The demographic conditions accounted for slightly more than half the variance in the mothers' psychological characteristics (emotional distress, authoritarian attitude, and negative perceptions of their child) and almost 40% of the variance in positive and negative maternal

behaviors (derogatory statements, threats, slaps, pushing or grabbing). In particular, a mother's early age at childbirth and a low level of educational achievement consistently predicted potentially problematic maternal behaviors regardless of the sex of the child. Without the wisdom of age, life experience, and helpful information regarding child development and child rearing, these women were at increased risk of resorting to ineffective parenting behaviors.

Egeland and Farber (1984), and Vaughn, Egeland, Sroufe and Waters (1979) studied the relation between stressful life events and attachment status using Ainsworth's Strange Situation procedure at 12 and 18 months among the same poor urban sample in their respective studies. Life events considered stressful in their studies included questions about work, family, neighbors, finances, violence, involvement with the police, and health. The results supported their main hypothesis that *"unstable/stressful environments are associated with greater variability in the quality of infant-mother attachments"* (Vaughn et al., 1979, p. 973).

Instability in living arrangements between the 12 and 18 month visit accounted for the changes in attachment status from secure to insecure, and more frequently so for boys. For dyads in which infants changed from secure to anxiously attached from 12 to 18 months, 70% of the mothers had initially been single but then lived with the father or boyfriend prior to the 12 month visit. These relationships were often disruptive and in some cases violent before ultimately ending prior to the 18 month visit, when there was a reduction of tension in the home. The researchers reasoned that the stress caused by problems in the marital relationship affected the quality of mother-infant interaction by interfering with a mother's emotional resources, time and energy with her child (Egeland and Farber, 1984).

The association between stress in the marital or conjugal relationship, and the negative effect on maternal behavior has also been reported by Pianta and Egeland (1990). Unlike the previous findings that boys' relationships with their mothers were more compromised as a result of stressful living arrangements (Egeland and Farber, 1984), Pianta and Egeland (1990) found that a high degree of stress resulted in a significantly stronger negative impact for girls. Their sample was made up of 80% White, 13% Black, 7% Hispanic or Native American, and 15% mixed racial background families.

The mothers' interpersonal stress during the period covering the child's birth until 18 months was correlated with less cooperative, more insensitive, and more intrusive parenting behaviors for mothers of girls. This pattern among mother-daughter dyads continued at 42 months during an in-laboratory teaching task. In comparison to mother-son dyads, stressed mothers of girls were seen as unsupportive, intrusive and hostile in their interactions. In a transactional fashion, the girls in these dyads tended to show low enthusiasm and persistence during the teaching task, and responded to their mother's attempts in a negative, rejecting and avoidant manner. Although the researchers were unable to tease out the underlying motives for this sex based finding, their results supported the notion that high levels of stress among poor mothers is associated with problematic parental behaviors. Additionally, ineffective parental behaviors have a reciprocal impact on infants' response style. Therefore, stress had both a direct and indirect effect on the infants studied.

Halpern (1990) and others (Maccoby, 1980; McLoyd and Wilson, 1991; Patterson, 1982; Rutter, 1987) have emphasized that *"poverty creates a number of characteristic obstacles to*

attentive and nurturant child rearing" (Halpern, 1990, p.6). These researchers describe ineffective parenting in the larger frame of the totality of the parent's lives. They argue that parents living in the context of chronic stress may be less patient at times, less understanding, less responsive, or maintain more negative perceptions of their children than the parents themselves would like. Despite these findings, it is important to recognize that parenting is multiply determined, and therefore findings relating poverty to ineffective parenting do not apply to all low-income mothers. A woman's individual developmental history, personality characteristics, and psychological resources will serve to aid or hinder her parenting ability (Belsky, 1984; Mondell and Tyler, 1981).

Most studies on the influence of low socio-economic status, maternal stress, and parenting and child behaviors have focused on elementary school-aged children. Pianta and Egeland (1990) have emphasized the need to study the negative effects of maternal stress on the mother-child relationship at earlier periods of development. A small percentage, if any, Latino dyads have been included in studies of stress and maternal behavior.

A point of agreement among researchers is that for the mother, the experience of being supported emotionally mediates the negative effect of stress on her maternal attitudes and behaviors (Conger et al., 1984; Egeland and Farber, 1984; McLoyd and Wilson, 1991; Pianta and Egeland, 1990; Vaughn, Egeland, Sroufe and Waters, 1979). The present study was designed to determine whether and to what degree social support and stress reported by low-income Latina mothers at the perinatal, 12 months, and 18 months timepoints are predictors of maternal behavior and competence at the child's age of 18 months.

Environmental Factors: Social Support and Maternal Behavior

Social support available to parents functions in the form of emotional support, instrumental and material assistance (Belsky, 1984; Cochran and Brassard, 1979; Crnic, Greenberg, Ragozin, Robinson, and Basham, 1983). Emotional support has been defined as love, interpersonal acceptance, empathy, and understanding received from intimate partners, friends or family (Belsky, 1984; Crnic et al., 1983). Instrumental support refers to help offered through advice or information, child-care, and routine or household tasks (Belsky, 1984). Material support refers to help with finances, food, clothing and other material necessities.

Social support has both indirect and direct influences on parenting ability. Belsky (1984) describes direct effects as *"those that are targeted at parental behavior"* (p.87), such as receiving positive feedback about their parenting, or receiving help with caring for the child. Indirect effects of social support *"are mediated by other factors"* (p. 87) and refer to experiences that positively impact a parent's psychological well-being, such as feeling loved and cared for by a spouse/partner (Belsky, 1984). Positive feelings, or experiences, affect the mother's ability to be nurturing to her child (Belsky, 1984).

The positive association between social support available to mothers and parenting behaviors, such as nurturance, effective discipline methods and appropriate child stimulation has been documented (Abernathy, 1973; Cochran and Brassard, 1979; Coletta, 1979, 1981; Pascoe, Loda, Jeffries, and Easp, 1981). Abernathy (1973) found increased role satisfaction, parenting knowledge and competence in mothers involved in a social network. Cochran and Brassard's

work (1979) highlights the notion that the support offered by a social network positively influences mothers' self-esteem and indirectly leads to increased patience and sensitivity in parenting. Pascoe et al. (1981) found that the social support experienced by mothers during their child's infancy, was positively related to the degree of stimulation in maternal behaviors assessed when the children were three years old.

The inverse relationship linking social isolation with dysfunctional parenting has also been documented. Coletta (1979) reported that low and middle-income mothers of preschoolers indicating lower levels of social support were more restrictive and punitive in their parenting style. In more extreme cases, stressful events experienced by mothers lacking in social support have been associated with neglect and child abuse (Garbarino, 1977; Garbarino and Stocking, 1980; Polansky, Chalmers, Bittenweiser and Williams, 1979).

Differences have been noted between the social support needs of married and single mothers. In cases in which the marital relationship is stable, researchers highlight the emotional and instrumental support provided by husbands, and its positive effect on the quality of parenting by mothers (Bandura and Walters, 1959; Belsky, 1981; Crnic et al., 1983; Crouter, Belsky, and Spanier, 1983; Pedersen, 1982; Weinraub and Wolf, 1983). Belsky (1981, 1984) argues that the marital relationship is the main support system for parents, and indirectly has a significant positive impact on parenting.

Weinraub and Wolf (1983) studied a group of well-educated, older, Caucasian married and single mothers of preschoolers for the effects of social support on mother-child interaction. Single mothers were more socially isolated, worked more hours, had less emotional and parental

support, less stable social networks, and received more practical help in the home. For single mothers, optimal mother-child interaction was predicted by increased parenting support, fewer stressful events, and surprisingly, having less social contact outside the home. Outside social contact negatively affected the relationship with their child by reducing the amount of time together, causing stress in the mother's decision to divide up her time, and increased demands for her attention while at home with her child. The researchers stressed the need to specify between different types of social support and its effects on the parenting behaviors of married and single mothers.

Given the above findings, other sources and forms of social support for single, low-income mothers are therefore expected to be of more critical importance, such as the potentially supportive role of family members, friends, neighbors and community organizations. Latinos in particular tend to belong to strong support networks via the extended family (Canino and Canino, 1980; Zayas and Halleja, 1988). Of note, Belle (1982) has pointed out that often the environment in which low-income mothers exist is made up of sources of social support who are themselves likely to be struggling with poverty-related stressors.

In summary, higher rates of social support are positively associated with effective maternal parenting behavior for both single and married women regardless of income or racial identity. Crnic et al., (1983) note that few studies have examined the joint effects of maternal stress and social support on parenting behaviors during infancy. Crnic et al. (1983) studied the effects of stress and social support on the mother-infant relationship at one and four months of age. The results indicated that higher maternal stress accompanied by low social support was

positively correlated with low satisfaction with the parenting role. Additionally, the mothers who perceived themselves to be unsupported and dissatisfied were found to be less positive and less responsive to their children. The present study investigated the separate and joint effects of stress and social support at the perinatal, 12 and 18 months timepoints as predictors of maternal and dyadic competence at 18 months.

Mutual Competence: Mother-Child Dyadic Competence

Terms such as synchrony, interactive, reciprocal, and harmonious have been used in referring to the mother-child dyad's ability to communicate in effective exchanges that are mutually rewarding (Brazelton, Koslowski, and Main, 1974; Goldberg, 1977; Kochanska, 1997; Leyendecker et al., 1997). Contingently responsive and effective interactions by both the mother and child are essential toward creating mutual "feelings of efficacy", or mutual competence as described by White (1959) and Goldberg (1977).

The development of competence during early childhood plays a significant role in the psychological development of the child. Competence in the child contributes to a general sense of self as effective (Emde, 1983), the ability to trust others (Erikson, 1963), intrinsic motivation in learning and exploring (Hunt, 1961), and is found to be associated with secure attachment (Ainsworth et al., 1978; Isabella and Belsky, 1991; Isabella, Belsky, and von Eye, 1989; Blehar, Lieberman, and Ainsworth, 1977; Matas, Arend, and Sroufe, 1978). Child competence in these areas is believed to lead to healthy self esteem and positive object relations which will guide the child's later productive functioning in the world (Mahler, Pine, and Bergman, 1975; Slade and Aber, 1992; Stern, 1985).

Attachment studies generally focus on particular maternal and attachment behaviors. Behaviors routinely rated for maternal involvement represent the mother's ability to provide a "secure base" for the child's exploratory play, as well as the mother's involvement and attentiveness (Ainsworth et al., 1978; Matas, Arend, and Sroufe, 1978) which promotes the child's competence. The behaviors often include contingent responsiveness to the child's behavior, talking to the infant, showing a toy or stimulating object, initiating physical contact such as touching, holding or kissing, and acknowledging the infant visually or by facial expressions (Leyendecker et al., 1997; Lewis and Wilson, 1972; Field and Widmayer, 1981). Johnson summarized the nature of maternal interactions for effective communication as "*care that is responsive, predictable, consistent, and guided by developmentally appropriate expectations*" (Johnson, Nusbaum, Bejarano, and Rosen, 1999).

Attachment behaviors typically rated for the infant's involvement with the mother represent the child's ability to interact effectively and adaptively. The behaviors include smiling, vocalizing, maintaining eye contact, being engaged with the mother at play, and responding to the mother's interactions (Messer and Lewis, 1972). As the infant matures the targeted behaviors under study also increase in complexity (Farran and Ramey, 1980).

Studies have found stability in the patterns of reciprocal exchanges established early in infancy. Belsky and colleagues (1984a, 1984b) conducted a longitudinal study with a White, middle class sample to investigate whether patterns could be found within the first nine months of infancy. Dyads were observed at three time points (1, 3, and 9 months) and were found to maintain the same frequency of interaction across time, referred to as "*the stability of*

reciprocity". Dyads that were engaged in high rates of reciprocal interaction at one and three months, exhibited similarly high rates at nine months, in comparison to pairs that demonstrated low rates at all three time points. Their results illustrated both individual stability of dyads over time in the frequency of interaction, as well as stability in the nature or tone of the emerging relationship. As described by the researchers, "*even as behavioral interactions change, the relationships that they serve are likely to remain the same*" (Belsky, Rovine, and Taylor, 1984b, p.708).

Assessments of mother-infant interaction are typically conducted either in subjects' homes, or in relatively unstructured sessions in a laboratory playroom. A commonly used observational technique in the laboratory is the free-play session which "*allows dyads to pursue diverse activities while presenting comparable opportunities for interaction*" (Leyendecker et al., 1997, p. 43; Kochanska, 1997). It is used to assess the dyad's communicative style, quality of interactions during play activities, as well as the infant's cognitive and attentional capacities. The free-play session usually takes place in a spacious room, with age-appropriate toys and objects available. Usually few instructions are given to the mother, except to behave or act with her child as she normally would at home. It is believed that mother's and infant's play and interactive styles in this laboratory situation resemble their behaviors at home. The technique is an attempt to replicate the home environment, to "*maintain high ecological validity*" (Messer and Lewis, 1972, p. 296).

Studies of Dyadic Interaction: Low-income Latino Groups

Longitudinal studies of dyadic competence with Latinos are limited in the literature. Among young scholars, there is an interest in studying parenting within Latino groups, as evidenced by several unpublished doctoral dissertations on the subject (Chodos, 1988; Fracasso, 1987; Ortiz-Colon, 1985; Planos, 1993; Richman, 1983; Vargas, 1991).

Among the studies of Puerto Rican, Mexican, and Hispanic mothers of other cultures are investigations of the various factors impacting maternal behavior and child-rearing styles, such as educational level (Richman, Miller and LeVine, 1992), parenting by adolescents (Garcia-Coll, 1988), effect of social support (Wasserman, et. al., 1990), migration history and acculturation issues (Field and Widmayer, 1981; Gutierrez, Sameroff, and Karrer, 1988), and culturally sanctioned beliefs about child development and socialization goals (Gutierrez and Sameroff, 1990; Harwood, 1992; Harwood, Miller, and Irizarry, 1995).

Investigations of differences in maternal response style based on social class status are more common in the literature. These studies of dyadic interaction have demonstrated a positive correlation between a mother's social class and the frequency of verbalizations to the infant (Feiring and Lewis, 1981; Tulkin, 1977; Tulkin and Kagan, 1972). As income level increases, so does the amount of the mother's verbal responses to infant's vocalization, verbal imitation of her child, and verbal responses to the child's cries or frets. These differences were found when the dyads were observed in the subject's homes, as well as in the laboratory. The difference between middle and lower income mothers in the degree of verbal stimulation directed at their infants is a well-established finding.

Richman, Miller, and LeVine (1992) were able to measure the impact of education on maternal interactions while holding income level constant in a sample of Mexican dyads living in Mexico. With increased education, mothers increased their use of verbal stimulation toward their infants at the three age points examined (5, 10, 15 months). Maternal behaviors were coded for looking, talking, holding, touching and feeding in response to the infant's vocalizations, the infant's crying, and when looking at the mother. Overall, the mothers tended to respond by looking at their infant, and then intervened with more active behaviors.

The results revealed a schooling-related pattern of maternal responsiveness. With more schooling, the mothers talked and looked at their child, and held the infant less. By ten months, *"carrying on conversational exchanges had become an important part of maternal care"* for the mothers with higher educational levels (Richman et al. 1992, p. 619). The researchers concluded that *"the school experience provides women with verbal skills and models of adult-child verbal instruction that they would not acquire without schooling and that are carried forward into the way they care for their infants"*, and furthermore, *"schooling inadvertently constitutes socialization for a particular kind of mothering involving early reciprocal vocalization, that engages mother and infant in a long-term relationship based on verbal communication"* (Richman et al. 1992, p. 620). With increased education, mothers tended to be less physical in their response style, and therefore more physically distant from the infant given that maternal responses are mostly verbal in nature. Similar results were found in studies with Chicanos in the United States (Laosa, 1980, 1982).

Along with differences in maternal behavior, differences in the infant's communicative behaviors have also been found in relation to social class status. In a comparison of White dyads, Messer and Lewis (1972) studied low income, 13-month old infants in a free-play session with their mothers. Their results were compared to those of an earlier study that also used the free-play situation to observe middle income dyads. The low income infants vocalized significantly less to their mothers than their middle income counterparts, suggesting that the limited verbal stimulation by low income mothers is associated with a correspondingly restricted degree of verbal expression by their infants.

Investigations of racial, ethnic and social class differences, with respect to the amount and quality of dyadic interaction, have not been consistent in their findings. A frequent omission in studies of low-income, ethnic families is the lack of description by the researchers of the subjects' ethnic heritage. Findings for a particular low-income sample of Latino subjects from one nationality are often generalized to all Latinos overall. The diversity within Latino families of varying cultures has often been ignored or missed.

The Census Bureau, as well as psychologists and other behavioral researchers, have tended to oversimplify ethnic nationality by "*lumping people under a short menu of skin colors*" (APA Monitor, December, 1998, p.26). It was not until 1978 that the National Center for Health Statistics identified Hispanics other than those of Puerto Rican descent (Wasserman et. al., 1990). Research has been limited to studies of Puerto Ricans and Mexicans, creating broad categorizations and, thereby, facilitating the perpetuation of stereotypes and misperceptions (APA Monitor, December, 1998). Moreover, when Mexicans and Puerto Ricans are studied, it is usually

in comparison to non-Hispanic White samples. Within this framework, the observed differences between groups have been minimized, and also interpreted, or implied, as being deficits in the minority populations (Garcia-Coll, 1990; Zayas and Solari, 1994).

In a comparative study of a low-income sample including African-Americans, Cubans, Puerto Ricans and South American immigrants, researchers investigated whether social class or ethnicity, is the more critical determinant of differences in maternal behavior during a feeding and face-to-face interaction at three months of age (Field and Widmayer, 1981). The findings were significant for differences in maternal behavior based on race, between the Black and Latino mothers; as well as differences between the various Latino groups. Unfortunately, the sample size was limited, so that a small number of dyads represented each ethnic group.

The principal behavior that differentiated the groups was the amount of verbal stimulation by the mothers. In rank order, Cuban mothers talked the most to their infants, followed by South American, Puerto Rican, and Black mothers. Unlike previous studies (Tulkin, 1977; Field, 1980), the researchers found that taken as a group these low-income mothers were not all "*nontalkative or inactive*" (Field and Widmayer, 1981, p. 59) with their infants. Instead, the mothers had particular socialization goals based on their ethnic background and beliefs about child development. For example, Cuban mothers tended to emphasize teaching, and therefore talked a great deal of the time, and counted or recited the alphabet to their infants. The Black mothers reported that frequent talking to, praising, or holding a child would spoil him or her, and therefore did not give "*too much attention*" (p. 49). This main finding highlights the importance

of not generalizing about the parenting style of all low income mothers, without regard for their racial or ethnic heritage and the relevant childrearing beliefs to which they adhere.

Within the Latino groups, although Cuban mothers spoke to their infants the most, the more optimal mutual interactions observed were among the Puerto Rican dyads. In comparison to the others, the Puerto Rican mothers engaged in more infantized behaviors, spoke to their infants less but were contingently responsive, and played more baby games. Whereas the Cuban infants tended to monitor the over-stimulating effects of their mother's talking by looking away, the Puerto Rican infants showed less agitation, were more physically relaxed, and averted their mother's gaze least often. Therefore, the Puerto Rican dyads were mutually engaged more often than any other group. These low-income Cuban, Puerto Rican, and South American mothers exhibited less baby talk, but more frequent and longer speech utterances, less game-playing, more singing, an acceleration of their activity level when the infant fussed, and more verbal and physical activity during feedings when compared to findings with middle income, White American mothers.

A suggested contributing factor to the differences among the Latino groups was the number of years they had been living in the United States. The more optimal interaction ratings were for the Puerto Rican mothers who had resided in this country the longest, while the least optimal ratings were assigned to the South American mothers who had been in this country the least number of years. As a group, the South American families had the least prestige within the Latino, as well as the host community. It was hypothesized that the Puerto Rican mothers were

more acculturated, and may have felt more comfortable in the laboratory situation with the White researchers.

The degree of acculturation and length of time in the United States were also found to be influential factors in the teaching behaviors of Mexican-American (Laosa, 1980), Puerto Rican and Dominican mothers (Planos, 1993; Vargas, 1991). In comparison to Anglo mothers, the Mexican-American, Puerto Rican and Dominican mothers used more modeling, visual cues, directives, and negative physical control while teaching, whereas Anglo mothers used more verbal inquiry and praise. With increased acculturation and length of residency in the United States, Puerto Rican and Dominican mothers were found to increase their use of praise and inquiry, and thereby approximated the behavior of Anglo mothers (Planos, 1993).

This finding can be understood within the context of the experiences associated with migration and the inherent stress. More recent immigrants are burdened with the stressors related to adjusting to a new country and society, including *"economic and legal uncertainty, language difficulties, ineligibility for many social services, loss of traditional sources of informal support, and in some cases, discrimination and exploitation"* (Halpern, 1990, p. 13). The effects of such a situation impinge on mothers' internal resources and parenting ability (Emde, 1983), contributing to the use of more authoritarian behaviors toward their children (Halpern, 1990; Planos, 1993; Zayas and Solari, 1994). Therefore, with increased stability and adaptation to American society, and less overall stress, Latinas are able to be more attentive in their parenting and teaching behaviors.

With regard to the finding of increased physical activity with their children, it is by now commonly known that Latino families exhibit closer mother-child relationships, and more open verbal and physical expression of parental affection than Euro-American families (Escovar and Lazarus, 1982; Zayas and Solari, 1994). It has been suggested that frequent maternal affection and physical protection of children is especially beneficial given the current climate in the inner city neighborhoods in which many Latino families reside (Zayas and Solari, 1994).

Socialization of Latino Children

Particular socialization goals have been found to support the parenting practices of poor ethnic minority mothers (Halpern, 1990). Unlike White middle-income families, minority families are concerned with instilling survival skills in their children (Harrison et. al., 1990). Latino parents strive to instill in their children qualities necessary for survival and success both in their immediate environment and society at large. From an early age and throughout their development, Latino children are taught that the family is a priority and principal area of their life. The hierarchy within the family is clearly demarcated, and parental authority is not to be challenged (Zayas and Solari, 1994). This socialization goal labeled "familism" is considered to be an adaptive strategy meant to maintain family solidarity and instill a sense of obligation to the family (Zayas and Palreja, 1988).

The family is understood to include extended family members, so that it is common for children to have multiple caretakers. Although the child may be reared within a group of mother-figures, a strong fundamental bond with the natural mother, or primary caregiver is standard, particularly during the early years. For ethnic minorities, the extended family can be critical to

survival and adaptation as a problem-solving and stress-coping system (Wilson, 1989). Especially for single mothers, the extended family can be a significant resource.

Within an atmosphere of familism, interpersonal relatedness is highly valued. A study of parental beliefs about children's academic performance reported that immigrant parents from Mexico emphasized noncognitive skills such as motivation, social skills, and practical school skills, as being equal or more important than cognitive abilities such as problem-solving, verbal skills, and creative ability. In direct contrast, the Anglo parents stressed the development of cognitive skills over social skills (Okagaki and Sternberg, 1993).

These results are consistent with the findings of Harwood, Miller, and Irizarry (1995) which demonstrated that Anglo-American and Puerto Rican mothers differ in the long-term socialization goals, the characteristics they value in children, and specific attachment behaviors considered desirable and undesirable in toddlers. Both lower and middle income, Anglo mothers valued traits in toddlers having to do with autonomy, personal development and self-control. These traits included qualities such as self-confidence, independence, and individual achievement, which are consistent with the values and socialization goals in North America. In contrast, Latino culture is referred to as being sociocentric, or valuing "personalism", a tendency to focus on relationships rather than tasks (Levine and Padilla, 1980). Therefore, the Puerto Rican mothers favored traits such as affection, respectfulness, and proximity seeking. In keeping with their culture's values, the Puerto Rican mothers sought to instill a sense of interpersonal obligation and personal dignity in the children.

It has also been suggested that obedience is encouraged, while curiosity is discouraged in Hispanic families (Halpern, 1990). It was reasoned that this is so given "*the dangerous circumstances in which such families live leave little room for mistakes in judgment on the part of their children*" (Halpern, 1990, p 13). The family acts as a source of protection and support, considering the limited opportunities for assistance in the new host community. Escovar and Lazarus (1982) also reported less of an emphasis on self-reliance and more on receiving support from the family.

Related to parental authority, Latino families place an emphasis on strictness. Within a low-income sample of Dominican, Puerto Rican and African American mothers, the Latino mothers were found to be more strict than African Americans in their child-rearing attitudes (Wasserman et al., 1990). In particular, Dominicans scored higher than Puerto Ricans on dimensions of aggravation and strictness (p. 577). When compared to non-Hispanics and African Americans, Thomas and colleagues (1974), found that Puerto Rican mothers expected more strict adherence to their commands and complained more often about disciplinary problems. Strictness in childrearing among Latinos has been reported by others (Chodos, 1988).

Maternal behaviors of Latinos should be viewed and interpreted within their cultural and class based socialization goals. Unlike Anglo, middle-class parents, Latino parents living in poverty have different demands and crises in their everyday life which "*require different parental care and nurturance strategies*" (Halpern, 1990, p.7). Among the detrimental effects related to living in poverty described by Halpern and others (1990; Belle, 1982) are overcrowded housing, poorly maintained buildings, living in violence ridden neighborhoods, single motherhood,

increased marital conflict, a tenuous social support network given their family or peer's similar life difficulties, poor nutrition, chronic stress, and high levels of maternal depression. In addition, many families endure the insidious stress of living in the United States as undocumented immigrants, with poor language and job skills, and the inherent discrimination. The cumulative effect of these factors, and the chronic strain of managing the negative stereotypes regarding their ethnicity, impacts the parenting ability of Hispanic mothers (Harrison et. al., 1990; Laosa, 1979).

In summary, the relevant parenting practices of low income Latinos toward their young children have emphasized gender based roles, obedience to parental authority, strictness, physical teaching behaviors (such as modeling, visual cues, directives) in contrast to verbal inquiry, and more open verbal and physical expression of parental affection. These parental behaviors are mediated by the degree of acculturation, length of residence in the United States, legal or documented status, level of stress, social support network and education. This information is based predominantly on studies of Mexican and Puerto Rican families.

The present study assessed the amount of stress and social support as reported by the mothers at the perinatal, 12 and 18-month timepoints for their impact on dyadic competence at the child's age of 18 months. At 12 and 18-months, the mother's perception of the child's temperament was also treated as a predictor. This design made it possible to account for changes in the mother's life during the child's first 18 months, in terms of stress, social support and her perception of the child's temperament as related to dyadic competence.

On behalf of the child's role, the quality of attachment behaviors exhibited at 12-months during both separation-reunion episodes of the Strange Situation (proximity and contact seeking,

and contact maintenance) were used as predictors of dyadic competence at 18 months. The ability to use the mother as a secure base following brief separations is believed to reflect an adaptive and competent toddler, as a result of effectively responsive and caring parenting. If that is the case, the child could be reasonably expected to maintain mutually rewarding dyadic interaction at a subsequent timepoint. This study design is conceptually similar to previous studies (Waters and Sroufe, 1983; Matas, Arend and Sroufe, 1978).

The present study's findings may be helpful to professionals working with Puerto Rican and Dominican families, such as educators, social workers, counselors, psychologists, pediatricians, and parenting skills training leaders. Studies have found that patterns of *"maternal nonresponsiveness, interference, lack of positive affect or hostility as well as lack of infant responsiveness, initiation, or positive affect are important markers of potential developmental problems"* (Bernstein, Jeruchimovicz and Marcus, 1986, p. 640). Therefore, assessing prototypical low-income, Dominican and Puerto Rican mother-child dyads during early childhood may provide useful information for work with these families.

Study Hypotheses

The following hypotheses were tested.

1. There will be a positive relationship between higher levels of the positively valued attachment behaviors (proximity and contact seeking, and contact maintaining) during the reunion episodes at 12-months and parental competence at 18-months.

2. Higher rates of stress, a lack of social support, and a perception of the infant as difficult, as indicated during the perinatal, 12 and 18-month interviews, will be related to lower parental competence at 18 months.
3. There will be a positive relationship between parental and child competence at 18 months, reflecting mutual dyadic competence.

CHAPTER III

Method

Participants

The participants were a subsample of women and their children drawn from a completed longitudinal study, known as the Mother-Infant Program at Columbia Presbyterian Hospital in New York City. The study was funded by NIDA, the National Institute on Drug Abuse and followed the neurobehavioral development of infants born to women living in poverty, with a history of prenatal drug abuse during pregnancy. Data were collected upon recruitment, which for most of the women was just after childbirth, and at each 6-month visit thereafter until the child reached 2-years of age. For this study, a non-random Latino subsample was selected from the control group of non-substance users with data available at baseline, 12 months and 18 months, and in which the biological mother was identified as the primary caregiver. Non-drug users were selected in order to avoid confounding intervening factors and thereby, reduce potential measurement error in the analysis to be presented.

There were a total of 109 Dominican and Puerto Rican non-drug-using women initially enrolled at baseline. At the 12-month visit, 67 cases were retained, and by the 18-month visit the retention rate was slightly more than half, or 59 cases (17 Puerto Rican, 42 Dominican). Of these, 23 dyads met the criteria listed above and were included in this investigation. Nineteen are Dominican and four are Puerto Rican. The remaining cases were not selected as a result of missing data, foster care placement of the child, change in caretakers from one clinic visit to the other, or technical problems with the videotaped measures.

Demographic characteristics were obtained during the perinatal interview, which is the mother's first clinic visit either prior to, or shortly after the birth of her child. In all of the tables presented, the sample size is 23 unless otherwise indicated. The following demographic information is summarized in Table 1: the mothers' age, educational level by the number of years of school attended, age at which she had her first child, number of biological children, number of years living in the United States. These results are listed by their respective mean, median, standard deviation and range. Table 1 also indicates the mothers' place of birth, primary language spoken, marital status, and living arrangements at the time of the perinatal interview, listed as frequencies and percentages.

The participants' mean age was 27.48 (SD=5), with a range from 20 to 41. The majority of the women, 17 out of 23, were born in the Dominican Republic though 19 self-identified as Dominican. One of these women was born in the United States, the other in Puerto Rico. For the most part the women were not recent immigrants, as the mean number of years in the United States was 16.33 (SD=7.5), with a wide range of 3 to 26 years. The use of Spanish and English was obtained by inquiring about the first language spoken, and the language primarily spoken with friends and family. More than half, or 14 women, were monolingual Spanish, while 4 were bilingual, and 5 indicated that they spoke primarily English. All of the participants identified their religious background as Catholic.

Overall, the full sample consisted of women who were not legally married and did not live with a male partner during the perinatal period. Three were married, three were separated, and the remaining seventeen had never been married at the time of enrollment in the study. Given

TABLE 1
Child's Mother: Demographic Characteristics (n=23)

	Mean	Median	SD	Range
Age	27.48	28	SD= 5	20-41
Educational level (# years)	10.65	11	SD= 2.2	6-14
Age at first pregnancy	19.82	20	SD=4.1	14-31
Years in U.S.	16.33	17	SD= 7.5	3-26
Number of children	1.65	2	SD=1.2	0-4

	Frequency	Percent of Mothers
<i>Place of birth</i>		
United States	4	17.4%
Puerto Rico	2	8.7%
Dominican Republic	17	73.9%
<i>Primary language</i>		
Spanish	14	60.9%
English	5	21.7%
English-Spanish	4	17.4%
<i>Marital Status</i>		
Never married	17	73.9%
Married	3	13.0%
Separated	3	13.0%
<i>Living arrangements</i>		
With male partner	5	21.7%
Family/friends	12	52.2%
Alone	6	26.0%

the role of the extended family among Latinos, 12 of the women were living with family and/or friends, 5 lived with a male partner, which may or may not have included other relatives. In these five cases, the partner was the father of the baby. Six mothers reported living alone with their children (without family or friends) but with help readily available. These living arrangements at the time of the perinatal interview were considered stable by 18 women, and temporary by five.

The sample was characterized by early pregnancy and limited formal education. Eleven of the women became pregnant during adolescence, and of these, 10 dropped out of high school due to the pregnancy. The mean level of education was 10.65 years ($SD= 2.21$), with a range of 6 to 14 years. Therefore, the average participant did not receive a high school diploma. The mean age at which a woman had her first child was 19.82 ($SD=4.13$), with a range of 14 to 31. The majority of the women had more than one child at the time of enrollment, not including the study baby. The mean number of children from previous pregnancies was 1.65 ($SD=1.23$), with a range of 0 to 4 children for 18 of the women. For five women, the study child was their first-born. Mother-child dyads consisted of 11 girls, and 12 boys. In all 23 cases, the study child lived with the mother. No additional children, aside from biological children lived with the women.

Table 2 lists the participant's occupational characteristics and work history based on the three years prior to enrolling in the study. This information is provided in the form of frequencies and percentages. In terms of occupational preparation, eight of the women completed job training or technical education. A total of 19 had some work experience over their lifetime. The types of jobs held by the women included unskilled (such as food service), skilled (word-processing), and

TABLE 2

Child's Mother: Occupational Characteristics and Services Received (n=23)

	Frequency	Percent of Mothers		
Job Training	8	34.8%		
<i>Occupational History (past 3 years)</i>				
No regular employment	5	21.7%		
Steady unskilled/skilled	9	39.1%		
Sporadic unskilled/skilled	8	34.8%		
Professional career	1	4.3%		
<i>Main sources of income</i>				
*Sources are not mutually exclusive				
AFDC	14	60.9%		
Job	1	4.3%		
Husband/partner	4	17.4%		
Family member	3	13.0%		
Other means of support	3	13.0%		
<i>Services received during past year</i>				
FDST	14	60.9%		
AFDC	13	56.5%		
WIC	13	56.5%		
Child welfare agency	5	21.7%		
Social worker	4	17.4%		
Counseling/therapy	3	13.0%		
WINS	3	13.0%		
Acupuncture	8	34.8%		
	Mean	Median	SD	Range
Number of Dependents	2.09	2	1.53	0-6
Monthly Income	392.25	321.50	338.23	0-1628
Key: AFDC= Aid to Families with Dependent Children				
FDST= Food Stamps				
WIC= The Women, Infants and Children Program				
WINS= Women in Need Services				

professional in one case. During the previous three years, 5 had not been employed, 8 had worked sporadically, 9 had steady employment, and 1 had a professional career. A total of four worked during their recent pregnancy.

Given that the sample is of low-income status, more than half the women received public assistance. As the main source of income, 14 received Aid to Families with Dependent Children (AFDC), 1 was employed, 4 were supported by their husband or male partner, 3 were supported by a family member, and 3 relied on other means of support which was not specified. The sources of income listed are not mutually exclusive, therefore a few of the women relied on a combination of these. In addition, 14 received foodstamps (FDST), and 13 received services from the Women, Infants and Children Program (WIC). None of the women received disability or housing assistance.

Monthly income including all sources of income and public assistance ranged from none to \$1,628. The median monthly income was \$321.50, which is a more accurate figure than the sample mean of \$392.25 (SD= 338.23). The mean was affected by an outlier figure of \$1,628 in the case of one participant. The mean number of dependents was 2.09 (SD=1.53), with a range of 0 to 6. The mode was three dependents, for seven of the women.

Several of the women accessed therapeutic services. Five received services at a child welfare agency, four were treated by a social worker, three were in counseling or therapy, three participated in the WINS (Women in Need Services), and eight received acupuncture. All of the women denied involvement in any illegal activity. Out of the 23 women in the study, only ten were asked, and all denied ever being in jail.

Although only mothers participated in the study, information on demographic and social characteristics for the children's fathers were obtained. Table 3 provides their age, educational level, place of birth and occupational history during the prior three years. The fathers' mean age was 31.70 (SD=6.76), with a range of 22 to 50. Three of the men were born in the United States, 2 in Puerto Rico, 16 in the Dominican Republic, and 2 in other regions. Nearly three-quarters of the men were ethnically identified as Dominican, 3 as Puerto Rican, 1 Cuban, 1 African American, 1 Black (other than African American), and 1 as other-Hispanic.

TABLE 3
Child's Father: Demographic Characteristics (n=23)

	Mean	Median	SD	Range
Age	31.70	31.00	6.76	22-50
Years of School (n=13)	10.54	12.00	2.90	5-14
	Frequency		Percent of Fathers	
<i>Place of Birth</i>				
United States	3		13.0%	
Puerto Rico	2		8.7%	
Dominican Republic	16		69.6%	
Other	2		8.7%	
<i>Occupational History (past 3years)</i>				
No regular employment	6		26.1%	
Steady unskilled/skilled	14		60.9%	
Sporadic unskilled/skilled	2		8.6%	

Information on the fathers' educational history was missing for almost half the sample. In 10 cases, the women did not know this information. Based on information provided for 13 cases, the mean years of school completed was 10.54 (SD=2.90), with a range of 5 to 14 years. The median number of years was 12, in six cases. The occupational history over the previous three years for more than half the men was steady skilled and unskilled labor in 14 cases, 2 had sporadic skilled and unskilled jobs, and 6 had no regular employment. Occupational information was missing for one case. In 4 of these 22 cases, the men had served time in jail.

Procedures

Participants were primarily recruited from Columbia Presbyterian's maternity ward following delivery, and when possible from the prenatal and high-risk prenatal clinics. Data were collected upon recruitment, which for most of the women was just after childbirth, and at each 6-month visit thereafter until the child reached 2-years of age. For the subsample chosen for this study, data from the perinatal or baseline interview, and interviews at 12 and 18 months of age were used. The participants signed consent forms approved by Columbia Presbyterian's Institutional Review Board. In return for participating in the longitudinal study, the infants received regular well-baby care services for the duration of their enrollment in the study provided by a neonatologist and nurse practitioner. In addition, the infants were seen for emergency medical visits when necessary. These services were without charge to the mothers.

The participants were interviewed by trained research assistants. The interviews gathered information on the demographic and social characteristics of the participants as well as the child's father. For the purpose of this study, the data obtained included psychosocial information, such as

social support networks, amount of stress, mothers' perception of their child's temperament, and questions about the women's relationship with the baby's father. Each of the measures will be described below with references to the appropriate appendices. The interviews were semi-structured and administered by bilingual research assistants when necessary.

Behavioral data, such as videotaped reunion episodes of the Strange Situation procedure at 12 months and videotaped 10-minute free-play sessions at 18 months, were also obtained by bilingual research assistants when appropriate. Videos of the separation/reunion episodes at 12 months were coded by an outside rater, blind to the study design and hypotheses. The rater, Stephen A. Ruffins, Ph.D., is a clinical psychologist trained at the Institute of Child Development at the University of Minnesota. The Institute of Child Development conducts extensive workshops on the coding of attachment behavior using the Strange Situation paradigm, according to the standards set forth by Ainsworth and colleagues (Ainsworth et. al, 1978). Videos at 18-months of mother-child dyadic play were rated by this writer and a fellow research assistant, both doctoral candidates trained in the administration of the Parent Child Observation Guide (PCOG). Both were trained in the administration of the PCOG, a clinical instrument used to assess dyadic competence by Victor Bernstein, co-developer of the PCOG. All coders were blind to the study hypotheses.

For this study, predictor variables were collected at the perinatal interview, and at the 12 and 18-month interviews; the outcome variables were collected at 18-months. The brief period of time between these age points increases the confidence in making connections between the predictor variables and the outcome variables (Bell, 1992). This short time period may allow for

fewer confounding factors to interfere with the predictive relationship, but it also reduces the time period during which predictor variables may become manifest. As a consequence, differences are underestimated.

Measures

The following predictor variables were obtained at the perinatal, 12 and 18- month interviews. All of the data in this study was based on the mothers' report.

Social support network

The social support network was assessed both in terms of the size of the network and types of support received. This nonstandard measure was developed for use in a longitudinal study of methadone-maintained mothers and their infants (Fiks, Johnson and Rosen, 1985). Information on reliability, validity and normative data are not available for this brief scale. The size of the social support network was based on the mother's report of the number of relatives/friends living in New York City, the number of individuals in the mothers' financial, personal, and health/medical help networks (see Appendix A). Participants were also asked whether they attended a church, social club, or volunteer organization.

At the perinatal interview, participants were asked whether they had, or expected to have, help in preparing for the new baby. They also reported the amount of help received in caring for the child during the previous six months, at the 12 and 18-month interviews. The quality of the relationship between the mother and the father was assessed at each timepoint by inquiring whether the couple lived together, amount of contact between them, frequency of arguments, and the mothers' satisfaction with their marital status.

Stress

A non-standard semi-structured stress scale was administered (see Appendix B). At the perinatal timepoint, this information was based on stress experienced during the current year. At 12 and at 18 months subsequent to the child's birth, the scale inquired about stress experienced during the prior six months. The stress scale was developed for a prior study on multi-risk mothers (Fiks, Johnson and Rosen, 1985), and measures the reported level of stress in significant areas of the mother's life. For this study, stress derived from finances, living arrangements, children, family and friends was included. Responses may range from a stress level of "none at all" to "most of the time". Total stress scores range from 0 to 12, with 0 indicating no stress, and 12 indicating that all areas had been stressful most of the time during the past year, or previous six months.

At each timepoint, participants were asked whether they had any major concerns related to their own or the baby's well-being in the areas of finances, housing, education, health, food and clothing, and drug abuse. These were tallied as either "yes" or "no" for each item.

Mother's Perception of Child's Temperament

The third predictor variable was the mother's perception of her child's temperament, culled from the following five items on the 12 and 18-month interviews (1) the eating and sleeping patterns of the baby, (2) whether the baby is on a regular eating/sleeping schedule, (3) what the baby enjoys, (4) whether the baby fusses a lot, and (5) whether the baby is easy to comfort. The mothers selected an answer from a list of between two and four choices for each

item, with values ranging from 1 to 4, with greater scores indicating a more difficult temperament (see Appendix C). The range of tallied responses to all five items is between 2 and 8 points, with lower scores indicating a perception of the infant as easy, and greater scores indicating a perception of the infant as difficult.

Reunion Episodes of the Strange Situation

The fourth predictor variable was the type of attachment behaviors exhibited by the child during the reunion episodes 5 and 8 of a modified Strange Situation procedure assessed during the 12-month clinic visit. As defined by Ainsworth and colleagues (Ainsworth et. al., 1978), the attachment behaviors are either positive in quality (proximity and contact seeking, or contact maintaining) or negative in quality (resistant or avoidant, and crying). The four types of attachment behaviors coded during the separation-reunion episodes are rated according to a 7-point likert scale, with higher scores indicating a stronger display of the particular behavior. The amount of crying is a total score, according to the frequency per 15-second intervals during the reunion episodes (Ainsworth, et al., 1978; Richters, Waters, and Vaughn, 1988). The separation/reunion procedure, as well as the attachment behaviors, were previously described in the literature reviewed (see pages 14 to 18).

The videotaped procedure took place in the laboratory room containing a carpeted floor, a chair for the mother, and several age appropriate toys. A bilingual research assistant was assigned the role of the stranger. The videotapes of the separation/reunion episodes were coded by Stephen Ruffins, Ph.D., an outside rater blind to the study design and hypotheses. The rater was trained to

code attachment behaviors based on the Strange Situation at the Institute of Child Development at the University of Minnesota.

Mother-Child Dyadic Competence

The Parent Child Observation Guide (PCOG), is a clinical instrument developed by Bernstein and Jeremy (1983), and Hans and Bernstein (1990) to assess the degree of mutual competence in dyadic interaction between the mother and child. It was developed "to make objective clinical judgements" from the observation of parent-child interaction based on Goldberg's definition of mutual competence (Bernstein and Hans, 1994). Mutual competence is operationalized as dyadic behaviors that are beneficial for the mother and the child, that reflect effective communication within the dyad, and that support or encourage mastery of age-appropriate developmental tasks for the child (Goldberg, 1977). The PCOG is an age-specific measure designed for 18 to 36-month-old toddlers and their caregivers.

The scale was developed with input from staff representing a variety of cultural backgrounds to be used by community-based programs. The developers emphasize that the PCOG is used to identify strengths in the mother-child relationship, as well as problems to be addressed. The advantages offered by the PCOG are that the subscales reflect the behaviors of both members of the dyad, there is not an emphasis on one particular member; the PCOG minimizes cultural bias by focusing on the principles on which the subscales are based as opposed to particular behaviors; can be used in a variety of settings and interactions (ie. playing, feeding, in the home or office); can be used with a wide age range of children; scoring is easy and

immediate which makes it possible to provide immediate feedback to the parent (Hans, Bernstein and Percansky, 1991).

Reliability and validity data for the PCOG were determined using four samples of low-income, high-risk dyads made up of African-American and other ethnic groups (unspecified by the researchers) with mothers ranging in age from adolescent to mothers in their mid-30's.

Reliability was assessed with these four samples, and yielded Cronbach's coefficient alpha of between .11 to .78, with a median of between .52 and .75 for each of the five subscales. In the third sample, two raters observed all of the videotapes and Pearson correlations were computed between raters for each of the five subscales. These interrater reliability coefficients ranged between .64 and .95 (Hans, Bernstein and Percansky, 1991).

Few Latino dyads have been included in the published studies using the PCOG, thus far. The first study of spanish-speaking, recent immigrant, Latino families is currently underway in the suburbs of Washington, D.C. in a Head Start program for 3-5 year olds (via phone contact with Bernstein, June, 00).

In determining the validity of the PCOG, correlations were found between the parent subscales and parental risk factors, in particular an item indicative of parents' sensitivity to their children's interests was related to older maternal age, and parents' affection shown to children was related to maternal life satisfaction and well-being (Bernstein, Percansky and Hans, 1991, p.36). The child's interest in the parent, on the child profile, showed moderate correlations with the Bayley Mental Development Index (Bayley, 1969). The child's affection shown to the parent was related to Bayley Infant Behavior Record social variables. Significant correlations have been

found between the child profile and scores on the Social Resiliency scale of the Bayley Infant Behavior Record.

For this study, this writer and a fellow doctoral student in clinical psychology were trained in the use of the PCOG by its co-developer, Victor Bernstein. Reliability and validity for the PCOG in this study was as follows: baseline reliability was established using three tapes. Reliability of greater than 80% determined by percent agreement was achieved. Reliability was then maintained by each of the raters coding every 10th tape, which resulted in a total of 13 tapes rated by both for the reliability index. Questions and disagreements on coding were resolved through discussion with Helen Johnson, co-principal investigator on the larger longitudinal study. Consensus appraisals were used for scoring and data analysis. Both coders were blind to the results of the predictor variables.

One rater is Spanish-English bilingual and the second is English monolingual. Reliability for the coding of videos of Spanish-speaking dyads was established and maintained by translating the dialogue into English for reliability coding. This was done on 2 tapes. Interrater reliability for the whole sample was maintained at greater than 80% for both English and Spanish speaking dyads.

The Parent-Child Observation Guide (PCOG) consists of two observation forms, a parent profile and a child profile (see Appendix D). The parent profile rates the mother's parental competence in interacting with her child, and the child profile rates the child's age appropriate competence in interacting with the mother, each profile provides a score reflecting the degree of

competence. The PCOG also yields a total score for the dyad, with higher scores reflecting greater mutual competence in dyadic interaction.

For this study dyadic interaction took place in the context of a free-play, or unstructured videotaped play session. During the 10-minute free-play session age appropriate toys were available in the laboratory playroom, including a shape sorter, pop-up activity toy, telephones, toy car, blocks, farm animals see-and-say toy, and an adult-sized chair. The mothers were instructed to play with their child as they normally would at home. Videotaping at 12 and 18 months took place in the same laboratory playroom.

The parent profile, providing a measure of *parental competence*, consists of the following four behavioral categories, for a total of 20 items:

- I. "Responding to Child's Need for Self-Expression,"
- II. "Sensitivity to Child's Activity and Interests,"
- III. "Positive Feelings Shown to Child," and
- IV. "Helping Child Learn".

The child profile providing a measure of *child competence*, adapted for the proposed study, consisted of the following four categories for a total of 15 items:

- I. "Expression of Need for Self-Assertion",
- II. "Involvement with Parent",
- III. "Positive Feelings Shown to Parent", and
- IV. "Language with Parent".

Each item was rated “observed/adequate” in the first column, “inadequate/ask questions” in the second column, or “not observed” by placing a checkmark in a third column used for the present study. “Adequate” indicated that the parental behavior supported or encouraged the mastery of the developmental task, while “inadequate” indicated the parental behavior interfered with the child’s mastery of that task, and “not observed” was coded when a behavioral item was not exhibited (such as, the parent is not presented with a situation in which limit setting is necessary). Items rated as “adequate” received a score of 1, and items rated “inadequate” were scored as zero. The items were tallied to yield a parental competence score ranging from 0 to 20, and a child competence score ranging from 0 to 15. Higher scores for the parent indicated that overall the mother promoted mastery of developmental tasks and, therefore, facilitated the child competence. Mutual competence scores were calculated by adding the parent and child scores, with a range of 0 to 35. Higher total scores indicated that the dyadic interaction reflected mutual competence, promoting competence and mastery in the child. A high total score could also be found if one member of the dyad is highly effectively interactive, while the other is not. The PCOG does not have a cutoff point to indicate high or low scores.

Data Analysis

The demographic and behavioral data were imported into SPSS version 10 to conduct the statistical analyses. To eliminate data entry error, data quality was evaluated by comparing electronic and hardcopy versions. In addition to readying the data for analysis, descriptive statistics were calculated to evaluate the distributional properties of the demographic,

psychosocial and behavioral items included, such as frequency distributions, mean, median, mode, standard deviations and other measures of dispersion such as kurtosis and skewness. Analyses conducted include correlational analyses, mean comparisons using t-tests, median comparison using the Mann-Whitney U test, analysis of variance (ANOVA), and stepwise multiple regression analysis.

CHAPTER IV

Results

Correlational analyses of the demographic characteristics will be presented first. This will be followed by findings of changes in the women's lives from the perinatal to the 12-month and 18-month interviews, in the areas of living arrangements, income, and their relationship with the child's father. Statistical findings (frequencies, correlational analyses, means comparisons, and analyses of variance) will then be presented for the predictor variables, namely social support, stress, maternal perception of the child's temperament, and attachment behaviors. All of the correlations reported are Pearson 2-tailed at an alpha level of 0.05 unless otherwise indicated.

Participant Characteristics

Observations of the full sample's demographic characteristics in the form of correlations are presented in order to have a better understanding of the participants. Also given the literature on parenting and psychosocial risk factors, it was important to assess whether particular demographic variables were highly associated with one another. In particular, the age at which participants had their first child was explored since giving birth at a young age, especially during adolescence has been associated with problematic parenting (Brooks-Gunn and Furstenberg, 1986; Hans, Bernstein and Percansky, 1991). This link between age at motherhood and maternal competence in dyadic interaction will be explored in later analyses of the data. The results of a full matrix correlation are shown on Table 4, including the age when participants had the first child, whether they dropped out of high school due to pregnancy, number of children, years of school completed, income, number of years in the United States, and current age.

TABLE 4
Pearson Correlations: Demographic Factors for the Mothers (n=23)

	1	2	3	4	5	6	7
1. Age at first child	1						
2. HS pregnancy	-0.505	1					
3. Education	0.581**	-0.224	1				
4. No. children	-0.460*	0.473*	-0.298	1			
5. Yrs in US	0.577*	-0.209	0.478*	-0.043	1		
6. Income	0.692**	-0.420	0.424	-0.077	0.591*	1	
7. Current age	0.092	-0.229	-0.425*	0.361	0.029	0.484*	1

* = $p < 0.05$

** = $p < 0.01$

As seen on Table 4, the age at which participants had their first child was negatively correlated with the number of children she had, $r = -.460$, suggesting that the earlier a woman had her first child the more children she had at the time of enrollment in the study. The age at which the women became mothers was strongly correlated with the years of schooling completed, $r = .581$, and their reported monthly income $r = .692$ (both significant at the $p < 0.01$ level). Therefore, women who began to have children earlier in life had less education, and more monthly income (presumably from increased public assistance). The age at which the women became mothers was also positively correlated with the number of years living in the United States, $r = .577$, indicating that those women who had their first child earlier in life tended to be more recent immigrants.

The mothers' age at the time of enrollment in the study was correlated with monthly income, $r = .484$, and negatively correlated with education, $r = -.425$. Therefore, older mothers had more monthly income than younger mothers, but had completed fewer years of school. Also, the more years a woman had been living in the U.S., the more formal education she had completed, $r = .478$.

Living Arrangements

The living arrangements shifted for the participants across timepoints, from the perinatal to the 12-month and 18-month interviews. Of note, the baby had not lived with anyone other than the biological mother and/or the father throughout. Table 5 illustrates the changes in living arrangements.

TABLE 5
Changes in living arrangements: Perinatal, 12 months, and 18 months

Frequency = Number of mothers
Percent = Percent of mothers

Time of Assessment

Living Arrangements	Perinatal	12 Months	18 Months
With male partner	5 21.7%	14 60.9%	13 56.5%
With family/friends	12 52.2%	6 26.1%	5 21.7%
Alone/ help available	6 26.0%	2 8.7%	6 26.1%
Stable	18 78.3%	11 47.8%	17 73.9%
Temporary	5 21.7%	10 43.5%	6 26.1%
Missing cases	0	2	0
Total n=	23	22	23

The most notable difference in living arrangements was between the perinatal and 12-month interviews. While only five women of the 23 had been living with the baby's father at the perinatal visit, 14 women were cohabitating with the father at 12-months, more than half the sample. This proportion remained fairly stable for the 18-month visit. At the perinatal and 18-month visit, six of the women were living in isolation with their children (without a partner or family member) but with help available if needed. The lowest rate of women living alone was at the 12-month timepoint.

At each visit, the women were asked whether the living arrangements were temporary or stable. As noted on Table 5, over three-quarters considered their living situation stable initially (18 cases), while less than half did so at 12-months (11 cases). A shift was seen again at 18-months, when slightly less than three-quarters felt their situation was stable (17 cases). Since additional questions were not asked, it is unclear whether participants considered living arrangements temporary or stable based on whom they were living with, or the size of the apartment. The number of times the participants changed residence was recorded at 12 and 18-months. Two women had moved once, and one woman had moved three times from the perinatal to the 12-month visit. Three had moved once, and one moved twice from the 12-month to the 18-month visit.

Income

Monthly income increased for the full sample from the perinatal to the 18-month visit, as illustrated by Table 6. At the perinatal timepoint an outlier figure was neutralized by replacing it with the group mean. Therefore, at the perinatal interview mean monthly income was \$330.46

(SD= 173.24), compared to a mean of \$543.59 (SD= 230.07) at 18-months. The median difference in income between these timepoints is \$122, for an increase of 69%. The Mann-Whitney U test was selected to compare the difference between these medians. This nonparametric procedure is appropriate given the non-normal distribution of the sample's monthly income. This test considers the ranks of monthly income figures. The results of the test were significant, $z = -3.151$, $p = .002$.

TABLE 6
Monthly Income: Perinatal and 18-Month Interviews (n=23)

	Timepoint	n	Mean Rank	Sum of Ranks
Monthly Income	Perinatal	20	15.25	305.00
	18 Months	22	27.18	598.00
	Total	42		

Test Statistics

Monthly Income

Z score -3.151
Asymp. Sig. (2-tailed) .002*

* $p < 0.05$

Although information on the fathers' income was not obtained, their employment rate was fairly stable throughout the three timepoints. From the full sample at the perinatal visit, 14 fathers

were working, at the 12-month 11 were employed out of 21, and at 18-months 12 were employed out of twenty.

Mother's Relationship with the Child's Father

The quality of the relationship with the child's father, as reported by the mothers, was assessed at all three timepoints, although not in a uniform fashion. The perinatal interview inquired about the amount of contact between the couple, and the severity of their arguments. The 12-month interview asked about the degree of closeness between the couple. The 18-month interview, in addition to inquiring about the degree of closeness between the couple, included questions on the frequency of arguments and whether these ever became violent. Given the difference in the questions asked at each visit, a direct comparison between timepoints is not possible.

At the perinatal visit, responses on the amount of contact between the couple were available for 14 cases, and information on the frequency of their arguments was available for 10 cases. It is unclear whether these questions were omitted erroneously during the course of the interviews, or whether the women refused to answer. Based on 14 cases, the couples tended not to have regular contact. One couple did not have any contact, three had contact irregularly, three at least monthly, two had close contact, and five lived together. In terms of arguments based on 10 cases, one participant claimed that the couple never argued, six claimed to argue occasionally but arguments were never violent, two indicated frequent arguments that were never violent, and one admitted arguments that were "somewhat violent".

At 18-months, twenty-two women provided information on the frequency and severity of arguments with the child's father. Fifteen admitted occasional arguments, six usually or often argued, and one woman reported never arguing with her partner. Only two women reported arguments being occasionally or often violent. At both the perinatal and 18-months interviews, responses reflecting aggression or violence within arguments were rare.

In terms of the degree of closeness between the couple, responses at 12 and 18 months were quite similar for the full sample. At both timepoints, 14 women or over half the sample experienced having a "very close" relationship with the child's father. At 12-months five described their relationship as "not too close", while seven women endorsed being not too close to the child's father at 18-months. At 12-months four reported that they "do not speak" with the father, while only two chose that response at 18-months.

At each visit, the women were asked whether they were satisfied with their marital status. At the perinatal and 12-month visit, the majority of the women reported feeling satisfied with their marital status, 22 out of 23 at perinatal, and 18 out of 20 at 12-months. At 18-months, responses were available for fifteen women. Of these, twelve endorsed feeling satisfied.

Social Support

The extent of social support available to the women was assessed at each of the three timepoints. Information obtained included both the size of the social support network, as well as the number of individuals relied on when the women encountered financial, personal and medical problems. At the perinatal visit, the size of the network was further divided into the number of relatives and friends counted on locally in New York City, as opposed to a total number, whereas

the two later timepoints obtained a total number regardless of region or relationship. At each visit the women were also asked about their involvement in any church, social club, or organization.

Descriptive statistics (such as the mean, median, range, and standard deviation) for total social support received at each timepoint are listed in Table 7. At the perinatal visit, mean family support was 1.78 (SD=1.65) with a range of 0 to 6; mean support from friends was 1.13 (SD=1.18), with a range of 0 to 4; and total support had a mean of 1.30 (SD= .70). From the raw data, participants relied more often on their family of origin, than on a spouse/male partner or friends. Nineteen of the women said they counted primarily on their families, eight on their spouse/male partner, and three on friends. Most of the women did not seek support from sources outside their immediate environment. Of the full sample, nine women were involved with the church, and one with a social club; no one was involved with a volunteer organization.

TABLE 7
Size of Total Social Support Network: Perinatal, 12 and 18 Months (n=23)

Timepoint	Mean	Median	SD	Range
T1: Perinatal	1.30	1.00	.70	0 -2
T2: 12 Months	1.78	2.00	1.31	0 -6
T3: 18 Months	1.52	2.00	1.08	0 -4

In addition, at the perinatal interview participants were asked whether they were prepared for the new baby, in terms of materials needs. Of the full sample, 17 said they felt prepared and

six did not feel prepared. They were then asked who might help them prepare for the new baby. Despite the fact that only five of the women lived with the baby's father at the time, 14 indicated that the father would help them prepare in terms of material support, 15 expected their families to help in the preparations, and six expected help from friends. None of the women planned to receive assistance from a social service agency, and one received help from the church.

The size of the total social support network at 12-months, including both family and friends, had a mean of 1.78 (SD=1.31) with a range of 0 to 6, and at 18 months that mean decreased to 1.52 (SD= 1.08) with a range of 0-4. At the perinatal visit, three women did not have anyone they believed they could count on, at 12-months two did not have anyone, and four women at 18-months had no one they could rely on. The total size of the support network at 12 and 18 months was positively correlated, $r = .596$, $p < 0.01$. This finding suggests that women with larger support networks at 12-months maintained these at 18-months, while those with small networks at 12-months continued to have reduced networks at 18-months.

The number of individuals the women counted on with problems in the areas of finances, personal problems, and medical or health problems are listed in Table 8 for all three timepoints. Despite the stability of the size of the network across time as described above, when pressed to indicate the amount of help available in these specific areas, a significant decline over time was found for the full sample. The mean number of individuals available to help with financial problems at the perinatal, 12 and 18 months timepoints were 1.96 (SD=1.40), 1.48 (SD= .95), and .87 (SD= .69), respectively. Individuals available to help with personal problems at the perinatal, 12 and 18 months timepoints had means of 2.22 (SD= 1.17), 1.43 (SD= .90), and 1.00 (SD= .80),

respectively. And available help with medical problems at the perinatal, 12 and 18 months timepoints had means of 1.91 (SD= 1.24), 1.09 (SD= .85), and .87 (SD= .97), respectively.

TABLE 8
Types of Social Support: Perinatal, 12 and 18 Months (n=23)

Timepoint	Mean	Median	SD	Range
Financial Help				
<i>T1: Perinatal</i>	1.96	2.00	1.40	0-5
<i>T2: 12 Months</i>	1.48	1.00	.95	0-3
<i>T3: 18 Months</i>	.87	1.00	.69	0-2
Personal Help				
<i>T1: Perinatal</i>	2.22	2.00	1.17	0-5
<i>T2: 12 Months</i>	1.43	1.00	.90	0-3
<i>T3: 18 Months</i>	1.00	1.00	.80	0-3
Medical Help				
<i>T1: Perinatal</i>	1.91	2.00	1.24	0-5
<i>T2: 12 Months</i>	1.09	1.00	.85	0-3
<i>T3: 18 Months</i>	.87	1.00	.97	0-4

Post-hoc analysis comparing the means within these areas of support across the timepoints was conducted using the Tukey HSD procedure for pairwise comparisons, presented in Table 9. Tukey HSD was selected on the basis that it does not require the application of an

overall F test and is appropriate with equal sample sizes. On Table 9, "Time 1" refers to the perinatal visit, "Time 2" to the 12-month, and "Time 3" to the 18-month visit. The "mean difference" refers to the mean difference of support within the area indicated between two timepoints.

TABLE 9

Differences in Financial, Personal and Medical Help: Perinatal, 12 and 18 Months (n=23)

Post hoc test: Tukey HSD

<u>Financial Help</u>	<u>(I)Time</u>	<u>(J)Time</u>	<u>Mean Difference (I-J)</u>	<u>SE</u>	<u>p-value</u>
	1	2	.48	.31	.280
	1	3	1.09**	.31	.002**
	2	3	.61	.31	.131
<u>Personal Help</u>	1	2	.78*	.28	.021*
	1	3	1.22***	.28	.000***
	2	3	.43	.28	.285
<u>Medical Help</u>	1	2	.83*	.30	.023*
	1	3	1.04**	.30	.003**
	2	3	.22	.30	.756

* $p < 0.05$

** $p < 0.005$

*** $p < 0.001$

1= Perinatal

2= 12 months

3= 18 months

A significant mean difference was found in the decrease of social support with financial, personal, and medical problems from the perinatal to the 18-month visits. In the area of financial

problems, the most notable mean difference was between the perinatal and 18-month visit, ($D = 1.09$, $p = .002$). In the area of personal problems the mean difference was between the perinatal and 18-month visit, ($D = .78$, $p = .021$), with an even larger difference in the decrease of support between the 12 and 18-month visits, ($D = 1.22$, $p = .000$). With medical problems there was a significant difference between the perinatal and 12-month visits ($D = .83$, $p = .023$), and between the 12 and 18-month ($D = 1.04$, $p = .003$).

At 12 and 18 months participants were asked whether they received assistance caring for the child. The amount of help received with the child also decreased between these timepoints. At 12-months, 14 women reported receiving help taking care of the baby on a daily basis, one had help a few times a week, two occasionally, and five reported not having any help available. This information was missing for one case. At 18-months, thirteen of the 23 reported not receiving any assistance, eight reported receiving daily help, one indicated receiving help a few times a week, and one only a few times per month.

Stress

A stress scale measured the level of stress derived from problems with finances, living arrangements, children, and family or friends over the past year at the perinatal visit, and over the previous six months at the 12 and 18-month visits. Total stress scores may range from 0 to 12. Zero indicates no stress, while 12 suggests that all areas had been stressful most of the time.

The women reported very low levels of stress at all three timepoints. At the perinatal visit the full sample had a mean stress level of 1.17 ($SD = 1.23$) from financial problems, 1.27 ($SD = 1.44$) from stress caused by living arrangements, .70 ($SD = 1.22$) for stress from their

children, and .65 (SD= 1.07) for stress from relatives. At 12-months these means decreased slightly for the full sample. The mean stress level from problems with finances, living arrangements, children, and relatives were 1.00 (SD=1.31), 1.09 (SD= 1.41), .30 (SD= .82), and .48 (SD= 1.08), respectively. At 18-months mean stress across these areas continued to decrease to barely noticeable levels. The mean stress levels were 1.17 (SD= 1.27), .65 (SD= 1.19), .13 (SD= .63), and .22 (SD= .74), respectively.

The Levene statistic to test for the homogeneity of the variances across time was nonsignificant. There was a lack of variability. A post hoc test using the Tukey HSD procedure for mean comparisons between the timepoints was not significant.

In order to capture additional areas of potential stress, the women were asked during all three visits whether they had major concerns related to their own or their baby's well-being in the areas of finances, housing, education, health, food and clothing, and drug abuse. Table 10 lists the frequencies and percentage of participants who indicated concern in these areas for the three timepoints. Information is provided for the full sample.

TABLE 10

Major Concerns: Perinatal, 12 Months and 18 Months (n=23)

Frequency and Percent of Mothers Indicating Concerns

	Financial	Housing	Educational	Health	Food/ Clothing	Drug Abuse
Perinatal	19 (82.6%)	11 (47.8%)	10 (43.5%)	10 (43.5%)	7 (30.4%)	1 (4.3%)
12 Months	12 (52.2%)	13 (56.5%)	14 (60.9%)	12 (52.2%)	12(52.2%)	10(43.5%)
18 Months	12 (52.2%)	11 (47.8%)	13 (56.5%)	11 (47.8%)	6 (26.1%)	3 (13.0%)

The frequencies on Table 10 indicate that at the perinatal visit, nineteen had financial concerns, eleven had concerns about housing, ten about education, ten about health, seven about food and clothing, and one was concerned about drug abuse. At 12 months the rate of concern increased in all areas. Twelve women had financial concerns, thirteen had concerns about housing, fourteen about education, twelve had concerns about health, twelve about food and clothing; and ten were concerned about drug abuse. At 18 months twelve reported concern about finances, while the rates for the other areas resembled those at the perinatal visit.

Table 11 illustrates the results of a post-hoc univariate analysis of variance for mean differences in the amount of concern between the timepoints as well as across areas of concern. The null hypothesis was rejected in the areas of financial and drug abuse concerns.

TABLE 11
Univariate Analysis of Variance: Major Concerns at Perinatal, 12 and 18 Months (n=23)

Between-Subjects Factors

	<u>n</u>
Perinatal	23
12 Months	23
18 Months	23

Tests of Between-Subjects Effects

Independent Variable: Time

Dependent Variables: 1. Financial Concerns 2. Drug Abuse

<u>Source</u>	<u>Sum of Sq.</u>	<u>df</u>	<u>Mean Sq.</u>	<u>F</u>	<u>p-value</u>
Time	1.420	2	.710	3.171	.048*
Time	1.942	2	.971	6.953	.002**

*p < 0.05

** p < 0.01

For financial concerns at the perinatal timepoint the group mean was .83, while the mean at 12-months was .52, and .52 again at 18-months. These differences were significant, $F = 3.171$ (2, 68), $p = .048$. For concerns related to drug abuse on the perinatal, 12-month, and 18-month interviews the means were .43, $4.35E-02$, and .13, respectively. These mean differences were found to be significant, $F = 6.953$ (2,68), $p = .002$. There were no differences in the rates of concern in the other areas across the timepoints.

Maternal Perception of Child's Temperament

The 12 and 18-month interviews included developmentally appropriate questions about the mothers' perception of the child's temperament based on eating and sleeping patterns, maintaining a regular eating/sleeping schedule, whether the child enjoys specific versus general activities, fusses a lot, and is easy to comfort. Although the 18-month interview included additional questions in keeping with changes in the child's autonomy, these were not analyzed given that they were not asked at 12-months, and therefore comparisons would not be possible. Higher values were assigned to responses indicating a lack of difficulty with the particular item, therefore a higher total score reflected an easier temperament as perceived by the mother. Comparisons were made between responses at 12 and 18 months. The potential range of scores was between 2 to 8.

The mothers had generally positive opinions of their developing child's temperament at both timepoints, as shown on Table 12. The full sample mean at 12-months was 6.43, and 6.91 at 18-months. A 2-tailed T-test for the equality of means was not significant, $t = -1.350$, $p = .184$, indicating a lack of variability in the respective means.

TABLE 12**Mothers' Perception of Child's Temperament: 12 and 18 Months (n=23)**

<u>Timepoint</u>	<u>n</u>	<u>Mean</u>	<u>SD</u>	<u>SE Mean</u>
12-Months	23	6.43	1.50	.31
18-Months	23	6.91	.79	.17

T-test for Equality of Means (2-tailed) at the 0.05 level

	<u>t</u>	<u>df</u>	<u>p-value</u>	<u>Mean Difference</u>
Temperament	-1.350	44	.184	-.48ns

ns= not significant.

Attachment Behaviors at 12-Months

The quality of the child's attachment to the mother was assessed during two separation-reunion episodes of the Strange Situation at the 12-month clinic visit, as previously described in the procedure and measures sections. Episode 5 refers to the first reunion episode between the mother and child, prior to which the child had been left with the stranger. Episode 8 refers to the second reunion episode prior to which the child was more stressed by being left alone in the playroom.

Studies have shown that the child's attachment behaviors upon reunion with the mother are either positive in quality (proximity and contact seeking, or contact maintaining) or negative in quality (resistant or avoidant), and crying (Ainsworth et. al., 1978). Crying is considered negative when accompanied primarily with resistant or avoidant behaviors. The strength or intensity of the four attachment behaviors were quantified according to a 7-point attachment rating scale, with higher indexes indicating a stronger display of the particular behavior. The

amount of crying is a total score, according to the frequency per 15-second intervals during each reunion episode (Ainsworth, et al., 1978; Richters, Waters, and Vaughn, 1988). Table 13 lists the mean scores of each behavior during Episodes 5 and 8, as well as the standard deviation and standard error of the mean.

TABLE 13
Attachment Behaviors: 12 Month Separation-Reunion Episodes (n=23)

Behavior	Episode	n	Mean	SD	SE
Proximity-seeking	5	23	3.13	1.66	.35
	8	23	3.52	1.56	.33
Contact maintenance	5	23	2.78	1.93	.40
	8	23	4.09	2.19	.46
Resistance	5	23	1.30	.76	.16
	8	23	1.65	.88	.18
Avoidance	5	23	2.30	1.82	.38
	8	23	1.83	1.75	.36
Crying	5	23	2.00	2.75	.57
	8	23	3.30	3.32	.69

T- test for Equality of Means (2-tailed)

Behavior	t	df	p-value
Proximity-seeking	-.823	44	.415
Contact maintenance	-2.141	44	.038*
Resistance	-1.426	44	.161
Avoidance	.909	44	.368
Crying	-1.451	44	.154

* $p < 0.05$ (2-tailed).

Based on the full sample, the children exhibited more proximity-seeking and contact maintenance behaviors in comparison to resistance and avoidance. During Episodes 5 and 8, the mean rate of proximity seeking was 3.13 and 3.52. The mean rate of contact maintenance during Episodes 5 and 8 were 2.78 and 4.09. These means are in contrast to those for resistance, 1.30 and 1.65, and avoidance, 2.30 and 1.83 in Episodes 5 and 8, respectively.

To determine whether any behavior increased or decreased significantly from one episode to the other, a T-test for the equality of means was conducted. The results were significant for contact maintenance only. Contact maintenance increased from a mean of 2.78 (SD= 1.93) in Episode 5, to 4.09 (SD= 2.19) during Episode 8, $t = -2.141$, $p = .038$. Rates of proximity seeking, resistant and avoidant behaviors did not increase or decrease significantly from one episode to the other. Post-hoc analysis found no mean differences in the rates of attachment behaviors when controlling for the child's sex.

Significant correlations were found between attachment behaviors, as indicated by Table 14. These correlations are listed by the episode in which the behaviors were displayed. During Episode 5, the first reunion, proximity seeking and contact maintenance were positively correlated with one another, $r = .733$ ($p < 0.01$), and each was negatively associated with avoidance, $r = -.601$ ($p < 0.01$) for proximity seeking, and $r = -.446$, ($p < 0.05$) for contact maintenance. Therefore following an initial separation, upon reuniting with the mother those children exhibiting high rates of proximity-seeking behavior also tended to make attempts at maintaining contact with the mother. Those children clearly exhibited adaptive attachment behaviors.

During Episode 8, proximity seeking and contact maintenance were again positive: correlated with one another, though less so than in Episode 5, $r = .490$ ($p < 0.05$). These behaviors continued to be negatively correlated with avoidance, $r = -.680$ and $r = -.541$, (both $p < 0.01$), respectively. The amount of crying during Episode 8 was positively correlated with contact maintenance $r = .427$, ($p < 0.05$) and more strongly with resistant behavior $r = .594$ ($p < 0.01$).

TABLE 14

Pearson Correlations: 12-Month Attachment Behaviors in Episodes 5 and 8 (n=23)

<u>Behavior</u>	<u>Episode</u>	<u>Contact Maint.</u>	<u>Avoidance</u>	<u>Resistance</u>
Proximity-seeking	5	.733 **	-.601 **	ns
Contact maintenance	5	1.000	-.446 *	ns
Proximity-seeking	8	.490 *	-.680 **	ns
Contact maintenance	8	1.000	-.541 **	ns
Crying	8	.427 *	ns	.594 **

Not significant = ns.

* $p < 0.05$ (2-tailed)

** $p < 0.01$ (2-tailed)

Dyadic Competence at 18-Months

The mothers' total score on the Parent-Child Observation Guide (PCOG) were positively associated with each of the following behaviors on the mothers' part: having accurate expectations of the child for the child's age $r = .712$, treating the child with respect $r = .673$, helping the child stay interested in a toy/activity $r = .658$, and remaining patient with the child $r = .548$, (all p 's < 0.01). The child's total PCOG score was significantly positively correlated with a demonstrated ability to invite interaction/activity with the mother, $r = .601$ ($p < 0.01$), and with a

mother's tendency to smile at the child in several situations during dyadic play, $r = .477$ ($p < 0.05$).

Sex differences in the child's dyadic play approached significance. Of the full sample, girls had a mean of 8.00 (SD= 1.73) while boys had a mean of 6.17 (SD= 2.59). A 2-tailed T-test for the equality of means approached a significant value, $t = .061$ at the .05 level.

Hypothesis 1:

It was hypothesized that higher levels of the positively valued attachment behaviors (proximity seeking and contact maintenance) during the reunion episodes at 12 months would be correlated with mothers' behaviors reflecting dyadic competence at 18 months. This hypothesis was not sustained.

Correlations between the mothers' total PCOG score and proximity seeking and contact maintenance during each of the episodes were not significant, as seen on Table 15. For proximity seeking $r = -.062$, and $r = -.081$ in Episodes 5 and 8, respectively. For contact maintenance, $r = -.139$, and $r = -.230$ in Episodes 5 and 8, respectively.

TABLE 15

Pearson Correlations: Total Maternal PCOG and Attachment Behaviors (n=23)

<u>Behavior</u>	<u>Episode</u>	<u>Maternal PCOG Score</u>
Proximity-seeking	5	-.062 ns
Contact maintenance	5	-.139 ns
Proximity-seeking	8	-.081 ns
Contact maintenance	8	-.230 ns
Avoidance	8	-.424*

* $p < 0.05$, (2-tailed).

Despite these results, a higher total maternal PCOG score was negatively correlated with avoidant attachment behavior, $r = -.424$, $p < 0.05$. This indicated that the children of mothers who demonstrated more dyadic competence during free play at 18 months tended to exhibit low rates of avoidance upon being reunited with her.

Hypothesis 2:

The second hypothesis posited that stress, lack of social support, and a perception of the child as difficult would be related to lower dyadic competence by the mother at 18 months. This hypothesis was partially sustained.

A step-wise multiple regression included stress levels and social support network at the three timepoints, and the mother's perception of her child's temperament at 12 and 18 months as predictor variables. The mother's total PCOG score was the dependent variable. The statistical analysis provided the following predictor model, illustrated in Table 16.

In rank order, the single best predictor of a mother's dyadic competence was whether she perceived the child as fussing a lot at 18-months. This item is one of five questions used to assess the child's temperament as reported by the mother. This accounted for 34% of the variance in the mother's PCOG score. The second best predictor of a mother's dyadic competence was stress from living arrangements at the perinatal timepoint, explaining 28% of the variance, and the third best predictor was stress from relatives/friends, also at the perinatal timepoint, accounting for 20% of the variance.

The predictor model listed the following variables as weaker predictors. In order of significance they were, whether the mother indicated that her child enjoyed specific versus

general activities at 12 months (11% of the variance), stress from the children at the perinatal timepoint (2% of the variance), resistant behavior by the child during reunion Episode 8 (2% of the variance), and contact maintenance at reunion Episode 5 (2% of the variance). The model did not include the social support network as having any impact on the mother's dyadic competence.

TABLE 16
Predictors of Maternal Competence at 18-Months: Stress, Child's Temperament, and Attachment Behavior (n=23)

Maternal competence as reflected by maternal PCOG score

Predictor	R	R ²	Std. Error of Estimate	p-value
1	.586	.343	2.81	.022*
2	.791	.626	2.21	.003*
3	.907	.822	1.59	.000*
4	.965	.932	1.03	.000*
5	.978	.957	.86	.000*
6	.989	.979	.65	.000*
7	.995	.990	.48	.000*

Stepwise Multiple Regression Model

* Probability-of-F-to-enter \leq .05 based on stepwise multiple regression.

1= Predictor: Fussiness at 18Months (temperament)

2= Predictor: Stress from living arrangements at perinatal

3= Predictor: Stress from relatives/friends at perinatal

4= Predictor: Child enjoys activities at 12 months (temperament)

5= Predictor: Stress from children at perinatal

6= Predictor: Resistant behavior at 12 months (attachment)

7 =Predictor: Contact maintenance at 12 months (attachment)

Hypothesis 3:

It was hypothesized that the mothers' dyadic competence at 18-months would be positively correlated with the child's dyadic competence. This hypothesis was not sustained. The Pearson correlation was .214.

In addition, a post-hoc Pearson correlation was conducted to assess whether any association existed between the age at which mothers had their first child and their dyadic competence at 18-months, as reflected by the mothers' PCOG score. This result was not significant, $r = -.227$.

CHAPTER V

Discussion

This chapter will describe the sample and their characteristics, followed by the rationale for studying the mother-child relationship within this sample, and the research questions addressed. The research hypotheses and their findings will then be discussed. Interpretation of the results will include a discussion of relevant observations on the findings of the independent variables. A commentary on the limitations of the study will be followed by its contributions and recommendations for future research within this domain.

The present study explored the mother-child relationship within an economically disadvantaged, Dominican and Puerto Rican urban sample living in New York City. This non-random sample was made up of 23 mother-child dyads, drawn from the control group of a completed longitudinal study known as The Mother-Infant Program at Columbia Presbyterian Hospital. The Mother-Infant Program, funded by NIDA (National Institute on Drug Abuse), investigated the neurobehavioral development of infants born to women living in poverty, with a history of prenatal drug abuse prior to and during pregnancy. In the interest of studying a non-clinical sample of Dominicans and Puerto Ricans, only control dyads were selected for the present study. This was done in order to avoid confounding factors inherent in substance-abusing parenting.

Demographic characteristics were obtained during the perinatal interview, the mothers' first interview either prior to, or shortly after the birth of the study baby. Predictor variables were also collected at the time of the perinatal interview, an interview at the child's age of 12-months,

and six months later at an 18-month interview. Outcome variables were gathered at the 18-month interview. Measures were given and assessed using both English and Spanish.

In order to fully appreciate the results of this study, it is important to understand the sociodemographic makeup of its participants. All but four of the twenty-three participants were self-identified as Dominican, the others as Puerto Rican. Despite this difference in ethnic background in four cases, these women and their families of origin share Caribbean roots, Spanish as their first language, and an appreciation for the value orientation of familism (Zayas and Palleja, 1988). The majority of the women were born in the Dominican Republic, and although measures of the following were not included in this study, one can presume that as ethnic minorities in the United States they share the experiences of acculturation and racism.

Representative of the Latino population seeking medical attention at Columbia Presbyterian Medical Center, this sample resides in the area of highest concentration of Dominicans outside of the Dominican Republic in one of New York's inner cities, known as Washington Heights. The environment in this largely Latino community has both strengths (Spanish-food restaurants, 24-hour bodegas, ethnically and economically diverse neighbors) and weaknesses (poverty, drugs, crime). Study participants were characterized as lacking a high school education due to early pregnancy and other (unknown) factors, having low employment rates, many supported by public assistance, giving birth out of wedlock, and residing primarily with family and/or friends, as opposed to their own home with the child's father.

Few studies, and in particular longitudinal investigations, have focused on the first two years of the mother-child relationship within economically disadvantaged Latino samples. When

Latino dyads are studied they are often compared to middle class, Anglo dyads. Given such a comparative design and the use of measures normed on middle-class, White populations, the findings for Latino dyads tend to be presented as deficient or non-optimal (Garcia-Coll, 1990; Halpern, 1990; Zayas and Solari, 1994). The goal of this study has been to contribute to the limited pool of information on low-income Dominican and Puerto Rican mother-child attachment and dyadic competence during the first year and a half of their relationship, without comparing them to a White middle class group or other ethnic group. During the first eighteen months the infant's motoric, vocal and cognitive abilities develop, as their need for psychomotor autonomy increases (Mahler, Pine and Bergman, 1975; Winnicott, 1965). Toddlerhood poses new challenges to any parent, both in supporting the child's increased autonomy and curiosity, as well as setting limits.

This study has an integrative perspective that included the interaction between dyadic competence at 18 months and psychosocial factors in the mothers' life, such as stress (Conger, McCarty, Yang, Lahey and Kropp, 1984), social support (Coletta, 1979), and dynamic factors, such as the impact of maternal perceptions of the child's temperament (Bates, 1983) and the child's attachment behaviors (Ainsworth et al., 1978). These variables were chosen as predictors of dyadic competence given their salience in prior studies of mother-child dyads, and relevance to the study sample (Pianta and Egeland, 1990; Vaughn, Egeland, Sroufe and Waters, 1979; Weinraub and Wolf, 1983; Zepeda, Santos and Nevarez, 1997, Slade, 1987).

The Parent-Child Observation Guide (Bernstein and Jeremy, 1983) was used to assess dyadic competence for the mother and child at 18 months. The child's attachment behaviors

during separation-reunion episodes of Ainsworth's Strange Situation were compared to the child's competence at 18 months. The Strange Situation was normed on White, middle class samples, while the PCOG was normed on low-income families of diverse ethnic backgrounds. These instruments share common theoretical underpinnings based on object relations and control systems theories. These include a fundamental adherence to the significance of the primary relationship during the first two years (Bowlby, 1958, 1973), an appreciation for the mother-child relationship as the context within which the child develops the ability to trust (Erikson, 1963), to learn and engage in reciprocal interaction (Goldberg, 1977, Stern, 1974), and a healthy sense of self as effective (Pine, 1985; Stern, 1985; Winnicott, 1965, 1971).

Research questions:

Based on the relevant literature, and the lack of a critical mass of information on the dyadic competence of low-income Latino mother-child dyads, this study posed the following questions:

1. As assessed during two separation-reunion episodes, will the child's positive attachment behaviors (proximity and contact seeking, or contact maintaining) at twelve months predict more parental dyadic competence? Will the child's negative attachment behaviors (resistant, avoidant, and crying) predict less parental dyadic competence?
2. Do potential stressors and social support contribute more to the mother's dyadic competence than her perception of the child's temperament?
3. Which of the four predictor variables (quality of attachment behaviors, stress, social support, or perception of infant's temperament) contribute more to the variance in the child's dyadic competence, the mother's dyadic competence, and thereby, the dyad's mutual competence?

4. How is the mother's competence in interacting with her child associated with the child's competence?

Hypothesis 1:

Previous studies have demonstrated associations between maternal dyadic responsiveness during the first year and the child's attachment behaviors during the separation-reunion episodes of the Strange Situation at the end of the first year (Ainsworth et al., 1978, Belsky et al., 1984b; Egeland and Farber, 1984; Londerville and Main, 1981; Main and Stadtman, 1981). Those studies predicted attachment behaviors from maternal responsiveness during dyadic activity.

For the present study, the quality of attachment behaviors, in particular rates of proximity-seeking and contact maintenance during the reunion episodes at 12-months, were used as predictors of maternal dyadic competence at 18-months. This hypothesis was based on the premise that dyadic competence is systemic in nature, therefore attachment behaviors that have been shown to reflect maternal dyadic competence may also be expected to predict it. This conceptual reasoning has been endorsed by other researchers (Slade, 1987). Despite the theoretical premise on which this hypothesis is based, the hypothesis was not sustained for this sample.

Slade (1987) found that mothers of children classified as securely attached, based on high rates of proximity seeking and/or contact maintenance, engaged in dyadic play for longer periods of time, and more frequently in a laboratory observation. Differences between Slade's study and the present study are the sample characteristics, age of the children, and the formal categorization of the children as securely or insecurely attached. Attachment studies that conduct a behavioral

analysis exclusively, without the formal classifications, are less common than those in which children are classified. In Slade's study, all participants were middle-class and Caucasian, with the exception of one Black dyad. Attachment was assessed when the children were between 16 and 18 months of age, and unstructured dyadic play was observed at 20, 22, 26 and 28 months, much later in development than the sample in the present study. Mothers of older toddlers may have different or higher expectations of their child's play capacities and therefore use more interactive strategies to engage them.

Also, in our study the six months time lapse between the assessment of attachment behaviors and dyadic competence, although brief, may allow for unknown factors to intervene and impact the dyadic relationship. As suggested by Lamb (1987), it should not be determined that differences in attachment at one time point lead to, or are linked to differences in a construct measured at a later time point for the child. He recommends that relevant constructs under comparison should both be assessed at both time points, as contemporaneous measures. Whereas, Slade had repeated observations of dyadic activity beginning only 2 months after attachment was assessed. Our study only had one observation of maternal behavior, which may easily be affected by external and dynamic factors.

Although proximity seeking and contact maintenance did not predict maternal competence in our study, lower rates of avoidant behavior during the reunion episodes were correlated with higher maternal competence. This finding suggests that children who did not defensively use avoidance as a strategy to deal with their frustration upon reuniting with their mothers, had mothers who were more effective in dyadic competence.

With regard to the relationship between attachment behaviors and the child's competence in dyadic play, analysis of the findings did demonstrate that high rates of proximity seeking behavior during Episode 5 was a strong predictor, accounting for up to 41% of the variance in the child's competence while at play with the mother. This finding resembles that of Slade (1987).

Proximity seeking behaviors are defined as those which are specifically intended to capture the mother's attention, protection, or soothing response. Proximity seeking is displayed in the child's efforts and initiative to get closer to the mother by crawling, walking, or reaching up to be picked up. These behaviors are considered an effective and healthy attachment strategy for receiving the mother's attention, in particular when the child is afraid or anxious.

The finding implies that for the present sample, this primary attachment strategy proved to be robust six months later, and was related to the child's dyadic competence later on. Bowlby explains this pattern of some children demonstrating higher rates of proximity seeking than others, and demonstrated dyadic competence at a later timepoint because they were able to trust that their mother would respond, would respond appropriately, and would not reject their efforts to gain her attention (Bowlby, 1969).

Proximity seeking and contact maintenance were the prominent behaviors during both reunion Episodes 5 and 8. These behaviors were highly correlated with one another. Contact maintenance refers to the child's efforts to continue contact with the mother, reflected in clinging, leaning, and resisting being put down from her embrace. The child clearly appears to be soothed by contact with the mother or to want more such soothing. Overall, the videos and their respective ratings showed that this sample of children wanted, sought, and made efforts to maintain contact

after the stress of being separated from their mothers. They were also able to effectively have these needs met.

Rates of resistance, and avoidance in particular, were very low. These strategies are defensive in nature, and imply a frustrated or problematic relationship. Resistant behaviors seem to reflect anxiety, anger and/or ambivalence. Examples were pushing the mother away, mixed with crying and possible efforts to have contact with her. The child appears frustrated and unable to organize her behavior, or to be soothed. Examples of avoidant behaviors were ignoring the mother and avoiding contact, such as turning away, avoiding eye contact or simply not responding to the mother's efforts to engage. Low rates of avoidant behaviors during Episode 8 were associated with high rates of maternal competence at 18 months. This finding may support the theory that maternal responsiveness and effective engagement with the child is associated with engagement or responsiveness by the child. When resistance was present, it was strongly correlated with crying, which is interpreted to reflect frustration when the child was unable to consistently expect the mother to be an immediate source of comfort. Rates of resistant behavior were not correlated with maternal competence at 18 months.

An additional finding is that rates of contact maintenance increased significantly from Episode 5 to 8, from a mean of 2.78 to a mean of 4.09, respectively. The second reunion episode is intentionally more stressful, as the child had been left alone in the playroom. It is expected that because the child would be more distressed, their attachment behaviors would intensify. This was found to be true, as demonstrated by the higher mean rate of contact maintaining behaviors from the first to the second reunion episode. These findings are similar to those reported in the

literature for White middle class samples, though not usually found with the few Latino samples discussed in the literature.

Similar studies focusing on a behavioral analysis of the attachment behaviors, without assigning rates of secure and insecure attachments, within ethnic minority dyads are unavailable. The few attachment studies of ethnic minorities, however, tend to find higher rates of insecure than secure attachment (Fracasso, 1987; Fracasso, Busch-Rossnagel, and Fisher, 1994; Zepeda, Santos, and Nevarez, 1997). It is possible that focusing exclusively on attachment behaviors, (without categorizing children into an attachment group) is a less compromising method of studying the quality of attachment, as found in this study. Focusing on the particular attachment behaviors avoids the global value-laden assessment of secure versus insecure, concepts developed and based on middle class populations. This requires further investigation by additional studies.

Hypothesis 2:

Previous studies have shown that high rates of stress (Conger, et al., 1984), a lack of social support (Belsky, 1984; Pascoe, Loda, Jeffries, and Easp, 1981) and a mother's perception of her child's temperament as difficult (Lee and Bates, 1985) are all associated with lower rates of maternal responsiveness during dyadic activity (Broussard, 1976; Egeland and Farber, 1984; Johnson and Rosen, 1990). Therefore, the second hypothesis stated that for this sample, high rates of stress, a limited social support network, and a perception of the child's temperament as difficult by mother's report would be predictive of low rates of maternal dyadic competence at 18 months.

A factor model was generated by a stepwise multiple regression. The hypothesis was partially sustained.

Regression analyses found that the best individual predictor of maternal competence, as measured by the PCOG, was whether the mother indicated that her child "fussed a lot" at 18 months of age. This item was one of 5 comprising the temperament variable as perceived and reported by the mothers. Despite the fact that participants offered generally positive or optimistic opinions of their child's temperament, mothers who perceived their child to fuss a lot at 18-months had lower rates of dyadic competence. This proxy for temperament explained 34% of the variance in the mother's dyadic competence. The concepts of fussiness or bothersomeness, may imply that a child is sensitive, high strung, or normally reactive. The mothers' ratings of this item may be associated with her expectations of the child's temperament, her tolerance level, as well as her own temperament which affects the child.

Although the mother's perception of her child's temperament was also assessed at 12-months, it can be speculated that the child's increased autonomy at 18-months affected the mothers' opinion. At 18-months the child may have been more difficult to handle or presented more challenges to these mothers, or they may have attributed their own problems to the child's behavior. Regardless of the mothers' rationale for perceiving the child as fussy, they had less effective dyadic competence while at play. Their perception of the child's fussiness was directly associated with the ability to engage with their child in an overall effective manner. This one item was more strongly or empirically associated with maternal competence, than social support, stress, or as previously discussed the child's attachment behaviors. This finding supports previous

research linking the dynamic effects of parental perceptions with parental behaviors (Broussard and Hartner, 1970; Sameroff, Seifer and Elias, 1982).

Coincidentally, at 18-months the women reported having very little overall social support and most did not receive help caring for the child, in comparison to support available at the perinatal and 12-month timepoints. Although not analyzed statistically, the mother's negative opinion of their child's fussiness may have been associated with a decrease in social support. Research has indicated that especially for single mothers, a lack of parenting support is associated with less effective dyadic interactions (Weinraub and Wolf, 1983).

The second best predictor of maternal competence at 18 months, was the level of stress experienced from living arrangements at the perinatal timepoint, despite the reported overall low stress levels. At the perinatal timepoint only five women lived with a male partner, while the majority lived with their family of origin, or alone. Although most mothers indicated feeling satisfied with their marital status at the time, which was single, they may have responded so in order to present themselves and their situation in a positive light. It may be that a sense of stress or conflict was created by beginning motherhood unsupported by the father. It may also be that crowding, as a consequence of bringing an infant and all of the relevant necessities, into the family of origin's apartment contributed to the stress in living arrangements. Researchers of low-income minority groups have addressed the negative effects of overcrowding on stress and parental responsiveness during early childhood (Halpern, 1990).

The mother's opinion of her child's fussiness in combination with stress from living arrangements accounted for a significant portion (62%) of the variance in parental competence.

Together, these findings resemble the work of Crnic, Greenberg, Ragozin, Robinson and Basham (1983) who found that the combination of lack of social support and stress during infancy was related to less effective parenting behavior.

The third best predictor was stress caused by relatives or friends at the perinatal timepoint. Although the women were not asked additional questions regarding the components of their stress, it can be speculated that the family's reaction to the pregnancy, the relationship with the child's father, or all the incumbent changes in the family structure may have contributed. Although the pregnancies may have been well received, the majority of the women were not married or living with the child's father, and presumably were not financially prepared. Positive changes or events are known to cause stress as well (Holmes and Rahe, 1967).

This model tells us that the mother's perception of the child's fussiness at age 18-months, and stress levels shortly after the child's birth (from living arrangements and relatives or friends) accounted for 82% of the variance in the mothers' competence at 18-months, a significantly large portion. These variables were much stronger predictors of parental competence than the quality of the child's attachment behaviors or the size of the social support network.

This finding is in support of previous studies showing that a mother's perception of her child is influential and impacts the nature of interactions with the child, especially during the second year (Broussard, 1976; Lee and Bates, 1985). For this sample of low-income Dominican and Puerto Rican mothers, perceiving their child as fussy had a strong impact on their ability to maintain effective dyadic competence. Thus, there is evidence that Latina mothers from these

Latino ethnic groups react in accordance with their perception or opinion of their child's temperament.

Hypothesis 3:

Previous research has indicated that communication between mother-child dyads is systemic, dynamic and reciprocal in nature (Brazelton, Koslowski, and Main, 1974; Kochanska, 1997; Leyendecker et al., 1997). This study used the concept of mutual competence in dyadic interaction from which to assess free play at 18-months (Goldberg, 1977). The third hypothesis stated that child and parental rates of dyadic competence would be positively associated with one another. The mother and child total scores on the PCOG were not correlated, indicating a lack of concordance within the dyads. This hypothesis was not sustained (Pearson correlation was .214).

It may be that the global score on the PCOG masks the contribution of particular items to each individual's score. Analysis of specific items on the PCOG did yield significant results. Particular behaviors on the part of the mother were predictive of her competence level.

For example, mothers who had accurate expectations of the child for the child's age, who treated the child with respect, who helped the child stay interested in a toy or activity, and remained patient with the child during the free play session had higher rates of maternal competence. These individual items are indicative of sensitivity by the mother, tapping into the affective realm. For this sample of mothers, instrumental behaviors focused on teaching were not associated with dyadic competence, such as presenting a toy to stimulate the child's interest, giving the child help and time to practice a skill with a toy, or teaching the child words or

language. This finding is in support of previous studies of Latina mothers also suggesting that teaching is not a common aspect of interactions (Okagaki and Sternberg, 1993).

On the part of the child, rates of competence were most correlated with their ability to invite an interaction or play activity with the mother. This behavioral item indicates that children who are able to initiate a dyadic exchange tend to demonstrate higher rates of dyadic competence overall. This finding is in support of previous studies that have shown a child's early social behavior in the context of the mother-child relationship, to be a good indicator of social competence (Coates and Lewis, 1984). Also, children who noticed their mothers smiling at them in several situations during the free-play session were more engaged with their mothers. These children were positively affected by the mother's smile as possibly indicative of fun, of enjoyment, positive mirroring, and therefore were more engaged themselves.

Limitations of the study

One of the limitations of this study was the small homogenous sample of subjects. Their demographic characteristics, responses and behaviors were likewise similar, therefore it was not possible to conduct a trends analysis of specific dyads over time. It is also not feasible to come to many generalizations about the links explored.

In terms of the predictor model generated by the second hypothesis, the size of the social support networks during the three timepoints were not included in the model. It can be speculated that for these women, the size of their network is not as relevant as expected. These women tended to rely on their family of origin, as opposed to a male partner, friends or professionals for

their needs (including material, instrumental, and emotional support). In particular, a sizable proportion looked to their own mothers for assistance with childcare, financial, personal and medical help. For this sample, one family member may have been sufficient to meet most of their needs, as opposed to compartmentalizing different needs into various relationships which may be more common among higher income groups. Latino families value solidarity and look to its members for assistance, as opposed to looking outside the family or to professionals (Zayas and Halleja, 1988; Zayas and Solari, 1994). Within that value orientation, seeking help is emphasized over self-reliance (Escovar and Lazarus, 1982).

Another construct biased by socioeconomic class and culture is stress. The concept of stress is relative, depending on the mothers' experiences, expectations and perceived capacities to cope. Although stress, with respect to living arrangements and problems with relatives or friends, predicted the mother's dyadic competence, these women reported very low levels of stress overall. For these women, problems with living arrangements may be tolerated and not experienced as stressful. These already low stress levels at the perinatal interview, decreased at the 12 and 18-month interviews. This finding is in contrast to prior studies reporting high stress levels in economically disadvantaged populations (Conger et al., 1984; Egeland and Farber, 1984; Pianta, Egeland and Sroufe, 1990).

The questions about stress were global, and did not refer to specific life events regarded as stressful in the relevant literature, such as illness, death of a family member, serious accidents. When asked to provide a non-specific stress level, the women may have reported low estimates either due to an elevated baseline of stress, as has been suggested by others (Halpern, 1990), or

possibly individuals grow accustomed to their situation and accommodate to their problems. It is important to note that very few studies have clearly documented a strong connection between low-income, high rates of stress and negative effects on parenting among Hispanics. Our findings also did not find such a connection with our subjects.

A problem found in analyzing data on the mother's relationship with the child's father was that information was not gathered in a uniform manner at each timepoint. Therefore it was not possible to compare across the time intervals. Despite this limitation, the subjects indicated that violent arguments were rare and they consistently were satisfied with their marital status.

It should be emphasized that stress scores, as well as information on social support, the relationships with the child's father, and perceptions of the child's temperament were all based on the participants' report. Therefore data should not be taken at face value. For example, that such low rates of stress, or lack of arguments with the child's father, were reported may also indicate that social desirability influenced their responses. These women may have felt that it was in their best interest to project a positive image of their life at home in order to appear competent. This would be understandable given their knowledge and/or experience regarding social service organizations and disadvantaged families such as themselves.

Recommendations for future research

This investigation should be repeated with a larger, and more varied Latino population of mother-child dyads. Variation should reflect income levels, age, as well as ethnicity. Future studies should include the use of an acculturation scale which inquires into the Americanization

of the participants. A well-designed acculturation scale would also lead to a better understanding of cultural practices and values as related to child-rearing.

Studies should target the first years of the mother-child relationship, given its significance in the child's psychological development and later functioning. Findings from well-conducted studies during early childhood could serve as a resource for clinicians treating these families in individual, dyadic and family therapy. Especially professionals developing parenting groups, or interventions in the home and preschool settings could benefit from the information generated. It would be important also to determine similarities and differences in mother-child dynamics based on ethnic background (ie. Dominican, Puerto Rican, Mexican, various groups from Latin or South America), instead of a global inclusion as "Hispanic" or "Latina".

Summary and Conclusion

This study represents an initial effort at understanding the mother-child relationship within a low-income predominantly Dominican sample of families living in Washington Heights, in New York City. It provided information on the roles of stress, social support, maternal perception of the child's temperament, and attachment behaviors on maternal and child dyadic competence for 23 dyads.

The main findings were that the mother's perception of her child as fussing alot at age 18 months was highly predictive of less effective maternal competence at 18 months. These mothers were affected in their ability to engage their child effectively by their internal representation of the child's degree of bothersomeness. It was speculated that the child's increased autonomy and

ability to communicate at 18 months, may have provided new challenges to the mothers who perceived them as too fussy. Although stress from living arrangements and problems with friends and family during the perinatal period were also predictive of maternal competence, this sample reported overall low rates of stress, in contrast to findings and discussion in the relevant literature.

The rates of proximity seeking and contact maintenance behavior by the children during separation-reunion episodes were not predictive of maternal dyadic competence. Similarly, social support was not associated with dyadic competence. Although maternal and child rates of dyadic competence were not concordant, particular behaviors while engaged in free play were associated with higher rates of dyadic competence for both the mother and child. For the mothers, those who had accurate expectations of the child for the child's age, who treated the child with respect, who helped the child stay interested in a toy or activity, and remained patient with the child during the free play session had higher rates of maternal competence. For the children, their ability to invite an interaction or play activity with the mother and noticing their mothers smiling at them in several situations during the free-play session was associated with higher rates of competence at 18 months. These findings have contributed to a better understanding of attachment and dyadic engagement for this sample, and toward the limited knowledge on parenting among low-income inner city Dominican mothers.

Appendix A

Social Support Measure

"Family and friendship networks can make an important difference in the standard of living and options available to family members. I'd like to explore with you the role that family members and friends play in your ongoing family life".

1. Who are the people that you count on?

Is there anyone else?

Is there anyone else?

2. What materials and help do you give to each other?

Do you help each other in other ways?

Do you help each other in any other ways?

3. Whom do you feel you can count on for help when there is a financial problem?

Is there anyone else?

Is there anyone else?

4. Whom do you feel you can count on for help with personal problems?

Is there anyone else?

Is there anyone else?

5. Whom do you feel you can count on for help with health or medical problems?

Is there anyone else?

Is there anyone else?

Appendix B**Stress Measure**

"I would like to understand the kinds of stress you and your family have experienced since the last time we saw you."

1. Since the last time we saw you, would you say that financial problems have caused your family stress?

3= most of the time

2= occasionally

1= once or twice

0= not at all

2. Since the last time we saw you, have living arrangements caused your family stress?

3= most of the time

2= occasionally

1= once or twice

0= not at all

3. Since the last time we saw you, have problems with relatives or friends caused your family stress?

3= most of the time

2= occasionally

1= once or twice

0= not at all

4. Since the last time we saw you, have problems with your spouse or male partner caused your family stress?

3= most of the time

2= occasionally

1= once or twice

0= not at all

Appendix C

Maternal Perception of Child's Temperament Measure

1. Does the baby eat well? Does the baby sleep well?

3= Baby is eating and sleeping well

2= Baby usually sleeps well but is a fussy eater

1= Baby does not sleep well but is a good eater

0= Baby is often colicky or when older does not eat or sleep well

2. Does the baby have a pretty regular schedule?

1=Yes

0=No

3. What does the baby seem to enjoy?

2= Specific activities (peek-a-boo, etc.)

1= General activities (eating, sleeping)

0= Nothing

4. Does the baby fuss a lot?

1= No

2= Sometimes/ Yes

5. Is the baby pretty easy to comfort?

0= No

1= Yes

Appendix D

PARENT-TODDLER OBSERVATION GUIDE
 (Toddlers 16-36 Months of Age)
 PARENT Profile
 c 1992 EKL 7/16/92

Observer _____

Name/I.D.# _____

Date _____ Parent age _____ Observation site: Home or _____
 Note relationship if other than the mother _____

Category	Question	Observed, Discuss, Plan Together	Ask Questions, Discuss, Plan Together
----------	----------	--	---

In General Does Parent:

(check best description in appropriate column)

- | | | | |
|--|--|-----|-----|
| I. Responding to Child's Need for Self-Expression | | | |
| a. | Help child learn self-control (prepare/remind)? | ___ | ___ |
| b. | Explain/show what child can/cannot do (set limits)? | ___ | ___ |
| c. | Remain patient with child? | ___ | ___ |
| d. | Help child avoid unnecessary conflict with child? | ___ | ___ |
| e. | Handle, treat, talk to child with respect? | ___ | ___ |
| | Note: Check Observed if child asserted self | ___ | ___ |
| II. Sensitivity to Child's Activity and Interests | | | |
| a. | Have accurate expectations of child for child's age? | ___ | ___ |
| b. | Act interested in, observe what child is doing? | ___ | ___ |
| c. | Respond positively to child's talking/look/touch/smile? | ___ | ___ |
| d. | Adjust/pace behavior to child (not over-stimulate)? | ___ | ___ |
| e. | Follow child's lead into new activity? | ___ | ___ |
| f. | When child is distressed, give help promptly? | ___ | ___ |
| g. | Hold child close when comforting child? | ___ | ___ |
| III Positive Feelings Shown to Child | | | |
| a. | Enjoy teaching child? | ___ | ___ |
| b. | Touch child affectionately? | ___ | ___ |
| c. | Smile at child in a variety of situations? | ___ | ___ |
| d. | Talk to child with a pleasant, warm voice? | ___ | ___ |
| e. | Enjoy playing with child? | ___ | ___ |
| IV. Helping Child Learn | | | |
| a. | Present toys to stimulate child's interest? | ___ | ___ |
| b. | Help child to stay interested in toy or activity? | ___ | ___ |
| c. | Give child help with and time to practice a skill? | ___ | ___ |
| d. | Converse with child; respond to child's language? | ___ | ___ |
| e. | Help child learn to talk (explain/expand/use sentences)? | ___ | ___ |

COMMENTS: _____

PARENT-TODDLER OBSERVATION GUIDE
 (Toddlers 16-36 Months of Age)
TODDLER Profile
 c 1992 REL 7/16/92

Observer _____

Name/I.D.# _____

Child's Age_years ___ months Child's Sex ___ Date of Birth _____

<u>Category</u>	<u>Question</u>	Observed, Discuss, Plan Together	Ask Questions, Discuss, Plan Together
-----------------	-----------------	--	---

In General Does Child:

(check best description in appropriate column)

I. Expression of Need for Self-Assertion

- | | | |
|--|-------|-------|
| a. Want to do and try new things for her or himself? | _____ | _____ |
| b. Claim ownership of objects? | _____ | _____ |
| c. Insist on having his or her own way? | _____ | _____ |
| d. Tell or gesture to the parent "No!"? | _____ | _____ |

II. Using Parent's Help (when frustrated, afraid or upset)

- | | | |
|--|-------|-------|
| a. Approach parent for comfort or security? | _____ | _____ |
| b. Allow parent to hold her/himself close when distressed? | _____ | _____ |
| c. Calm down quickly with parent's help? | _____ | _____ |
| d. Have no uncomfortably long period of upset (tantrum)? | _____ | _____ |
- Note: Check observed if child becomes distressed

III. Involvement with Parent

- | | | |
|---|-------|-------|
| a. Try to get parent's attention? | _____ | _____ |
| b. Look at parent's eyes in routines and play? | _____ | _____ |
| c. Join parent in activity or spend time near parent? | _____ | _____ |
| d. Invite interaction, activity or game with parent? | _____ | _____ |

IV. Positive Feelings Shown to Parent

- | | | |
|--|-------|-------|
| a. Like to touch or lean on parent (not distressed)? | _____ | _____ |
| b. Smile at parent in a variety of situations? | _____ | _____ |
| c. Enjoy playing with parent? | _____ | _____ |
| d. Greet parent eagerly (positively) after separation(s)?
(or eagerly approach parent if no separation) | _____ | _____ |

V. Language with Parent

- | | | |
|--|-------|-------|
| a. Chat with parent (a back-and-forth conversation)? | _____ | _____ |
| b. Use words to say what child wants? | _____ | _____ |
| c. Use words to label/point out things to parent? | _____ | _____ |
| d. Use words to ask questions (not just sounds)? | _____ | _____ |

Child's Temperament (Ask parent to answer this section)

(Check all adjectives that apply to child)

- | | | | |
|----------------|----------------|-----------|-------------|
| ___ cautious | ___ active | ___ fussy | ___ serious |
| ___ easy-going | ___ persistent | ___ eager | ___ curious |

PLAN: _____

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