The Relationship Between Preschoolers' Attachment, Social Competence, and Parenting Stress in Two Types of Child Care Arrangements.

Laurie Ann Hellstrom

A Thesis

in

The Department

of

Education

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Arts (Child Study) at
Concordia University
Montréal, Québec, Canada

July 1994

ISBN 0-315-97585-7

ABSTRACT

The Relationship Between Preschoolers' Attachment, Social Competence, and Parenting Stress in Two Types of Child Care Arrangements.

Laurie Ann Hellstrom

The present study was designed to investigate children's security of attachment to their mother in two types of child care arrangements. Security of attachment has been shown to be related to children's social competence (Cohn, 1990; Howes, Rodning, Galluzzo, & Myers, 1988; Jacobson & Wille, 1986; LaFrenière & Sroufe, 1985; Park & Waters, 1989) and level of maternal stress (Jarvis & Creasey, 1991; Moran, Pederson, Pettit, & Krupka, 1992; Nakagawa, Teti, & Lamb, 1992; Shaw & Vondra, 1993; Teti, Nakagawa, Das, & Wirth, 1991). Thirty-six 3-year-olds enrolled in on-site employer sponsored child care centres and thirty-six 3-year-olds enrolled in non-profit community child care centres participated in the study. Attachment was assessed via observations of departures and reunions at the child care centres using the Attachment Q-Set (Waters & Deane, 1985). Teacher ratings of the children's social competence in the classroom were obtained using a forty-four item Likert-type scale (Vandell & Corasaniti, 1988). The Parenting Stress Index (Abidin, 1986) was administered to mothers in order to determine level of parenting stress. Data pertaining to socioeconomic status and child care experience were obtained through parental interviews. Results revealed that security of attachment was not related to type of child care arrangement. Security of attachment was, however, related to teacher ratings of rejection on the social

competence measure. Maternal parenting stress was significantly and negatively related with the peer factor and the emotional well-being factor of the social competence measure. There was also a trend for the mothers of avoidantly attached children to report significantly higher parenting stress scores.

ACKNOWLEDGEMENTS

I would like to thank my thesis supervisor, Professor Ellen Jacobs for her guidance, encouragement and commitment to this thesis. I also thank my committee members, Dr. Miranda D'Amico and Dr. Sandra Weber for their constructive feedback.

I would also like to thank the children, parents, teachers, and child care centre directors for their enthusiastic cooperation in this research. I am especially thankful to Kristina Nagy for her valuable assistance in coding attachment classifications early in the mornings and late in the evenings, and to Andrea Farkas for her help with statistical analyses.

Many thanks to Sandy Gabriel, Louise Linschoten, Margaret Patten, Christina Rinaldi, Viviane Schami, and Donna Wilson-Mau for moral support and/or feedback on various drafts of this thesis.

Finally, I thank my parents, Ron and Fiona, my brother Scott, and Anthony Hobé for their love and understanding throughout all stages of this thesis.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

INTRODUCTION

A demographic reality of the past three decades has been the dramatic increase in the number of women in the labor force. In 1970, women formed approximately one-third of the total Canadian labour force, whereas by 1991 their share had increased to 45 % (Statistics Canada, 1992). Important changes have been noted for employed women with young children. Before 1981, mothers with young children under 3 years of age maintained lower participation rates in the work force than women overall. However, by 1991, more than half of all mothers with young children under 3 participated in the labour force. This percentage was slightly higher than the rate for all women (Statistics Canada, 1990). In Québec, the 1991 census figures reveal that the percentage of working women with children under 6 years of age was 66.3 % compared with 60.8 % in 1986 (Statistics Canada, 1993).

Notably, mothers with preschool children account for 65% of mothers who work full time. The distribution of spaces in day care centres according to the age of the child served is highest for the preschool age range (3 to 5 years), and consists of 58% of all spaces (Statistics Canada, 1990). Because the growing trend of women's participation in the work force is expected to continue into the next century, maternal employment presents implications for the family, the work place and child care.

The extensive use of child care is a part of family life in the 1990's. Maternal employment is the norm and in many cases both parents must work in order to keep family income above the poverty line. Parents can no longer rely on members of their extended family to care for their children. The trend towards increasing levels of maternal employment has spurred substantial research interest in the potential effects of nonmaternal child care on children's social and emotional development. A historical overview of maternal

employment, child care, and parent-child attachment research will be provided in the following section.

The issue of potential effects of child care on the mother-child attachment relationship was first raised by Blehar (1974). This study revealed that 2 and 3 year old children who had recently begun child care programs were more likely to exhibit behavioral patterns indicative of insecure attachments when they were assessed via the Ainsworth Strange Situation procedure. These results provoked controversy and led to several studies that attempted to replicate Blehar's findings (e.g., Brookhart & Hock,1976; Doyle, 1975; Moskowitz, Schwarz, & Corsini, 1977; Ragozin, 1980). None of these studies were able to replicate Blehar's findings, however it must be noted that the very same method and measurements were not replicated either. Failure to replicate Blehar's (1974) results led to the currently held consensus that nonmaternal care initiated after 24 months of age does not appear to affect the quality of the mother-child attachment relationship.

However, in this literature there is still an attempt to connect the relationship between early child care and the mother-child attachment relationship using a variety of different variables. Vaughn, Gove, and Egeland (1980) reported that infants in a low-income, high-risk sample who entered out-of-home care prior to their first birthday were significantly more likely to develop insecure attachment relationships with their mothers by 12 months of age than the home-reared children in the sample. They concluded that routine daily separations during the first year of a child's life contribute to an excess of avoidant attachments. The degree to which the family remained intact and stressful daily events were also found to influence attachment relationships. Similar results were also reported in a study with a middle-class sample (Schwartz, 1983). Schwartz found that avoidant attachment occured

significantly more at 18 months of age for children who attended full-time child care compared to a control group of children who had been reared at home for the first 18 months of life.

Other researchers have suggested that repeated, daily separations due to maternal employment constitutes a risk for the development of avoidant mother-child attachment relationships (Barglow, Vaughn, & Molitor, 1987; Belsky & Rovine, 1988; Jacobson & Wille, 1984). Barglow, Vaughn, and Molitor (1987) examined infant and family development to assess whether extensive nonmaternal care in the first year of life was associated with heightened risk for the parent-child attachment relationship. Previous studies on the relationship between child care and quality of parent-child attachment used samples from high-risk populations, or samples where the quality of the child care setting was questionable. This study was the first to report associations between early child care experience and avoidant attachment patterns in a large, well-controlled, low-risk, middle-class sample (N=110). Analyses revealed that a significantly greater proportion of infants whose mothers worked outside the home were assigned to the category insecure-avoidant as compared to infants whose mothers remained in the home throughout the first year of life. Evidence from this study indicated that early nonmaternal child care did seem to affect the quality of attachment.

Conversely, other studies which examined the relationship between attachment and maternal employment have found no significant differences (Chase-Lansdale & Owen, 1987; Owen, Easterbrooks, Chase-Lansdale, & Goldberg, 1984). Easterbrooks and Goldberg (1985) used a family systems orientation to study the effects of maternal employment on toddler development and parenting styles. Observations of 20 month old children and their parents on qualitative measures of attachment, problem solving behavior, quantitative

dimensions of family time allocation, and parental child rearing attitudes were assessed. Maternal employment was not related to outcomes of attachment or problem solving behavior, however, it was related to the amount of time mothers spent with their children and to child-rearing attitudes.

In 1988 Belsky presented a most controversial paper entitled 'The effects of day care reconsidered', in which he stated that nonmaternal child care arrangements for more than 20 hours per week in the child's first year of life may constitute a risk factor for developmental difficulties. Based on combined data from several studies examining maternal employment and the quality of parent-child attachment relationships, he argued that extensive early day care experience was associated with insecure attachment during infancy and increased aggressiveness and non-compliance during the preschool years. This work was soundly critiqued by researchers who questioned Belsky's evidence that child care placed infants at risk (Clarke-Stewart, 1988; Thompson, 1988). Clarke-Stewart argued that it was the mother's attitude towards the child, her emotional accessibility and behavioral sensitivity, and her desire for independence that should be further investigated when trying to account for associations between individual differences in children's emotional development and maternal employment. Furthermore, Thompson (1988) questioned the methodology used in the studies that Belsky presented as strong evidence for the association between maternal employment and insecure mother-child attachment relationships.

Research in the 1990's has begun to examine the relationship between different types of care (family care and centre care), and other factors such as the relationship between stress and low SES and social support, including family dynamics and how these variables influence children's personalities and experience to affect their emotional development (Scarr, Phillips, & McCartney,

1989). These researchers propose that child care must be seen in the context of the child's family life before concluding that child care per se affects attachment relationships.

While the research findings on the effects of maternal employment on children's attachment remains controversial, the issue of whether different types of nonmaternal child care influence the mother-child attachment relationship has been neglected in the literature. The comparison of two different types of child care and how they impact on the mother-child attachment relationship will be the focus of this thesis. The present work will consist of a literature review of attachment theory followed by empirical research examining the relationship between attachment and children's social development. The two types of child care arrangements that were selected for this study were: a) on-site employer sponsored child care, and b) non-profit community child care because they possess qualitatively dissimilar characteristics relevant to the study of attachment. These arrangements will be discussed in the following section.

Types of Child Care Arrangements

Employer-sponsored child care

Employer-sponsored child care is defined as "the involvement and support by an employer, labour group, or other organization in the provision of a child care facility and/or the delivery of a service for the children of employees or members" (Mayfield, 1990, p.2). There has been an increase in the number of work-related child care programs in Canada in the past ten years. Employer-sponsored child care can vary in form, such as on-site centres, off-site centres, information services, and referral services. The actual participation of the employer may consist of provision of capital and start-up costs, contribution of a certain percentage of the operating budget, free space, or the provision of services such as maintenance and accounting (Mayfield, 1985).

On-site employer sponsored child care

There are approximately 200 on-site child care programs in Canada today, which account for less than 3 percent of all licensed child care spaces available. On-site employer sponsored child care centres are situated at the actual place of employment, whereas, other employer-sponsored child care centres may be found nearby, but not actually at the place of work. In Montreal, there are currently 12 on-site workplace child care centres.

On-site employer sponsored child care centres were the first modern work-related child care programs in Canada and remain a common type of employer sponsored child care (Mayfield, 1990). This type of child care may be found in hospitals, universities, office buildings, or industrial settings. On-site employer sponsored child care provides numerous unique advantages that can have an impact on the parent-child relationship. Firstly, on-site child care allows for close proximity and accessibility of the parent to his or her child in case of an emergency, or simply for visits during the day (Waxman, 1991). A child's sense of security that comes from knowing his/her parents are nearby has possible implications for the mother-child attachment relationship (Mayfield, 1985a). Second, this arrangement provides access to child care in a convenient location with the provision of care for the hours required (Burud, Aschbacher & McCroskey, 1984). Other advantages of this type of centre are the additional time that the parent and child can spend together while travelling to and from work and that fees may be subsidized by the employee's corporation and the government. Employers may possibly benefit from this type of care through reduced absenteeism and increased productivity and improved morale (Mayfield, 1985).

Although the advantages of on-site child care have been well documented, disadvantages also exist. These may include a waiting list for

child placement, difficulty commuting with children during rush hours using public transportation, and leaving the company may be more difficult as the child's care is related to the parent's employment (Axel, 1985).

Non-profit community child care

Non-profit community child care centres channel any profit made back into the cost of running the child care centre, for example the purchasing of equipment and materials, maintenance, and salaries. Non-profit community child care centres are typically located within the community and government support is often provided to the parents on a sliding fee scale. Examples of common locations for non-profit community child care centres are schools, churches, apartment buildings, and community centres. An advantage of this type of child care centre is that it is usually open from very early in the morning until later in the evening and is thus able to accommodate the varied schedules of the parents. The non-profit community based child care centre is typically accessible by public transportation. Another important advantage may be that children can form friendships with other children from the same community. A disadvantage of this type of care is the inaccessibility of the parent to the child during the day, particularly in the case of an emergency. The child may also spend a longer day at the centre if the parent's workplace is situated at a distance from the community.

While the choices of child care arrangements available to parents are numerous, the particular characteristics that are unique to on-site employer sponsored child care requires further investigation with regards to the mother-child attachment relationship. The rationale for comparing on-site child care with the non-profit community child care lies in the qualitative differences of the two types of arrangements. This study investigates whether the physical characteristic of close proximity and the psychological characteristic of

accessibility of the mother to her child in on-site child care facilitates the development of a more secure mother-child attachment relationship, as compared to the non-profit community child care where the mother is inaccessible to her child during the work day. The relationship between the nature of attachment and children's social competence as rated by the child's caregiver is explored in this study. In addition, maternal parenting stress is examined in relation to security of attachment and type of care.

This thesis will attempt to answer the broad question of whether the type of child care arrangement a child experiences is related to the quality of the mother-child attachment relationship. The research literature has often linked security of attachment to children's social development. Securely attached preschoolers have been found to engage in more reciprocal interaction and exhibit less negative affect during play (Lieberman, 1977). The research of Waters, Wippman and Sroufe (1979) found that securely attached preschoolers were less withdrawn and hesitant with peers and displayed more peer leadership. It has also been shown that securely attached preschoolers demonstrated greater effectiveness and confidence in dealing with peers in their surrounding environment, which in turn leads them to be more attractive as playmates (Sroufe & Waters, 1977). Therefore, attachment might be an important factor that influences children's social development.

Given that on-site employer sponsored child care is increasing in popularity and demand, the possible advantages of this type of child care arrangement in terms of the mother-child attachment relationship and the social-emotional development of children are of importance to parents and corporations contemplating establishing on-site child care at their place of employment. Researchers have argued that the effects of maternal employment on children must also be understood within the context of other

social variables that may influence developmental outcomes in children (McCartney & Rosenthal, 1991). Therefore, additional variables related to maternal employment that may affect the mother-child attachment will also be examined in this study. These include family demographics (education, socioeconomic status) and parenting stress. The objectives of this thesis are to assess whether the characteristics of proximity and accessibility of the mother in the on-site child care arrangement are related to the child's security of attachment. Security of attachment will also be examined in relation to the teacher's perception of the child's level of social competence (Vandell & Corasaniti, 1988) and to the level of parenting stress experienced by the mother (Abidin, 1986). The following section will review the literature pertinent to this study.

Literature Review

Attachment has been defined as an emotional bond that may link a child to one or a few figures across time and space (Bowlby, 1973). A child comes to use another person as a secure base from which to explore the surrounding environment. Attachment can be thought of as a specific, enduring, emotional relationship that plays a paramount role in the process of socio-personality development (Lamb & Bornstein, 1987). Bowlby (1988) proposed that if a child knows a parent is accessible and responsive, he/she will feel secure enough to explore the surrounding environment. The proximity and accessibility of the attachment figure to the child varies according to type of child care arrangement. Therefore, it is of interest to study the relationship between maternal employment and children's attachment in two types of care: the on-site employer sponsored child care arrangement where the mother is close by and the non-profit community child care arrangements where the mother works

at a distance from the child. The following section will provide an overview of attachment theory.

Attachment Theory

According to Ainsworth (1992) attachment theory is especially concerned with emotional development from a life span perspective. The development of early emotional relationships with other people begins with an infant's attachment to parents or caregivers. Research in attachment focuses on observations in the ethological tradition, by examining the function and context of behaviors of infants, children, and adolescents and their need for attachment. The first empirical study of infant-mother attachment from an ethological perspective was carried out by Mary Ainsworth (1967). This project involved longitudinal naturalistic observations and home interviews of mothers and their infants in Uganda. Specific attachment related behaviors were recorded over a period of 9 months. From this research, Ainsworth noted individual differences in the mother-infant relationships and classified the relationships into three groups: securely attached infants who cried less when reunited with their mothers, insecurely attached infants who cried more when reunited with their mothers, and not yet attached infants who did not show differential behavior to the mother upon reunion.

Ainsworth and Wittig (1969) then proceeded to develop a laboratory observation procedure to examine infants' exploratory and attachment behavior at approximately 1 year of age in a series of standard situations in which there were different combinations of the infant, the mother, and a stranger. This sequence of absences and returns is called the Strange Situation and elicits striking differences in infant responses. These different responses are said to determine the quality of the infant-mother relationship and permit classification of mother-infant attachment from age ten to twenty-four months.

Through the use of the Strange Situation it was found that the majority of infants (60 to 65 percent) are classified as securely attached to their mothers. When the mother is present the securely attached child will occasionally seek proximity to the mother and touch her however, this behavior is intensified after being left alone in an unfamiliar setting. When the mother is present these infants feel comfortable enough to explore their surroundings even in an unfamiliar environment and they do not cling and whine, instead they exhibit curiosity and manipulate toys and other objects in the unfamiliar environment (Hetherington & Parke, 1986). A second classification (approximately 20 percent) is the avoidantly attached infant. This infant expresses little or no upset upon separation from the mother. When reunited with the mother, the infant actively avoids or ignores the parent's bid for interaction. A third classification (approximately 10 to 15 percent) is the ambivalently attached infant who shows frequent intense distress when the mother is both present and absent, or lacks interest and remains ambivalent when in contact with the mother. Common behaviors of infants observed in this classification include intermittent proximity seeking along with angry pushing away and rejection of the mother (Hetherington & Parke, 1986).

During the same time Ainsworth was conducting her laboratory experiments on attachment behaviors, Bowlby developed a theory of attachment that would mesh well with Ainsworth's findings. Bowlby (1969) postulated four phases in the development of infant-parent attachment beginning with 'newborn indiscriminate social responsiveness' from one to two months of age. Examples of attachment behaviors during this phase which help provide comfort and security by bringing the infant close to the caretaking adult include crying and smiling. During the second phase of 'discriminating sociability' from two to seven months of age, the infant associates pleasant

experiences and relief of distress with the parent, and prefers to interact with familiar people. In the third phase of infant-parent attachment, which lasts from seven to twenty-four months of age, there are two major behavioral changes which occur. The first change is that the baby begins to cry when left by an attachment figure and is not easily soothed by a substitute caregiver. The second change is the ability of the baby to crawl, which permits exploration of the environment and the capacity to move towards attachment figures.

The fourth stage in attachment refers to the 'goal-corrected partnership' whereby children become able to take into account their parents' needs when interacting with them. Attachment behavior is less visible under ordinary circumstances, however, when a child is stressed, attachment behavior emerges. From the age of 3 onward, children begin to think of their parents as independent objects with their own plans and behaviors. When both the mother and the child are able to gain and maintain proximity and contact with each other in a goal-corrected manner, it becomes possible for both to operate under a shared set of goals and plans. For example, both mother and child can share a plan for immediate physical contact when the child is approached by a stranger while playing at a distance from the mother in the park. The situation invokes a physical action of moving closer together on the part of the mother and child.

As the child's communicative skills improve, both mother and child are able to communicate their goals and plans more readily and may even attempt to change one another's behavior by directly affecting one another's goals and plans. For example, if the mother is busy talking with the child's caregiver upon arrival at the child care centre and the child indicates the desire for physical contact, the mother may communicate a plan that the child wait to be held until after the mother has finished her conversation. If the plan is accepted and then

carried out, the dyad can be viewed as operating under a single set of goals and plans, or as acting as a true 'partnership' (Greenberg, Cicchetti, & Cummings, 1990).

Characteristics that identify the attachment bond

There are three characteristics that distinguish attachment from other relational bonds. The first characteristic is 'proximity seeking' whereby the child will attempt to remain in close contact with the protective range of the attachment figure. The second characteristic is the 'secure base effect' whereby the presence of the attachment figure promotes security in the child and permits exploration and play to occur. The child learns to use the mother as the secure base, however, the mother must be predictable, consistent and available in order to provide a matrix around which the child can explore and organize effective attachment behavior (Waters, Kondo-Ikemura, & Richters, 1990). The third characteristic is that of 'separation protest' which arises when there is a threat to the accessibility of the attachment figure, and this brings about protest and active attempts to prevent separation.

Measures of Attachment

Research in attachment is progressing towards examining interpersonal relationships throughout later phases of development. These include the attachments of children to their parents, and the bond of parents to their children, bonds with other kin, sexual relationships, and bonds that occur within friendships. Apart from the Ainsworth Strange Situation procedure, various methods of assessing attachment have been developed for use with different populations. Family drawings of separation have been used to represent attachment qualities with 6-year-old children (Kaplan & Main, 1986) and interviews conducted with adults to delineate their attachment history (The Berkeley Adult Attachment Interview; George, Kaplan & Main, 1985). In order to

assess security of attachment in toddlers and preschoolers, Waters and Deane (1985) developed and validated an economical, behaviorally specific Q-sort methodology for assessing secure attachment behavior with this age group. This measure will be used in this study as it has been validated for use throughout the preschool period (Waters & Deane, 1985). The following section will review the studies conducted on attachment in relation to children's social competence.

Attachment and Social Competence

Individual differences in the quality of the child's relationship with an attachment figure are viewed as having an influence on the development of social competence in later relationships with others (Cohn, 1990). This belief is based upon both the psychoanalytically inspired hypotheses concerning the formative role of early mother-child interactions and the widely cited studies that report an association between attachment security and subsequent social skills with peers. This literature will be reviewed in the following section. Lamb and Nash (1989) postulate four ways to conceptualize the association between mother-child and peer relationships. First, they propose the notion that sociability with the mother serves as a precursor for sociability with peers. This model of how sociability emerges is upheld by attachment theorists. Second, there may be bi-directional influences with characteristics of peer relationships affecting the mother-child interaction and vice versa. In this view, both mother and child have an impact on the relationship. Third, it is proposed that capacities for relationships with peers and mothers develop concurrently from the beginning of life and at the same time sociability develops. Fourth, toddlers may come to master peer relationships by discovering skills that are needed to interact with peers that are different than skills required to interact with mothers. The literature on social competence and attachment is based on the first

hypothesis, that sociability with the mother is a precursor for sociability with peers.

According to attachment theory, securely attached children are viewed as having a history of an attachment relationship in which the attachment figure is accessible and responsive to the child's emotional needs. Bowlby (1973) proposed that secure relationships with parents might promote a child's growth of self-esteem along with a feeling of being worthy of love. Consequently, securely attached children may have more positive expectations about interactions with others. Because the attachment figure provides a secure base from which the child can explore, a securely attached child has an increased opportunity to develop self-confidence and competence in his/her actions (Turner, 1991). Conversely, children who are classified as insecurely attached are regarded as having an attachment history in which their emotional needs have not been met, or have been met inconsistently or insensitively. Children in this situation would have more negative expectations of interactions (e.g. rejection, unpredictability) with attachment figures which in turn might affect social competence (Turner, 1991).

Early findings concerning the association between Strange Situation behavior and peer competence emerged in a longitudinal study conducted by Waters, Wippman, and Sroufe (1979). Films of thirty-two 15 month-old infants interacting with their mothers in a novel situation consisted of 5 to 10 minutes of free play, the entrance of a stranger, and a 1-minute separation followed by a reunion with the mother. Based on reunion behavior, infants were classified in either the securely attached group or the anxiously attached group. When the children were 3 1/2 years old, naive observers administered Q-Set assessments of peer competence on the basis of 5 weeks of observation in a preschool classroom. The means of scores assigned by two independent raters

were summed to yield composite scores on two highly correlated 12-item scales. On 11 of the 12 peer competence items, there were significant differences between the two attachment groups. Therefore, this study provides evidence of differences in peer competence between the two attachment groups assessed two years earlier.

The quality of mother-infant attachment and its relationship to toddlers' initial sociability with peers has been investigated (Pastor, 1981). At 18 months infants were assessed in the Strange Situation procedure. Sixty-two children were classified as securely attached, anxiously avoidant, or anxiously resistant. Between the ages of 20 and 23 months thirty-seven toddler dyads of the same gender and age were observed in a 30-minute play session with the mothers present. The results of this study indicated that in the play situation securely attached toddlers were more sociable and more positively oriented towards the peer and the mother than the insecurely attached toddlers. Anxiously avoidant toddlers were found to actively participate in the play session but were rated more negatively in their orientation to both the peer and their mother. The anxiously resistant toddlers were shown to be highly stressed during the play situation; most peer offers were ignored and this group was most negative towards their mothers. This study revealed that individual differences among the toddlers emerged in the play situation, and that these differences were related to the quality of the mother-child attachment relationship at 18 months.

Two studies by Howes, Rodning, Galluzzo, and Myers (1988) have examined the influences of mother-child attachment relationships to mothers and child-caregivers attachment relationship on the child's behavior in child care centres. In both studies, attachment security with the caregiver within child care was assessed using the Attachment Q-Set (Waters & Deane, 1985). In the first study, 40 infants were observed in the Strange Situation (Ainsworth, 1978)

at 12 months and were later observed in child care when they averaged 21.5 months. In the second study, 60 infants were seen in child care when they averaged 18.5 months. Maternal attachment security was assessed using the Q-Set during child care separations and reunions at the beginning and end of child care. This method of observing separations and reunions has been commonly used to evaluate the parent-child relationship (Field, Gerwirtz, Cohen, Garcia, Greenberg, & Collins, 1988; Howes, Rodning, Galluzzo, & Myers, 1988).

In both studies, it was found that the child's level of competence in play with the adult caregiver and engagement with peers were a function of attachment security with both the mother and the caregiver. Children who were securely attached to their mothers, but insecurely attached to their caregivers, appeared more socially competent in child care than those children who were insecurely attached to both mother and caregiver. There were no significant differences for children categorized as insecurely attached to the mother and securely attached to the caregiver. This study demonstrated that secure mother-child attachment relationships, as well as secure caregiver-child relationships, influence social competence positively (Howes, Rodning, Galluzzo, & Myers, 1988).

A study by LaFrenière and Sroufe (1985) examined the peer competence of preschoolers and the relationship between infant-mother attachment. Forty 4 to 5 year-old first-born children from two preschool groups differing in classroom ecology (class size, number of children with behavior problems) were examined throughout a school year. Peer competence was assessed using five different measures: teacher rankings of social competence, peer sociometrics, behavioral observations of social participation, attention structure and social dominance. Teachers independently rank ordered children

in terms of competence after reading a brief definition of social competence provided by the investigators. Peer sociometrics were obtained via a picture sociometric interview in which the child named all of the children's photographs in the class and then made as many positive nominations as he/she wished. Ratings of social participation were obtained from event samples collected by three observers who then categorized activity using a modification of Parten's (1932) social participation scale. Attention structure was assessed using focal child time samples of visual regard. The attention rating was obtained by dividing the number of looks a child received by the number of observational sessions in which the child was present. Social dominance was evaluated by examining both verbal and nonverbal behaviors.

Two dimensions of peer competence were found: the first was an affiliative dimension which was based on peer popularity, social maturity and emotional warmth, the second was a power dimension which involved high peer status and positive and negative affect. Negative affect was defined as displeasure, frustration, or anger expressed through harsh commands, stamping feet, crying, or unrestrained attacks. It was demonstrated that children with secure attachment histories were higher on the affiliative dimension, whereas anxious-resistant children were lowest in peer status as measured by the peer sociometrics. Girls were more likely to demonstrate these patterns than boys. As a group, the securely attached girls were socially more outgoing, engaging their peers in predominantly positive interactions, and received a great deal of attention and esteem from their classmates. They were also viewed by their teachers as much more socially competent than either anxiously attached girls or securely and anxiously attached boys. This study revealed that security of attachment did influence children's social competence with their peers. Furthermore, the researchers found gender differences existed in

relation to attachment in the manner in which children behaved and how they were perceived by their teachers.

A study by Jacobson and Wille (1986) examined the influence of attachment on peer interactions from the toddler to the preschool period. Attachment was assessed using the Ainsworth Strange Situation at 18 months, from this eight children were classified as securely attached, eight as avoidantly attached and eight as ambivalently attached. The procedure was as follows: at age two each avoidant and ambivalent focal child was placed with an unfamiliar securely attached playmate and their interactions were observed during free play for a period of 25 minutes, and the quality of their interactions was recorded. At age three, the same dyads returned for an identical session. Results demonstrated that although the frequency of positive initiations did not vary with age, children exhibited more positive interactions towards their peers at age three. An "initiation" was defined as any act accompanied by a look directed towards the peer, physical contact, or an attempt to give an object to or take an object from the peer. Attachment was found to predict the responses directed to the focal child by the unfamiliar playmate. At age three, securely attached children received the greatest number of positive responses from peers. Conversely, the ambivalently attached children were found to be involved in more disruptive peer responses, resistance from the peer, and agonistic initiations (hitting peer or making a threatening vocalization) (Jacobson & Wille, 1986). This research provides evidence that children's interactions with peers in the classroom varies depending on the children's security of attachment at age 18 months.

Cohn (1990) examined the relationship between attachment and peer social competence in children at age six. Quality of attachment was assessed on the basis of reunion behavior following a one-hour separation from the

parent in a laboratory during the summer following the child's kindergarten year. Peer liking and behavior nominations, as well as measures of sociometric status were obtained were obtained during the fall in grade 1. The teachers completed both liking ratings and ratings of competence and behavior problems. Results demonstrated that insecurely attached boys were less well liked by both teachers and peers, were perceived as more aggressive by classmates, were rated by teachers as being less competent and as having more behavior problems than children classified as securely attached (Cohn, 1990). Thus, quality of the attachment relationship appears to influence children's behavior with peers in the classroom setting.

Park and Waters (1989) hypothesized that since attachment theory predicts the quality of the mother-child relationship, this would then have implications for children's social development. They explored whether security of attachment to mother was related to the quality of a preschooler's best friendships. Thirty-three 4 year-olds and their best friends participated in the study. Attachment Q-Set data were collected to score security of the mother-child attachment relationship. The security data were then used to classify the best friends as secure-secure, or secure-insecure. The best friends were then observed for a one hour free play session. The Dyadic Relationships Q-Set (Park & Waters, 1989) was used to evaluate each pair's behavior. Results demonstrated that secure-secure pairs were more harmonious, less controlling, more responsive, and happier than secure-insecure pairs. This investigation revealed that in a free play situation, security of attachment influences a child's behavior with their best friend.

The association between early parenting attitudes and attachment security have been examined in relation to peer interaction competence at ages six and seven (Kavesh, 1993). One hundred and thirteen children participated

in this study whereby peer competence was measured through observing dyads during a free play and a problem solving component. Mothers were also asked to provide data on their children's adjustment. Results indicated that infants who were classified as securely attached at age one year were more engaging and interactive at ages six and seven with an unfamiliar peer in an unstructured play setting. Maternal parenting attitudes were also found to be modestly correlated with peer competence. Contextual variables including stressful life events, maternal age, and education level significantly predicted children's social competence. This research provides evidence that security of attachment in infancy predicted peer social competence at ages 6 and 7.

The aforementioned studies provide evidence for the importance of security of attachment in mother-child relationships to a child's social development in terms of peer competence (Cohn, 1990; Kavesh, 1993; LaFrenière & Sroufe, 1983), social competence (Park & Waters, 1989), competence in play (Howes, Rodning, Galluzzo, & Myers, 1988), and engagement with peers and friends (Jacobson & Wille, 1986). Children's social competence has not been examined in different nonmaternal child care arrangements. Therefore, it is important to examine whether different types of child care arrangements affect the mother-child attachment relationship which in turn may have implications for the development of social competence in children.

Attachment and Maternal Parenting Stress

Stress can be defined as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p.19). Because employed mothers are faced with the challenge of coordinating both work and family responsibilities, there is the possibility of

inter-role conflict which happens when work and home roles create competing demands for time and attention (Greenhaus & Beutell, 1985). A study by Fernandez (1985) revealed that the level of stress in the home was related to having a supervisor who was not supportive about employees' child care needs. It is estimated that stress-related problems cost Canadian businesses $12 billion dollars a year through absenteeism, low productivity and illness linked to family needs (Statistics Canada, 1992).

Because parents today are faced with the lack of government-regulated subsidized child care, having a workplace child care arrangement readily available may ease the stress or problems associated with the work-family challenge. It is of importance to examine whether the benefits of an on-site employer sponsored child care arrangement are reassuring for working mothers and if this affects levels of parenting stress associated with raising a preschooler and employment. Therefore, the variable of maternal stress in relation to type of care and attachment will be examined in this study. Furthermore, a few studies have linked security of attachment to levels of maternal parenting stress, a brief review of the findings are presented in the next section.

Attachment and Stress Research

Parenting stress may be an important variable to consider when researching child care outcomes, simply because parents may be psychologically separated from their child due to actual stress, as well as physically separated due to the use of child care arrangements. The rationale for suggesting a psychological separation is worth examining since any parent who is chronically stressed may not provide the socioemotional cues and responses necessary to facilitate a secure parent-child attachment (Jarvis & Creasey, 1991). Research which examines levels of parenting stress and the

quality of the mother-child attachment relationship is fairly recent. Several studies (Bosso, 1985; Bosso, Corter, & Abramovitch, 1990; Valenzuela & Lara; Vaughn & Waters, 1990; Waters, 1987) have found a close correspondence between Q-Set security scores and Strange Situation classifications, but as yet they remain unpublished (cited in Teti, Nakagawa, Das, & Wirth, 1991). However, other studies have reported higher parenting stress scores among physically abusive mothers (Mash, Johnson, & Kovitz, 1983) and among mothers with children experiencing behavioral difficulties (Mouton & Tuma, 1988). These studies provide evidence that in different situations mothers exhibit varied levels of parenting stress.

A study by Teti et al. (1991) reported an association between security of attachment and levels of parenting stress as indicated by the Parenting Stress Index (1986). The researchers hypothesized that the Q-Set security scores of a sample of preschool-age children (N=49) and the Strange Situation classification of their younger siblings would be related positively to sensitive, affectively appropriate, flexible mothering styles. It was also predicted that the mothers of preschoolers with low security scores would experience more parenting stress than the mothers of preschoolers with high security scores. This prediction was based on the expected inability of mothers of insecure children to establish harmonious relationships with their children, compared to mothers with securely attached children. The procedure consisted of a mother-child free play observation in the laboratory in order to assess security of attachment. Mothers were then asked to complete the Parenting Stress Index as well as the Waters and Deane (1985) Attachment Q-Set. Results indicated that Q-Set security scores were positively related to sensitive, involved, and flexible mothering and to preschoolers' sociability towards the mother during laboratory free-play observations. Furthermore, Q-Set scores related negatively

to children's negative affectivity during free play, which included ratings of their irritability, avoidance and resistance, and aggressive/assertive behaviors. With regards to maternal parenting stress, results showed that mothers of insecure children reported higher stress scores than mothers of secure preschoolers.

A recent study by Jarvis and Creasey (1991) examined the relative impact of both physical (i.e. nonmaternal out-of-home care) and psychological (i.e. parenting stress) separation on infant attachments. The variable of coping as a mediator in the relationship between parenting stress and attachment for 32 intact families and their 18-month-old infants was also assessed. Twenty-one infants were cared for at home; 11 infants were cared for outside the home. Both mother and father completed the Attachment Q-Set (Waters & Deane, 1985), the Parenting Stress Index (Abidin, 1986), and a coping checklist. Background information such as socioeconomic status, parents' ages, parents' level of education, and hours per day parent was away from child were collected. No significant differences for attachment security were found on these variables. It was hypothesized that a positive relationship between parenting stress and insecure attachments would be found. In addition, it was expected that coping responses would have a mediating effect on parenting stress and infant attachments. Analyses indicated that parenting stress was significantly associated with insecure attachment. Therefore, the more stressed experienced, the less secure the parent-child attachment for both mothers and fathers. It was also concluded that the coping strategy of positive reappraisal is related to substantial reductions in the associations between parenting stress and attachment security. Therefore, mechanisms such as coping may reduce parenting stress and in turn may influence the mother-child attachment relationship. However, a limitation to consider in this study is the small sample size, especially for the insecurely attached classifications.

The effects of family stressors on security of attachment has been investigated in a sample of 100 low-income parent-child dyads (Shaw & Vondra, 1993). Infants were assessed using the Strange Situation procedure (Ainsworth & Wittig, 1969) at age 12 months. Family stressors examined were income, overcrowding in the home, parental criminality, depressive symptomatology, maternal personality risk, and perceived marital satisfaction. Results indicated that cumulative family adversity differed for secure versus insecurely attached infants, but only among families with 3 or 4 stressors present. Families with 3 or 4 stressors had significantly more insecurely attached parent-child relationships. In this study, the method for assessing stress differs from the other research in that stress related to parenting is not examined per se.

Nakagawa, Teti, and Lamb (1992) investigated the effects of life stress and support on parenting and attachment security among 53 Japanese mothers and their preschool-aged children living temporarily in the United States. In this study the Waters and Deane Attachment Q-Set (1985) was administered by the researchers after a visit in the home setting, mothers completed questionnaires relating to demographics, the Parenting Stress Index, a life experiences questionnaire, a daily hassels questionnaire, and a scale evaluating marital harmony. Correlational analyses revealed a negative relationship between level of parenting stress and attachment security. Therefore, the higher the reported parenting stress levels, the more insecure the mother-child attachment relationship.

The relationship between parenting stress and attachment has been addressed in a developmentally delayed sample by Moran, Pederson, Pettit, and Krupka (1992). Nineteen mothers and their developmentally delayed infants were selected from an infant stimulation program, and were assessed in

their homes using the Waters and Deane Attachment Q-Set (1985), and the Maternal Behavior Q-Sort (Pederson & Moran, 1990). Maternal sensitivity was also evaluated by the infants' therapists using Ainsworth's sensitivity scales, the Caldwell and Bradley (1984) HOME inventory, and the Bromwich (1981) Parent Behavior Progression which assesses parental involvement. Mothers were also asked to complete the Parenting Stress Index (Abidin, 1986). One purpose of this study was to examine the relationship between infant attachment and several measures of maternal behavior. Analyses indicated that security of attachment was related to measures of maternal sensitivity scores on the Maternal Behavior Q-Sort and the Ainsworth rating scales. Therefore, it appears that maternal sensitivity may influence childrens' emotional and intellectual development. Mothers of developmentally delayed children reported that their infants presented increased parenting difficulties, however self-reports of stress associated with parenting were not different from normative levels. The PSI was not related to security of attachment in this study. Interpretations of these results should be made with caution due to the small sample size, furthermore, the actual number of cases in each attachment classification were not mentioned.

The level of parenting stress experienced has been investigated in relation to security of attachment in the aforementioned studies. Some investigations reported a relationship between the two variables (Jarvis & Creasey, 1991; Shaw & Vondra, 1993; Teti, Nakagawa, Das, & Wirth, 1991) whereas, other studies have found no relationship (Moran, Pederson, Pettit, & Krupka, 1992; Nakagawa, Teti, & Lamb, 1992). It is of importance to examine whether differences exist in level of maternal parenting stress in different types of child care arrangements, and whether maternal parenting stress is related to security of attachment.

The Present Study

The present study was designed to investigate the relationship between the type of child care arrangement selected and the quality of the mother-child attachment relationship. Based on the review of maternal employment and attachment literature, it is important to examine whether on-site child care arrangements facilitate the mother-child attachment relationship. Waters et al. (1990) emphasize that the attachment relationship develops throughout childhood. Research on employment and attachment has tended to focus on the effects of early nonmaternal care on infants and toddlers, however, women are remaining in the work force throughout their childrearing years. Further investigation of the mother-child attachment relationship throughout the preschool years will contribute to a more detailed description of the developing attachment relationship.

This study will assess whether the characteristics of close proximity and accessibility of the mother to her child in the on-site child care facilitate the development of a more secure mother-child attachment relationship, as compared to the non-profit community child care where the mother is inaccessible to her child during the work day. Furthermore, the literature has demonstrated a relationship between security of attachment and children's level of social competence as well as perceived levels of maternal parenting stress. Therefore, these variables will also be examined in relation to type of child care arrangements.

Thirty-six 3-year-olds (17 males, 19 females) attending on-site employer sponsored child care centres and thirty-six 3-year-olds (19 females, 17 males) attending non-profit community child care centres participated in the study. First, mothers were asked to complete a questionnaire pertaining to their level of parenting stress. Second, following a system developed by Howes and

Hamilton (1992), observations of the mothers and children's departures and reunions in the child care centres were used to classify the attachment relationship using the Waters and Deane Q-Set (1985). A reason for selecting this procedure for classifying attachment was based on the premise that observations of naturally occurring mother-child interactions in a common and frequented setting may be more ecologically valid than observations in a laboratory setting (Greenberg, Cicchetti, & Cummings, 1990). Third, the caregivers in each class were asked to evaluate the children's level of social competence in the classroom using White's adaptation of the Vandell and Corasaniti (1988) teacher rating scale. Figure 1 provides an overview of the independent variables under investigation.

Research Questions

The following research questions were investigated:

1. Based on observations of departures and reunions at the different child care centres, children who attend on-site employer sponsored child care centres should be classified as more securely attached than children who attend non-profit community child care centres, as measured by the Attachment Q-Set (Waters & Deane, 1985). This prediction is based on attachment theory which hypothesizes that children who maintain close proximity and accessibility to their attachment figure will develop a secure attachment relationship. Thus, it is expected that the on-site child care characteristics of proximity and accessibility will facilitate the development of a secure mother-child attachment relationship.

2. Research has demonstrated that preschoolers who are rated as securely attached exhibit increased levels of social competence (Cohn, 1991; Kavesh, 1993; LaFrenière & Sroufe, 1983). Therefore, it is predicted that

children who are rated as securely attached will receive higher ratings on the Vandell and Corasaniti Teacher Rating Scale (1988).

3. Research has begun to examine the relationship between security of attachment and high levels of parenting stress (Jarvis & Creasey, 1991; Nakagawa, Das, & Wirth, 1991). It is expected that mothers with children who are securely attached will report lower levels of parenting stress than mothers whose children are insecurely attached as measured by the Parenting Stress Index (Abidin, 1986).

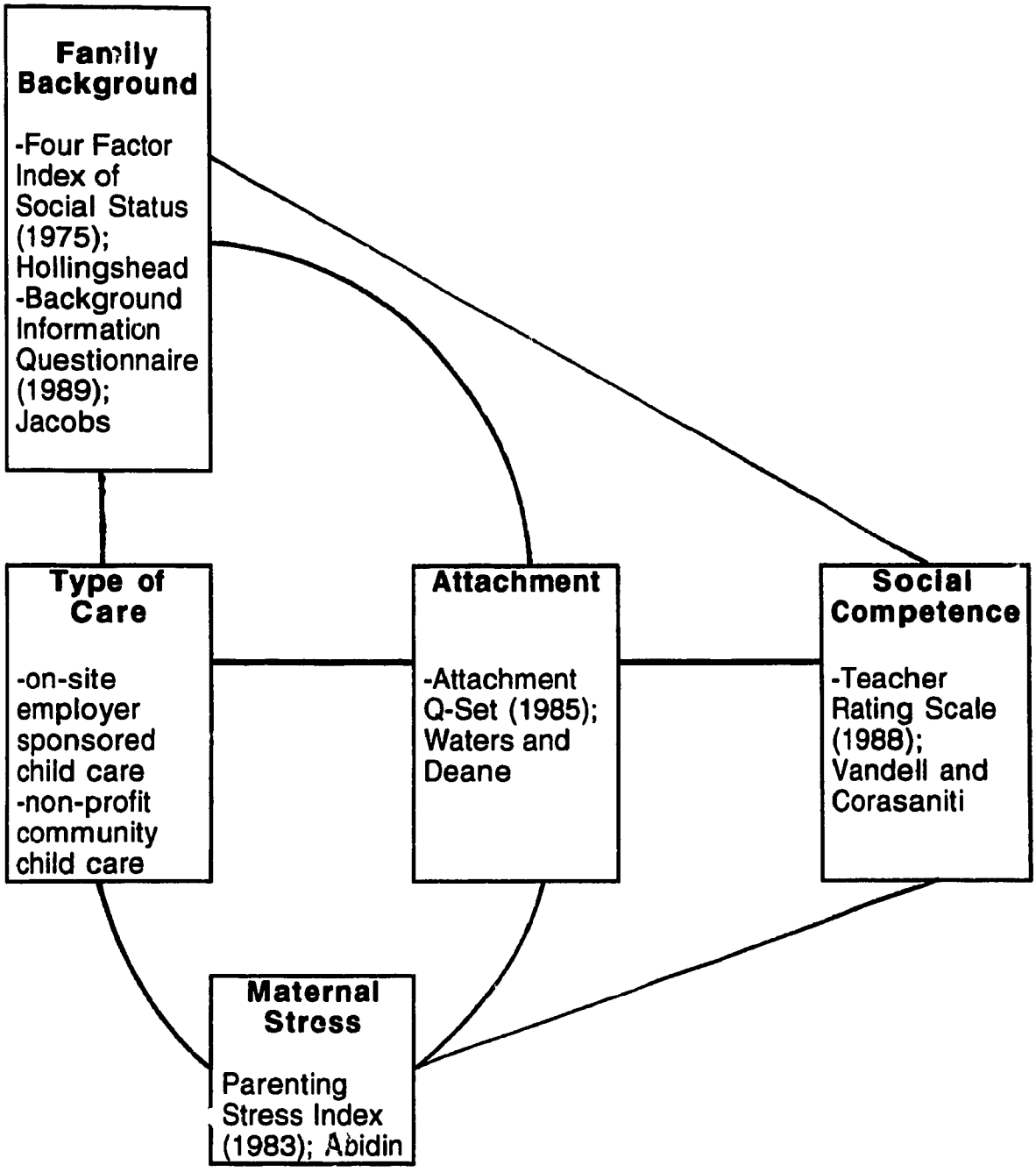


Figure 1 Ecological model of variables under investigation.

METHOD

Subjects

The sample for this study was selected from on-site employer sponsored child care centres and non-profit community child care centres in the Greater Montreal area. Seventy-two 3 year-olds and their mothers participated in this study. Thirty-six children were selected from 5 on-site employer sponsored child care centres (3 hospital settings and 2 corporate settings) and thirty-six children from 5 non-profit community child care centres. The participating children's mean length of previous child care experience was 19.8 months. The two types of child care arrangements were of similar quality as measured by the Early Childhood Environment Rating Scale (ECERS) (Harms & Clifford, 1980).

Procedure

Five child care directors from on-site employer sponsored child care centres and five directors from non-profit community child care centres were contacted by telephone to obtain permission to conduct the study in their centres. The initial contact was followed by an explanatory letter and a meeting with the director and educators. The letters of explanation and the consent form were brought to the child care centres and the educators were asked to distribute them to the parents of the 3-year olds. A sample of the letter of explanation and the consent form can be found in Appendix A.

A phone interview with each consenting mother was conducted to obtain background information concerning child care history and socioeconomic status. The mother was also given the questionnaire to complete and return in a stamped, addressed envelope.

To assess and classify the mother-child attachment relationship, two trained researchers observed and coded at least five departures and five

reunions for each child when the children were dropped off at and picked up from the child care centre. The observer training involved familiarization with the individual Attachment Q-Set items (Waters & Deane, 1985), followed by a week of pilot observation sessions of 10 children who did not participate in the study. Observations normally took place in the classroom or just outside the entrance to the classroom. Observation sessions varied depending on the hours of operation of the centre and the times the participating children were dropped off and picked up. Generally, drop off time was between 7 -9 a.m. and pick up time was between 4-6 p.m.. The Waters and Deane Attachment Q-Set (1985) was used to classify the attachment relationship.

Finally, the early childhood educators were asked to complete a version of the Vandell and Corasaniti (1988) rating scale which examines the social competence of children in the child care setting (White, 1989). The educators either returned the rating scale to the researcher at the end of the observation sessions or if more time was required, a stamped addressed envelope was provided.

Measures

Child Care Arrangements. The consenting parent was interviewed by telephone using the Background Information Questionnaire (B.I.Q.). The trained interviewer obtained detailed information regarding the child's current and past child care experience. Questions that were asked included: the type of care, the location of the care, the number of children in the care environment, and the numbers of hours that the child spends in the specific child care arrangement. Other information regarding parents' occupation and education was also obtained during the telephone interview. A copy of the B.I.Q. can be found in Appendix B.

Socioeconomic status (SES). The Hollingshead Four Factor Index of Social Status (1975) was used to determine the socioeconomic status of the participating families. This index considers SES to be a multidimensional concept and includes scores for occupation, education, sex of the parent, and marital status. Hollingshead (1975) developed the scale for education based on the United States school system and consequently this has been adapted for the Quebec school system to include CEGEP studies. The educational scale consists of seven categories ranging from elementary education to graduate professional training; this information is then used for the calculation of SES. The computation of SES can be found in Appendix C.

Occupation was scored on a nine-point scale which was matched, when possible, to occupational titles used in the United States Census (1970), however some titles were altered due to their lack of precision. The scores range from 8 to 66 and the scale was validated through analyzing data collected from the 1970 United States Census. A positive correlation between years of education and type of occupation was found. Therefore, the higher the level of education the higher the occupational standing of the person. The equations that were used to compute SES can be found in Appendix C.

Verbal Skills. The Peabody Picture Vocabulary Test-Revised (Dunn, 1981) was administered to every subject and was used as a control measure to ensure that all the children had a minimum level of receptive vocabulary. The children's vocabulary was assessed in order to eliminate the possibility that receptive language may influence children's interactions with their peers in the classroom. This test was selected because it is easy to administer, and it has good validity and reliability. Split-half reliability ranged from .67 to .88. The PPVT has good construct validity, it is correlated with other vocabulary tests and with vocabulary subtests of individual intelligence and psycholinguistics tests,

for an overall median value of .71, based on 55 correlations. The adapted French version of this test, L'Echelle de Vocabulaire en Images Peabody (Dunn, Thériault-Whalen, & Dunn, 1993) was used with francophone subjects.

The test was administered in a separate room to avoid disrupting the classroom routine. Time was spent in conversation with the child in order to establish a rapport before they were shown a number of plates which consisted of four black and white pictures, each of which depicts a particular word. The researcher said a test word and the child was asked to point to that word. The researcher stopped the test when the child missed six out of eight answers. A copy of both versions of the test can be found in Appendix D.

Maternal Stress. The Parenting Stress Index (P.S.I.) (Abidin, 1986) was used to assess mothers' feelings of stress in relation to their preschool aged children. The PSI measures the degree of parenting stress in relation to the child (demandingness, mood and adaptability) and parental dimensions (sense of competence and depression) and is reported to be valid and reliable (Abidin, 1986). The reliability for the total stress score on the PSI is .95. Evidence of the PSI's concurrent validity was established when the Parent Domain score was found to be significantly correlated with a measure of state-trait anxiety, with a coefficient of .62. The PSI is comprised of two major parenting stress domains. Based on a sample of 534 parents, this scale reports good construct, content, concurrent, factorial and discriminant validity and very adequate internal validity (Abidin, 1986). The Child Domain is composed of six dimensions: adaptability, acceptability, demandingness, mood, distractibility/hyperactivity and if child reinforces parent. The Parent Domain consists of seven dimensions including: attachment, depression, restriction of role, social isolation, sense of competence, parent health, and relationship with spouse.

Two specific scores were used in this study. The attachment subscale of the Parent Domain and the total parenting stress score on the PSI were calculated. Abidin (1986) reports that the critical cut off for total score for high parenting stress in families where the child is above 3 years of age is 250. When evaluating the attachment subscale the presence of a high score (16 or higher), indicates two possible sources of dysfunction. The first problem is that the parent lacks an emotional closeness to the child and that this absence of emotional bonding may be reflected in a 'cold' pattern of parent-child interaction. The second source of dysfunction is that a high score on the attachment subscale may indicate a parent's real or perceived inability to accurately understand the child's needs or feelings. The normal range on the attachment subscale is between 9 and 14. A copy of the PSI can be found in Appendix E.

Teacher's perception of child competence. A modified version of the Vandell and Corasaniti rating scale (1988) was used to obtain the teacher's perception of the child's level of social competence (White, 1989). Vandell and Corasaniti's rating scale consists of 32 items regarding specific classroom behavior which can be divided into four categories: behavior towards peers, task orientation, compliance and emotional well-being. Examples of items include "is difficult to discipline"; "acts independently of the teacher"; "talks to other children". Teachers rated the child's behavior on a scale of 1 to 5, for example 1 meaning "always shares toys" and 5 meaning "never shares toys".

Vandell and Corasaniti (1988) evaluated the rating scale with a sample of 349 third graders who attended seven different elementary schools in Dallas, Texas. Cronbach's coefficient alphas were calculated for the four categories and reported an alpha of .91 for behavior towards peers, .85 for task orientation, .82 for emotional well-being, and .85 for compliance. A modified version of the

rating scale was used in this study which was adapted by White (1989), and it consists of 12 additional items along with the original Vandell and Corasaniti items. The additional items are related to children's peer relationships. As a result, four new categories were formed: aggression, withdrawal, rejection, and liked. Cronbach's coefficient alphas were calculated based on a sample of 333 children ranging from kindergarten to grade 2, in the Montreal area. The reported coefficient alphas were .88 for the aggression category, .85 for the withdrawal category, .89 for the rejection category, and .77 for the liked category. A copy of the rating scale can be found in Appendix F. Items 33 to 44 represent the modified version of the scale.

Mother-child attachment relationship. The Attachment Q-Set (Waters & Deane, 1985) was used to assess the child's level of attachment. This instrument was designed to provide systematic observation of a child's behavior with caregiving adults in ecologically valid settings. The Q-Set is well suited for this study as it has been shown to be valid throughout the preschool period (Waters & Deane, 1985). The Q-Set consists of 90 items or descriptive statements of the child's behavior towards an adult. These items are sorted into nine piles so that a normal distribution of most characteristic descriptions (9) to least characteristic descriptions is formed. However, for the purpose of this study only 67 items were used. The 23 items that were dropped were behaviors that would not have been visible during observations at the child care centres. "At home, child gets upset or cries when mother walks out of room" is an example of an eliminated item. The validity of the Attachment Q-Set has been established with the Ainsworth Strange Situation, a reliable measure of attachment (Vaughn & Waters, 1990).

Two observers coded both the departures and the reunions for 66% of the children. The first observer was blind to the hypotheses of the study. The

remaining children were coded by the researcher. Prior to the data collection, inter-rater reliability for the attachment Q-Set was established by having the two observers independently complete Q-Sets for ten children based on observations of departures and reunions in a child care centre. These children did not participate in the study. Attachment classifications were established based on a procedure developed by Howes and Hamilton (1992). The two observers observed between ten and twelve departures and reunions for attachment classification purposes. Observers independently completed the Attachment Q-Set for each child once the observation sessions were completed. Inter-rater reliability was conducted prior to and throughout data collection and an overall Kappa coefficient of .90 was achieved. The Attachment Q-Set can be found in Appendix G.

Classification of the attachment relationships: From observations of departures and reunions at the child care centre, children were classified into three relationship categories according to observer ratings from the Attachment Q-Set of the mother-child relationship. This procedure was developed by Howes and Hamilton (1992) using correlations between the Q-Set ratings and security scores and by cluster analysis of Q-Set items. There are three types of attachment classifications based on the Q-Set items: securely attached, avoidantly attached and ambivalently attached.

A securely attached child had to receive a 7 or higher on the following Q-Set items: predominant mood is happy, easily comforted, solicits comfort, greets adults spontaneously, flexible in communication, and obedient; and a 3 or lower on the following items: unaware of adult changes in location, no physical contact with adult, expects the adult to be unresponsive, and not compliant. For a child to be classified as avoidantly attached a score of 7 or higher must have been obtained on the following items: unaware of adult changes, no physical

contact, expects adult to be unresponsive, demanding initiation, and a score of 3 or lower on cries often. To be classified as ambivalently attached a child must have scored a 7 or higher on: expects adult to be unresponsive, demanding and impatient, distressed social interaction, and cries often, and a score of 3 or lower on physical contact. Each child was only classified in one category.

Quality of the child care arrangements. The Early Childhood Environment Rating Scale (Harms & Clifford, 1980) was used to assure similar quality of care in both the on-site employer sponsored child care centres and the non-profit community child care centres. Quality of child care may influence the attachment relationship and the social competence of the children in the classroom. Therefore, it was essential that the participating centres were of similar quality. Two observers rated the child care environments in terms of use of space, materials and experiences to enhance child development, and daily schedule and level of supervision provided. The scale consists of 37 items which allow for a room-by-room evaluation which assesses routines for the personal care of children, room furnishings and display, fine and gross motor experiences, language experiences, social development activities and adult needs (Harms & Clifford, 1980). Individual items range from a low of 1 to a high of 7 where a rating of 3 indicates minimally acceptable quality, and 5 indicates very good quality. A sample of the coding sheet is provided in Appendix H. All centres in this study received a rating of 5 or higher indicating that the participating centres were of good quality.

Design

T-tests were used to determine whether there were any initial differences on any of the variables under investigation between the two types of child care groups. T-tests and one way ANOVA's were conducted examining all variables by type of care and by security of attachment. Pearson Product Moment

Correlation Coefficients was used to examine the relationships between each independent variable (family background, type of child care arrangement, and maternal stress) with the outcome measures of attachment security and social competence. Stepwise regression analyses were performed in order to determine which of the independent variables best predicts security of attachment and social competence.

RESULTS

This section will begin with descriptive data for the whole sample. Since two types of child care arrangements were examined in this study, preliminary analyses were conducted for the independent variables to determine whether group differences exist. In addition, descriptive data will be presented separately for both the on-site employer sponsored child care group and the non-profit community child care group. The research questions will be investigated in the following order: (1) the attachment classification of children in the on-site employer sponsored child care centres compared to the children in the non-profit community child care centres (Waters & Deane, 1985), (2) comparisons of children's level of social competence with attachment classifications and type of care, (3) comparisons of level of maternal parenting stress with attachment classification and social competence.

Descriptive data for whole sample

The total sample consisted of 72 subjects for whom complete data were available. The range, mean and standard deviation for each of the variables included in the analysis can be found in Table 1. As can be seen in Table 1, there is a wide range of scores in the total sample for SES, PPVT-R scores, age in months, hours per week in child care, and total number of months spent in child care. The mean SES score is middle-class, however the ratings range from lower to upper class. The age of the children was between 30 and 54 months with a mean age of 40.7 months for the whole sample.

Variable selection and limitations

The number of subjects in this study made certain restrictions inevitable. Due to the small cell sizes in certain attachment classifications, it was necessary to analyze attachment as either secure or insecure. Therefore, insecure

Table 1

Ranges, means, and standard deviations for all variables for whole sample

Variable	Range	Mean	Standard Deviation
SES	23-66	50.82	8.96
PPVT-R score	64-136	98.40	15.03
Age in months	30-54	40.68	4.47
Hours per week in child care	16-45	35.72	6.17
Number of months in child care	2-39	19.79	9.58
peer factor	27-45	37.39	3.38
task factor	9-19	14.64	2.29
compliance factor (Vandell)	2-9	5.90	1.54
emotional well-being factor	15-26	20.08	2.69
aggression factor	21-40	26.68	4.06
withdrawal factor	14-35	28.14	3.45
rejection factor	5-19	9.76	3.37
liked factor	18-34	26.33	3.46
compliance factor (White)	10-21	15.49	2.50
PSI score	153-291	219.59	31.23
PSI parent attachment score	7-18	12.09	2.56

attachment is comprised of both ambivalent attachment and avoidant attachment. Unless otherwise specified, the analyses of attachment classifications will consist of secure attachment and insecure attachment.

Descriptive data comparing on-site employer sponsored child care and non-profit community child care

The sample was divided into two groups on the basis of type of child care arrangement. The first group was composed of 36 subjects who attended on-site employer sponsored child care centres (17 boys and 19 girls). The second group consisted of 36 subjects who attended non-profit community child care, (19 boys and 17 girls). The means and standard deviations for all the variables under investigation for the on-site employer sponsored child care group and the non-profit community child care group can be found in Table 2. As can be seen in Table 2, the two groups have similar means for the majority of the variables.

Differences between the two type of child care arrangements

T-tests were conducted to see whether the two groups differed on any of the variables under investigation. Table 3 provides means, standard deviations and probability values for all variables by type of child care arrangement. As can be seen in Table 3, four variables yield significant differences between the on-site employer sponsored child care group and the non-profit community child care group. The non-profit community child care group scored significantly higher on the withdrawal factor of the social competence measure than did the on-site employer sponsored child care group. The second finding showed that the non-profit community child care group scored significantly higher on the rejection factor of the social competence measure than did the on-site employer sponsored child care group. The third finding revealed that the on-site employer sponsored child care group scored significantly higher on the compliance factor (White) of the social competence measure than the non-profit

Table 2

Means and standard deviations for all variables for on-site employer sponsored child care versus non-profit community child care groups

	On-Site Child Care	Non-Profit Community Child Care
Variable	Mean (S.D.) n=36	Mean (S.D.) n=36
SES	51.22 (8.51)	50.42 (9.50)
PPVT-R scores	96.06 (15.84)	100.74 (14.01)
Age in months	39.86 (4.68)	41.50 (4.14)
Hours per week in child care	35.28 (6.71)	36.17 (5.64)
Number of months in child care	21.78 (9.37)	17.81 (9.50)
peer factor	37.77 (3.76)	37.03 (2.97)
task factor	14.86 (2.32)	14.42 (2.27)
compliance factor (Vandell)	5.97 (1.56)	5.83 (1.54)
emotional well-being factor	20.56 (2.83)	19.60 (2.49)
aggression factor	26.00 (4.12)	27.31 (3.96)
withdrawal factor	27.44 (4.21)	28.83 (2.32)
rejection factor	9.00 (3.36)	10.50 (3.26)
liked factor	26.53 (3.84)	26.14 (3.08)
compliance factor (White)	16.08 (2.62)	14.89 (2.25)
PSI score	220.81 (30.80)	218.38 (32.11)
PSI parent attachment score	12.47 (2.59)	11.72 (2.51)

Table 3

Differences between on-site employer sponsored child care versus non-profit community child care groups

	On-Site Child Care	Non-Profit Community Child Care	
Variable	Mean (S.D.) n=36	Mean (S.D.) n=36	P value
SES	51.22 (8.51)	50.42 (9.50)	.71
PPVT-R scores	96.06 (15.84)	100.74 (14.01)	.19
Age in months	39.86 (4.68)	41.50 (4.14)	.12
Hours per week in child care	35.28 (6.71)	36.17 (5.64)	.55
Number of months in child care	21.78 (9.37)	17.81 (9.50)	.08 *
peer factor	37.77 (3.76)	37.03 (2.97)	.36
task factor	14.86 (2.32)	14.42 (2.27)	.41
compliance factor (V)	5.97 (1.56)	5.83 (1.54)	.71
emotional well-being factor	20.56 (2.83)	19.60 (2.49)	.14
aggression factor	26.00 (4.12)	27.31 (3.96)	.19
withdrawal factor	27.44 (4.21)	28.83 (2.32)	.09 *
rejection factor	9.00 (3.36)	10.50 (3.26)	.06 *
liked factor	26.53 (3.84)	26.14 (3.08)	.64
compliance factor (W)	16.08 (2.62)	14.89 (2.25)	.04 **
PSI score	220.81 (30.80)	218.38 (32.11)	.76
PSI attachment score	12.47 (2.59)	11.72 (2.51)	.24

* $p < .10$
** $p < .01$

community child care group. The number of months in child care experienced by the preschoolers differed for the two groups. Children in the on-site employer sponsored child care group had significantly more child care experience than did the non-profit community child care group.

Gender differences for all variables under investigation

T-tests were conducted in order to determine whether any gender differences existed for the whole sample on all the variables in question. The analyses yielded significant differences on three variables. Girls received higher ratings on the peer factor of the social competence measure than boys . The second finding showed that boys received higher ratings on the aggression factor of the social competence measure than girls. A third result demonstrated that mothers of boys reported significantly higher levels of parenting stress, as measured by the PSI, than mothers of girls. Table 4 summarizes gender differences for the entire sample.

Descriptive data of Q-set attachment classification for whole sample (Waters & Deane, 1985)

The Waters and Deane Attachment Q-Set (1985) was used to determine attachment classifications based on completed observations of departures and reunions of the mother and child at the child care centre. The Q-Set attachment classification for the total sample of 72 subjects can be found in Table 5. Seventy-eight percent of the children were classified as securely attached to their mother, 17% were classified as ambivalently attached to their mother, and 5% were classified as avoidantly attached to their mother. Each child was classified in only one of the aforementioned categories. These classifications are comparable to the other North American attachment classification distributions reviewed by Sagi and Lewkowitz (1987) in a cross-cultural evaluation of attachment research.

Table 4

Gender differences for all variables for whole sample

	Male	Female	
Variable	Mean (S.D.) n=36	Mean (S.D.) n=36	P value
SES	50.66 (8.95)	51.00 (9.11)	.87
PPVT-R scores	97.36 (13.46)	99.50 (16.67)	.56
Age in months	41.32 (4.60)	40.00 (4.28)	.21
Hours per week in child care	36.43 (6.02)	34.97 (6.33)	.32
Number of months in child care	18.97 (9.41)	20.66 (9.81)	.46
peer factor	36.46 (3.55)	38.41 (2.90)	.01 ***
task factor	14.24 (2.06)	15.06 (2.47)	.14
compliance factor (V)	5.78 (1.32)	6.03 (1.76)	.51
emotional well-being factor	19.72 (2.47)	20.46 (2.89)	.25
aggression factor	27.57 (4.26)	25.76 (3.68)	.06 *
withdrawal factor	28.51 (2.51)	27.74 (4.22)	.35
rejection factor	10.31 (3.43))	9.20 (3.26)	.17
liked factor	25.95 (3.53)	26.74. (3.39)	.33
compliance factor (W)	15.11 (2.41)	15.89 (2.56)	.19
PSI score	229.88 (28.48)	208.98 (30.94)	.007 ****
PSI parent attachment score	11.67 (2.26)	12.55 (2.80)	.17

* $p < .10$
*** $p < .01$
**** $p < .001$

Descriptive data of Q-set attachment classification by type of child care arrangement

The attachment classifications for the on-site employer sponsored child care group and the non-profit community child care group can be found in Table 6. Eighty-three percent of the children from the on-site employer sponsored child care group were classified as securely attached to their mother, whereas 72% of the children from non-profit community child care centres were classified as securely attached to their mother. Twice as many children were classified as ambivalently attached in the non-profit community child care group (22.2%) as compared to the on-site employer sponsored child care group (11.1%). Avoidant attachment classifications were equal (5.5%) for children in both types of child care arrangements.

Attachment classification by type of child care arrangement

To investigate the first hypothesis that children who attend on-site employer sponsored child care centres would be classified as more securely attached to their mothers than children who attend non-profit community child care centres, a chi-square was computed to determine whether secure attachment classifications were significantly higher in the on-site employer sponsored child care group as compared to the non-profit community child care group. There was no significant relationship between type of child care arrangement and attachment classification (X^2= 1.62, n.s.). Thus, type of child care arrangement and attachment classification are independent (p=.45).

Descriptive data for all variables by attachment classification

In order to determine whether the variables under investigation differed for the attachment classification groups, t-tests were performed on each variable comparing those in the secure attachment versus insecure attachment groups. Due to the small sample size of the avoidant classification (n=4), insecure

Table 5

Percentages and number of attachment classifications for whole sample

secure attachment classification	ambivalent attachment classification	avoidant attachment classification
77.8 (56)	16.7 (12)	5.5 (4)

Note Percentages are presented first; number of classifications are presented in parentheses.

Table 6

Percentages and number of attachment classifications by type of child care arrangement

Attachment Classification	On-site Child Care n=36	Non-profit community child care n=36
Secure Attachment	83.33 (30)	72.22 (26)
Ambivalent Attachment	11.11 (4)	22.22 (8)
Avoidant Attachment	5.55 (2)	5.55 (2)

Note Percentages are presented first; number of classifications are presented in parentheses.

attachment consists of both the ambivalent classification and the avoidant classification combined. Means, standard deviations and probability values are presented in Table 7. No variables yielded significant differences between the securely attached group and the insecurely attached group.

Since there were no significant differences between securely attached and insecurely attached group on any of the variables under investigation, t-tests were performed on the securely attached group and the ambivalently attached group, without collapsing the ambivalent and avoidant classifications. Table 8 provides the means, standard deviations, and probability values for the secure attachment and ambivalent attachment groups. The ambivalently attached children were rated significantly higher on the rejection factor of the social competence measure, compared to the securely attached children. No other variables were significantly different for these two groups.

A t-test comparing the securely attached group with the avoidantly attached group was performed. As can be seen in Table 9, three variables revealed important trends. The first finding is that the avoidantly attached group attend child care for more hours a week than do the securely attached group. The second finding revealed that the securely attached group received higher ratings by their caregivers on the emotional well-being factor of the social competence measure, than did the avoidant group. The third finding demonstrated that mothers of avoidantly attached children scored significantly higher on the parenting stress measure (PSI), compared to mothers of securely attached children.

Upon review of the qualitative observations of the departures and reunions at the child care centres, these trends were confirmed. The four avoidantly attached children were consistently the last children to be picked up from their respective centres on a regular basis. The psychological impact of

consistently being the last to be picked up may have affected the children's emotional well-being. Furthermore, the fact that the mothers of avoidantly attached children worked significantly longer hours per week may have influenced their level of parenting stress. These trends require further investigation, however, they reveal important information regarding avoidant mother-child attachment relationships. In the present study, caution must be taken in interpreting these findings due to the small sample size of the avoidant attachment classification group.

Social competence and attachment classification

In order to investigate the second hypothesis that children who are securely attached to their mother would receive higher ratings of social competence on the teacher rating scale, analyses were conducted on the social competence factors and attachment classifications. T-tests comparing the securely attached group with the ambivalently attached group revealed a significant finding on one of the variables. Ambivalently attached children were rated higher on the rejection factor than securely attached children. Analyses were also conducted comparing the securely attached group with the avoidantly attached group on the various factors of social competence. A t-test indicated that the securely attached children were rated higher on the emotional well-being factor than the avoidantly attached children. Further analyses of variance were conducted on the social competence variables by attachment classification. No significant differences were found on any of the social competence variables when comparing attachment classifications.

To further examine the relationship between the independent variables of type of child care arrangement, SES, and gender on preschoolers' social competence, stepwise regression analyses were performed. Attachment classification, type of child care arrangement, SES and gender were regressed

Table 7

Means and standard deviations for all variables by attachment classification: secure versus insecure

Variable	Secure Attachment Mean (St.Dev) n=56	Insecure Attachment Mean (St.Dev) n=16	P value
SES	50.07 (8.61)	53.44 (9.93)	.23
PPVT-R scores	97.83 (14.65)	100. 31 (16.64)	.60
Age in months	40.79 (4.74)	40.31 (3.42)	.66
Hours per week in child care	35.95 (5.89)	34.94 (7.24)	.62
Number of months in child care	20.11 (9.44)	18.69 (10.27)	.62
peer factor	37.35 (3.52)	37.56 (2.92)	.81
task factor	14.70 (2.24)	14.44 (2.52)	.72
compliance factor (Vandell)	6.02 (1.48)	5.50 (1.71)	.28
emotional well-being factor	20.18 (2.90)	19.75 (1.80)	.48
aggression factor	26.51 (3.95)	27.25 (4.48)	.56
withdrawal factor	28.07 (3.51)	28.38 (3.32)	.75
rejection factor	9.62 (3.70)	10.25 (1.88)	.36
liked factor	26.43 (3.77)	26.00 (2.10)	.56
compliance factor (White)	15.59 (2.40)	15.13 (2.90)	.56
PSI score	224.00 (37.98)	218.47 (29.61)	.63
PSI parent attachment score	12.46 (2.79)	12.00 (2.51)	.59

Table 8

Means and standard deviations for all variables by attachment classification: secure versus ambivalent

Variable	Secure Attachment Mean (St.Dev) n=56	Ambivalent Attachment Mean (St.Dev) n=12	P value
SES	50.07 (8.61)	54.75 (9.42)	.13
PPVT-R scores	97.83 (14.65)	101.25 (17.35)	.54
Age in months	40.79 (4.74)	40.33 (3.60)	.71
Hours per week in child care	35.95 (5.89)	33.25 (7.69)	.27
Number of months in child care	20.11 (9.44)	18.75 (9.96)	.59
peer factor	37.35 (3.52)	37.92 (3.18)	.45
task factor	14.70 (2.24)	14.17 (2.13)	.64
compliance factor (V)	6.02 (1.48)	5.75 (1.82)	.92
emotional well-being factor	20.18 (2.90)	20.25 (1.82)	.92
aggression factor	26.51 (3.95)	26.67 (4.58)	.91
withdrawal factor	28.07 (3.51)	28.17 (2.66)	.92
rejection factor	9.62 (3.70)	10.83 (1.59)	.08 *
liked factor	26.43 (3.77)	25.50 (1.98)	.23
compliance factor (W)	15.59 (2.40)	15.17 (3.10)	.66
PSI score	224.00 (37.98)	215.11 (41.89)	.82
PSI attachment score	12.46 (2.79)	11.89 (2.98)	.92

* $p < .10$

Table 9

Means and standard deviations for all variables by attachment classification: secure versus avoidant

Variable	Secure Attachment Mean (St.Dev) n=56	Avoidant Attachment Mean (St.Dev) n=4	P value
SES	50.07 (8.61)	49.50 (11.82)	.93
PPVT-R scores	97.83 (14.65)	97.50 (16.30)	.97
Age in months	40.79 (4.74)	40.25 (3.30)	.78
Hours per week in child care	35.95 (5.89)	40.00 (0.00)	.001 ****
Number of months in child care	20.11 (9.44)	18.50 (12.79)	.82
peer factor	37.35 (3.52)	36.50 (1.92)	.47
task factor	14.70 (2.24)	15.25 (3.78)	.79
compliance factor (V)	6.02 (1.48)	4.75 (1.26)	.13
emotional well-being factor	20.18 (2.90)	18.25 (0.50)	.001 ****
aggression factor	26.51 (3.95)	29.00 (4.24)	.33
withdrawal factor	28.07 (3.51)	29.00 (5.35)	.75
rejection factor	9.62 (3.70)	8.50 (1.73)	.31
liked factor	26.43 (3.77)	27.50 (1.92)	.37
compliance factor (W)	15.59 (2.40)	15.00 (2.58)	.69
PSI score	224.00 (37.98)	244.00 (17.83)	.06 *
PSI attachment score	12.46 (2.79)	13.75 (2.06)	.19

* $p < .10$
**** $p < .001$

on the first step for each of the eight factors of the social competence measure.

Results demonstrated that gender accounted for a significant proportion of the variance in predicting the peer factor (R^2= .08, F (1, 69)=6.37, p< .05). The three other variables in the regression equation did not contribute to the explained variance. A second finding revealed that care status accounted for a significant proportion of the variance in predicting the compliance factor (White) (R^2= .06, F (1, 70)=4.30 , p< .05). Again, the other three variables did not contribute to the explained variance. Since the stepwise regressions performed yielded only simple regressions, no additional information can be gained from the regression analyses that is not found in the t-tests.

Maternal stress and attachment classification

To investigate the third hypothesis that insecure mother-child attachment relationships would be related to higher levels of maternal parenting stress as reported on the PSI (Abidin, 1983), the total parenting stress score was analysed. When examining the securely attached versus the avoidantly attached group, mothers of avoidantly attached children scored significantly higher on the total parenting stress score than did mothers of securely attached children. No significant differences were found when comparing any other attachment classifications and the PSI score. However, gender has a significant effect on levels of maternal parenting stress. As indicated in Table 4, a t-test revealed that mothers of boys reported significantly higher levels of parenting stress on the PSI than mothers of girls.

Pearson product-moment correlation coefficients were used to examine the relationship between total PSI score and the other variables under investigation. As can be seen in Table 10, the PSI score is significantly and positively correlated with the age of the child (r= .26, p<.05). A second finding indicated that the total PSI score is significantly and negatively correlated with

Table 10

Pearson correlations between PSI score and variables under investigation for whole sample

	PSI score
SES	- .12
PPVT-R scores	- .06
Age in months	. 26 **
Hours per week in child care	.23
Number of months in child care	.07
peer factor	- .26 **
task factor	- .03
compliance factor (Vandell)	- .08
emotional well-being factor	- .28 **
aggression factor	.21
withdrawal factor	.13
rejection factor	.11
liked factor	- .13
compliance factor (White)	- .04
PSI parent attachment score	.38 ***

** $p < .05$
*** $p < .01$

the peer factor of the social competence measure (r= -.26, p<.05). A third result demonstrated that the total PSI score is significantly and negatively correlated with the emotional well-being factor of the social competence measure (r= -.28, p<.05). A fourth finding revealed that the PSI score is significantly and positively correlated with the PSI attachment score (r= .38, p<.01).

Pearson product-moment correlation coefficients were also used to examine the relationship among PSI score and the other variables under investigation for each of separate attachment classification groups. Mothers of securely attached children had PSI scores that were significantly and negatively correlated with the peer factor of the social competence measure (r= -.35, p<.05). Furthermore, mothers of securely attached children had PSI scores that were significantly and positively correlated with the aggression factor (r= .30, p<.05). Table 11 summarizes the findings for the securely attached group. No relationship between PSI scores of mothers of ambivalently attached or avoidantly attached children were found for any of the variables of interest.

Table 11

Pearson correlations between PSI score and variables under investigation for secure attachment classification

	PSI score
SES	-.06
PPVT-R scores	-.09
Age in months	.26
Hours per week in child care	.19
Number of months in child care	.08
peer factor	-.35 **
task factor	-.11
compliance factor (Vandell)	-.02
emotional well-being factor	-.25
aggression factor	.30 **
withdrawal factor	.15
rejection factor	.20
liked factor	-.16
compliance factor (White)	-.06
PSI parent attachment score	.27

** $p < .05$

DISCUSSION

The main goal of this study was to investigate the relationship between the proximity of the child care arrangement to the mother's employment and its influence on the mother-child attachment relationship. The two types of child care arrangements under investigation were the on-site employer sponsored child care centres and the non-profit community child care centres. A second goal of the research was to examine the relationship between security of attachment and children's level of social competence in the classroom according to teacher ratings. A third goal was to explore the variable of maternal stress and background variables in relation to attachment and social competence. Overall, the present study did not find support for the hypothesis that type of child care arrangement is related to the mother-child attachment relationship. However, type of child care did predict the compliance factor (White) of the social competence measure. Partial support for the hypothesis that security of attachment would influence children's social competence was demonstrated. Insecurely attached children exhibited significantly higher scores on the rejection factor (White) and the emotional well-being factor (Vandell) of the social competence measure, compared to securely attached children. Levels of maternal parenting stress did not differ for the attachment classifications or for type of child care arrangement, however, mothers of boys reported significantly higher levels of parenting stress than did mothers of girls. Maternal parenting stress was also significantly and negatively correlated with the peer and emotional well-being factors of the social competence measure, and positively correlated with the aggression factor (White).

This section will first discuss initial differences between the on-site employer sponsored child care group and the non-profit community child care

group for particular variables. Second, the major findings will be addressed, along with limitations of the present study and suggestions for future research. Finally, implications for parents and educators will be presented.

Initial group differences between type of child care arrangement

A preliminary analysis revealed differences between the on-site employer sponsored child care group and the non-profit community child care group. There was a trend exhibited for the on-site employer sponsored child care group, whereby children had significantly more months of child care experience than did the non-profit community child care group. A possible explanation for this difference is that because these mothers had an accessible child care arrangement at their place of work, they may have returned to work earlier than the non-profit community child care mothers.

There was also a trend for the children in the non-profit community child care group to receive higher ratings on the withdrawal and rejection factors of the social competence measure. Preschoolers who attend child care have multidimensional relationships with adults. Ideally, child care teachers provide a language-rich, cognitive learning environment and through caregiving and socialization roles they allow the child to establish trusting relationships with other adults and peers (Sroufe, 1983). A recent study by Howes, Hamilton, and Matheson (1994) provides a possible explanation for initial differences among the two types of child care arrangements. Results of the Howes et al. (1994) study indicated that children with secure attachment relationships to the teacher displayed lower levels of hostile aggressive and withdrawing behaviors and higher levels of prosocial behaviors in the classroom. Positive teacher-child socialization was associated with a higher perceived peer acceptance, whereas negative teacher-child socialization was negatively associated with complex peer play and friendly enactment. Therefore, the teachers in the two types of

child care arrangements may have influenced the children's behavior in different ways, depending on the socialization roles they have established for the children in their classrooms.

Another initial group difference was that children in the on-site employer sponsored child care group were rated significantly higher on the compliance (White) factor of the social competence measure. Perhaps the child's awareness of the mother's presence nearby influenced their classroom behavior. Children who attend on-site child care centres know their parents are in close proximity (Waxman, 1991). Coincidences of seeing a parent while children take outings, lunch time visits, or visiting the parent's office creates for the child an awareness of the close physical proximity between themselves and their parent. As well, due to the parent's close physical proximity to their child, mothers at on-site centres may have increased opportunity to participate in outings, to speak informally with the caregiver, and to communicate information to the caregiver regarding concerns about her child's progress. The degree to which the mother is involved in the daily routines of at the child care centre may in turn influence the child's classroom behavior. There were no other initial group differences found for any of the remaining variables.

Major findings of the present study

Factors related to Attachment Q-Set classifications (Waters & Deane, 1985). Until this present research, the relationship between on-site employer sponsored child care and non-profit community child care on the mother-child attachment relationship had not been addressed. Analyses of the attachment classifications according to type of child care arrangement revealed no significant differences. This finding can be compared with previous research which examined home reared and child care children and found no differences in security of attachment (e.g. Chase-Lansdale, 1987; Owen, Easterbrooks,

Chase-Lansdale, & Goldberg, 1984). However, there was a higher percentage of secure attachment classifications for the on-site employer sponsored child care group compared to the non-profit community child care group. As well, there were twice as many ambivalent attachment classifications in the non-profit community child care group. Although type of child care arrangement and attachment classification were found to be statistically independent, if the sample size were increased perhaps a different trend might emerge. Thus, the first hypothesis that on-site employer sponsored child care would exhibit a greater number of secure mother-child attachment relationships is rejected.

Factors related to children's social competence (Vandell & Corasaniti, 1988). Analyses of the attachment classification in relation to children's level of social competence in the classroom yielded support for the second hypothesis that insecurely attached children would exhibit lower scores on the social competence measure. Ambivalently attached children were rated significantly higher on the rejection factor of the social competence measure by their caregivers, compared to the securely attached children. This finding is in line with previous research of Jacobson and Wille (1986) on peer interaction which demonstrated that ambivalently attached children were involved in more disruptive peer responses, resistance from peers, and agonistic initiations (hitting peer or making a threatening vocalization) in a free play situation. Furthermore, the research of Pastor (1981) revealed that in a free play session, children who were rated as anxiously resistant were highly stressed, and they ignored peer offers more often than securely attached children. The finding of the present study is also in line with the research by Cohn (1990) which examined peer social competence in children at age 6. Insecurely attached children were found to be less well liked by both teachers and peers, were perceived as more aggressive by classmates, and were rated by teachers as

being less competent and as having more behavior problems than children classified as securely attached.

Further analyses of the avoidantly attached group revealed a significant trend. The avoidantly attached children were rated significantly lower on the emotional well-being factor of the social competence measure. Similarly, LaFrenière and Sroufe (1985) reported that children with insecure attachment histories scored lower than securely attached children on the affiliative dimension of peer competence which consisted of peer popularity, social maturity, and emotional warmth. Due to the small sample size of the avoidant classification group, this finding can only be considered a trend, however, it is consistent with previous research.

Apart from attachment influencing children's level of social competence, the variable of gender accounted for significant differences; girls received significantly higher ratings from the teachers on the peer factor than did boys. Boys were rated significantly higher on the aggression factor of the social competence measure. Studies investigating interactive behaviors of preschool children have provided evidence that boys tend to be more active, aggressive, and impulsive, and girls tend to be more passive, compliant, and prone to anxiety and the need for adult approval (e.g. Block, 1983; Hyde, 1984; Maccoby & Jacklin, 1980). These findings are consistent with previous reports on gender differences among preschool interactive behaviors.

Type of child care arrangement was shown to predict the compliance (White) factor of the social competence measure. Children who attended on-site employer sponsored child care were rated by their teachers as more compliant than children who attended non-profit community child care. Again, a reason for this finding may be explained due to the fact that children who attend on-site child care may be more compliant if they are aware that their mother is

nearby. Opportunities for communication between the caregiver and mother may be greater in the on-site employer sponsored child care group. Therefore, on-site child care arrangements may be advantageous in that children's social behaviors are positively influenced.

Factors related to maternal stress (Abidin, 1986). Although the total PSI score did not reveal any differences among the securely attached and the ambivalently attached groups, mothers of the avoidantly attached children reported significantly more parenting stress than mothers of securely attached children. Therefore, tentative support for the third hypothesis was found. A study by Teti, Nakagawa, and Wirth (1991) revealed similar results whereby mothers of less secure children reported significantly more stress in the maternal role than did mothers of more secure children, as demonstrated by the negative correlation between total PSI scores and the Q-Set scores. A possible explanation for this may be attributed to the fact that these children attended child care centres for more hours a week than the securely attached children. Working longer hours may have affected these mothers' level of parenting stress. Again, caution must be taken in interpreting these findings due to the small sample size of the avoidant attachment classification group. However, a trend may be noted that mothers of avoidantly attached children experienced higher levels of parenting stress than mothers of securely attached children.

An unexpected finding showed that mothers of boys reported significantly higher levels of maternal stress, compared to mothers of girls. This finding has not been demonstrated in the literature. Studies using the PSI have found differences in stress levels of parents with hyperactive children (Mash & Johnston, 1983); developmentally delayed children (Saviano, 1981); and physically abused children (Mash, 1983). A possible reason for mothers of boys reporting more parenting stress is that boys tend to be more active,

impulsive, and aggressive (Maccoby & Jacklin, 1980). The boys in this sample were rated significantly higher on the aggression factor of the social competence measure than the girls. Perhaps the boys in this sample were very active and these behaviors may have affected the mother's reported parenting stress.

Maternal parenting stress was shown to be significantly and negatively correlated with the peer factor and the emotional well-being factor of the social competence measure. This finding provides new evidence for the relationship between maternal stress and children's social competence. Although many studies have documented the relationship between stress and maladaptive outcomes among adults (Bolger, DeLongis, Kessler, & Schilling, 1989; Pruchno & Resch, 1989), relatively few studies have related parenting stress to child developmental outcomes. However, ecological models of human development (e.g., Bronfenbrenner, 1979; Belsky, 1981) support the notion that contextual variables within the family system might dramatically affect the parents' functioning which could adversely affect their interactions with their children. Therefore, if parents are experiencing high levels of parenting stress, this may affect how they interact with their children. Lamb and Nash (1983) propose that sociability with a parent serves as a precursor for future sociability with peers. A highly stressed parent may not be able to function adequately as a positive role model for social behavior, therefore, this in turn may influence the children's social interactions with their peers.

A positive correlation was found between the total parenting stress score and the attachment score on the parent domain. This correlation indicates that the more parenting stress experienced by the mother, the more likely the attachment relationship is affected detrimentally. This finding is consistent with the research of Jarvis and Creasey (1991) which demonstrated that parenting

stress was significantly and positively associated with insecure mother-child attachment relationships. Therefore, parenting stress may have an influence on the mother-child attachment relationship.

When analysed according to attachment classification, PSI scores for mothers with securely attached children were positively correlated with the aggression factor. Therefore, the more stress reported by the mother, the higher the securely attached child's score on the aggression factor of the social competence measure. As of yet, there are no research findings which demonstrate a relationship between parenting stress and the child outcome of social competence. Caution must be taken in interpreting these findings because correlations do not imply a cause and effect relationship, but simply that a relationship is present.

Limitations of the study

There were four important limitations of the present study. Small sample sizes for the insecure attachment classifications was a major problem. Secure attachment classifications generally account for 70 percent of the population. Insecure attachment classifications generally account for the remaining 30 percent. In order to obtain adequate cell sizes for the insecure classifications, an increase in sample size would allow for further comparisons to be made. This particular limitation is inherent in much of the attachment research and makes generalizations to the overall population difficult (e.g., Moran, Pederson, Pettit, & Krupka, 1990; Park & Waters, 1989).

A second limitation of this study is that no differentiation was made amongst mothers who picked up and dropped off their children at the child care centres all of the time, versus families where both the mother and the father participated in the drop offs and pick ups. Mothers were included in this sample if they participated in drop offs and pick ups of their child at the centre at least

50% of the time. It would be of interest to examine whether a difference exists in the attachment classifications depending on how the actual participation of the mother varies for drop offs and pick ups.

A third limitation of this research is that visits of mothers during the day to see their child in the on-site employer sponsored child care centres were not recorded. This was beyond the scope of this particular study. Perhaps differences exist between mothers who do visit their child during the day and mothers who do not, this in turn may influence the mother-child attachment relationship. However, there still remains the issue of the psychological awareness for both the mother and her child of their close physical proximity to one another.

A fourth limitation of this study is that the present findings are only applicable to mothers and not to fathers. It was decided to examine only the mother-child attachment relationship for the purpose of this investigation. Fathers were not included in the study, however, the majority of fathers dropped their child off or picked their child up from the child care centre occasionally. It would be of interest to examine whether attachment differences exist among children where both parents are equally involved in their child's care arrangements as opposed to one parent taking full responsibility for handling these arrangements. However, it is often practicality that dictates which parent is more involved in the child care arrangements, responsibility usually lies with the parent whose work is closest, or whose schedule is most flexible.

A fifth limitation is that there was no control over the amount of hours or length of time the children attended child care. Perhaps the fact that the avoidantly attached children spent 40 hours per week in child care influenced the mother-child attachment relationship in a detrimental manner. Time and

length of child care experience may play an important role in the quality of the mother-child attachment relationship.

Suggestions for future research

The present study was limited to investigating the effect of type of care on the mother-child attachment relationship. However, fathers are playing an increasing role in child care. Therefore, a suggestion for future research would be to investigate the role of father-child attachment relationships in families using different types of child care arrangements. Attachment literature has neglected the role of the father when investigating parent-child attachment relationships. Main and Weston (1981) studied the associations between attachment to both mother and father in infancy and empathy during toddlerhood toward an adult in distress. The researchers found that quality of attachment to the father predicted empathy and furthermore, toddlers who were securely attached to both parents were by far the most empathic. This work provides evidence for the predictive validity of quality of attachment in infancy to both parental caregivers. Another study by Jarvis and Creasey (1991) examined the relationship between parenting stress and attachment for 32 families. Their results showed that parenting stress was associated with insecure attachment for both mothers and fathers. Increased research focusing on the role of the father in the attachment literature is one area that is timely and necessary.

Attachment relationships begin within the family. However, in present day society, the permanent actual presence of the caregiver is becoming increasingly rare. Parents often fulfil other responsibilities than primarily bringing up children. In most families help is provided by a partner, relatives, neighbors, or professional caregivers. Researchers have begun to consider broadening the scope of attachment theory by emphasizing the importance of a

social network approach to the study of attachment. Variables such as spousal support, social networks, and career and child care satisfaction are now being examined in relation to attachment.

One such study to incorporate these variables was the research of Simons, Lorenz, Wu, and Conger (1993) which investigated the impact of social networks and marital support on parenting behavior and stress. Measures of economic pressure, social network support, spousal support, parent depression, and supportive parenting were administered. It was found that spousal support and economic pressure had a direct effect on the quality of parenting. Therefore, a second suggestion for future research would be to investigate social network variables as they relate to the family system.

Children in the on-site employer sponsored child care arrangement were rated higher by their teachers on the compliance factor (White) of the social competence measure than children who attended non-profit community child care. It would be of interest to explore this finding in further depth, in order to determine exactly which characteristics of the on-site employer sponsored child care influenced compliance. Perhaps parent-teacher communication is more frequent in on-site child care arrangements or the child's knowledge of the mother's physical proximity accounts for greater compliance in the classroom. This would be an interesting area to examine in further detail.

Implications for education

Although the avoidantly attached children did not represent a very large sample size, there were some trends that have important implications for parents and educators of children among this classification. Children in this group spent significantly more hours per week in their child care arrangement than any other group of children. Upon analysis of the qualitative data of the departure and arrival routines, the last children to be picked up from the centres

were consistently the avoidantly attached children. These children spent on average three hours more per week in child care. This may not seem like a significant amount of time, however, in each case, the child was the last one to be picked up from the centre and these three hours at the end of each day could be termed very meaningful. Educators are well aware of the children who consistently spend more than 10 hours a day in their care. It may be worthwhile studying the ramifications or the psychological impact of consistently being the last child to be picked up from child care. These children were also rated significantly lower by their teachers on the emotional-well being factor of the social competence measure.

Conclusion

The present study did not provide evidence for the first hypothesis that type of child care arrangement was related to the quality of the mother-child attachment relationship. Type of child care arrangement and attachment classification were found to be independent. However, support for the second hypothesis was demonstrated whereby children who were classified as ambivalently attached were more often rejected by their peers in the classroom. Evidence of a trend between maternal parenting stress and attachment was found whereby mothers of avoidantly attached children reported significantly higher levels of parenting stress than did mothers of securely attached children. A preliminary finding was that of a relationship between maternal parenting stress and children's social competence, whereby mothers who reported high levels of parenting stress had children who were rated lower on the peer factor and the emotional well-being factor of the social competence measure. This research provided a preliminary insight into the study of mother-child attachment relationships and children's social competence in two different types of child care arrangements.

REFERENCES

Abidin, R. R. (1986). Parenting stress index: Manual (2nd ed.). Charlottesville, VA: Pediatric Psychology Press.

Ainsworth, M.D.S. (1967). Infancy in Uganda: Infant care and the growth of love. Baltimore: John Hopkins University Press.

Ainsworth, M.D.S., Wittig, D. (1969). Attachment and exploratory behavior of one-year-olds in a strange situation. In B.M. Foss (Ed.), Determining of infant behavior (Vol. 4). London:Metheun.

Ainsworth, M. D. S. (1973). The development of infant-mother attachment. In B. M. Caldwell & H. N. Ricciuti (Eds.). Review of child development research, Vol. 3 (pp. 1-94). Chicago: Chicago University Press.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). Patterns of attachment: A psychological study of the strange situation. Hillsdale, NJ: Erlbaum.

Ainsworth, M.D.S. (1992). Attachment and other affectional bonds across the life cycle. In C.M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), Attachment across the life cycle. New York: Routledge.

Arnett, J. (1989). Caregivers in day care centers: Does training matter? Journal of Applied Developmental Psychology, 10, 541-552.

Axel, H. (1985). Corporations and families: Changing practices and perspectives. New York: The Conference Board.

Barglow, P., Vaughn, B. E., & Molitor, N. (1987). Effects of maternal absence due to employment on the quality of infant-mother attachment in a low-risk sample. Child Development, 58, 945-954.

Belsky, J. (1988). The "effects" of day care reconsidered. Early Childhood Research Quarterly, 3, 235-272.

Belsky, J., & Rovine, M.J. (1988). Nonmaternal care in the first year of life and the security of infant-parent attachment. Child Development, 59, 157-167.

Belsy, J. & Isabella, R. (1988). Maternal, infant, social, and social-contextual determinants of attachment. In J. Belsky & T. Nezworski (Eds.), Clinical implications of attachment. Hillsdale, NJ: Erlbaum.

Belsky, J., & Nezworski, T. (Eds.). (1988). Clinical implications of attachment. Hillsdale, NJ: Erlbaum.

Belsky, J. (1981). Early human experience: A family perspective. Developmental Psychology, 17, 3-23.

Belsky, J., & Steinberg, L. D. (1978). The effects of day care: A critical review. Child Development, 49, 929-949.

Blehar, M.C. (1974). Anxious attachment and defensive reactions associated with day-care. Child Development, 45, 683-692.

Block, J.H. (1983). Differential premises arising from differential socialization of the sexes: Some conjectures. Child Development, 54, 1335-1354.

Bolger, N., DeLongis, A., Kessler, R., & Schilling, E. (1989). Effects of daily stress on negative mood. Journal of Personality and Social Psychology, 57, 808-818.

Bowlby, J. (1951). Maternal care and mental health. World Health Organization Monograph (Serial No. 2).

Bowlby, J. (1969). Attachment and Loss: Volume I. Attachment. Harmondsworth: Penguin.

Bowlby, J. (1973). Attachment and loss: Volume II. separation, anxiety and anger. London: The Hogarth Press.

Bowlby, J. (1980a). Attachment and loss: Volume 3: Loss, sadness and depression. New York: Basic Books.

Bowlby, J. (1988). A secure base: Parent-child attachment and healthy human development. New York: Basic Books.

Bretherton, I. (1985). Attachment theory: Retrospect and prospect. In I.Bretherton and E. Waters (Eds.), Monographs of the society for research in child development, 50 (Serial No. 209), 3-35.

Bretherton, I., & Waters, E. (Eds.) (1985). Growing points of attachment theory and research. Monographs of the society for research in child development, 50 (Serial No. 209).

Bromwich, R. (1981). Working with parents and infants: An interactional approach. Baltimore, MD: University Park Press.

Bronfenbrenner, U. (1979). The ecology of human development. Cambridge, MA: Harvard University Press.

Brookhart, J., & Hock, E. (1976). The effects of experimental context and experiential background on infant's behavior toward their mother and a stranger. Child Development, 47, 333-340.

Burud, S. L., Aschbacher, P. R., & McCroskey, J. (1984). Employer-supported child care: Investing in human resources. Boston: Auburn House.

Caldwell, B., & Bradley, R. (1984). Home observation for the measurement of the environment. Little Rock: University of Arkansas, Center for Child Development and Education.

Chase-Lansdale, P. L., & Owen, M. T. (1987). Maternal employment in a family context: Effects on infant-mother and infant-father attachments. Child Development, 58, 1505-1512.

Clarke-Stewart, K. A. (1988). "The 'effects' of infant day care reconsidered" reconsidered: Risks for parents, children, and researchers. Early Childhood Research Quarterly, 3, 293-318.

Clarke-Stewart, K. A. (1989). Infant day care: Maligned or malignant? American Psychologist, 266-273.

Cohn, D.A. (1990). Child-mother attachment of six-year-olds and social competence at school. Child Development, 61, 152-162.

Crokenberg, S. B. (1980). Infant irritability, mother responsiveness, and social support influences on the security of infant-mother attachment. Child Development, 52, 857-865.

Doyle, A. (1975). Infant development in day care. Developmental Psychology, 4, 655-656.

Dunn, L.M. (1981). Peabody Picture Vocabulary Test Revised. Minneapolis: American Guidance Services.

Easterbrooks, M. A., & Goldberg, W. A. (1985). Effects of early maternal employment on toddlers, mothers, and fathers. Developmental Psychology, 21 (5), 774-783.

Etaugh, C. (1980). Effects of nonmaternal care on children: Research evidence and popular views. American Psychologist, 35, 309-319.

Field, T., Masi, W., Goldstein, S., Perry, S., & Parl, S. (1988). Infant day care facilitates preschool social behavior. Early Childhood Research Quarterly, 3, 341-359.

Field, T., Gerwitz, J.L., Cohen, D., Garcia, R., Greenberg, R., & Collins, K. (1984). Leave-takings and reunions of infants, toddlers, preschoolers and their parents. Child Development, 55, 628-635.

George, C., Kaplan, N., & Main, M. (1985). The Berkeley adult attachment interview. Unpublished protocol, Department of Psychology, University of California, Berkeley.

Goosens, F.A. (1987). Maternal employment and day care: Effects on attachment. In L.W.C. Tavecchio and M.H. Van Ijzendoorn (Eds.), Attachment in social networks. Amsterdam: North-Holland.

Greenberg, M.T., Ciccetti, D., & Cummings, E.M. (1990). Attachment in the preschool years: Theory, research and intervention. Chicago: The University of Chicago Press.

Harms, T., & Clifford, R. M. (1980). The early childhood environment rating scale. New York: Teacher's College Press.

Hetherington, E. M., & Parke, R. (1986). Child psychology: A contemporary viewpoint (3rd ed.). McGraw-Hill, Inc.

Hyde, J.S. (1984). How large are gender differences in aggression? A developmental meta-analysis. Developmental Psychology, 20, 722-736.

Hollingshead, A. B. (1975). The four factor index of social position. (Manuscript available from the Department of Sociology, Yale University, New Haven, CT 06520).

Howes, C., Hamilton, C.E., & Matheson, C.C. (1994). Children's relationships with peers: Differential associations with aspects of the teacher-child relationship. Child Development, 65, 253-263.

Howes, C., & Hamilton, C. E. (1992). Children's relationships with caregivers: Mothers and child care teachers. Child Development, 63, 859-866.

Howes, C., Rodning, C., Galluzzo, D. C., & Myers, L. (1988). Attachment and child care: Relationships with mother and caregiver. Early Childhood Research Quarterly, 3, 403-416.

Howes, C. (1987). Social competency with peers: Contributions from child care. Early Childhood Research Quarterly, 2, 155-167.

Howes, C. (1980). Peer play as an index of complexity of peer interaction. Developmental Psychology, 16, 371-372.

Jacobs, E. (1989).The Demographics Questionnaire, Concordia University, Montreal, Canada.

Jacobson, J. L., & Wille, D. E. (1986).The influence of attachment pattern on developmental changes in peer interaction from the toddler to the preschool period. Child Development, 57, 338-347.

Jarvis, P.A., & Creasey, G.L. (1991). Parental stress, coping, and attachment in families with an 18-month-old infant. Infant Behavior and Development, 14, 383-395.

Kaplan, N. & Main, M. (1986). Assessments of attachment organization through children's family drawings. Unpublished manuscript, University of California, Berkeley.

Kavesh, L. (1993, March). Antecedents of peer competence in childhood: Attachment and maternal child-rearing attitudes. Paper presented at the Society for Research in Child Development, New Orleans, La.

LaFrenière, P. J. (1983). From attachment to peer relations: an analysis of individual differences in preschool peer competence. Paper presented at the biennial meeting of the Society for Research in Child Development, Detroit, MI.

LaFrenière, P. J., & Sroufe, L. A. (1985). Profiles of peer competence in the preschool: Interrelations between measures, influence of social ecology, and relation to attachment theory. Developmental Psychology, 21 (1), 56-69.

Lamb, M., & Nash, A. (1989). Infant-mother attachment, sociability, and peer competence. In T.J. Berndt and G.W. Ladd (Eds.), Peer relationships in child development. New York: Wiley.

Lamb, M., & Bornstein, M. (1987). Development in infancy: An introduction. New York: Random House.

Lamb, M., Hwang, C. P., Broberg, A., & Bookstein, F. L. (1988). The effects of out-of-home care on the development of social competence in Sweden: A longitudinal study. Early Childhood Research Quarterly, 3, 379-401.

Lazarus, R., & Folkman, S. (1984). Coping and adaptation. In W.D. Gentry (Ed.), The Handbook of Behavioral Medecine. New York: Guilford.

Lieberman, A. F. (1977). Preschoolers' competence with a peer: Relations with attachment and peer experience. Child Development, 48, 1277-1287.

Maccoby, E.E. & Jacklin, C.N. (1980). Sex differences in aggression: A rejoinder and reprise. Child Development, 51, 964-980.

Main, M., & Cassidy, J. (1988). Categories of response to reunion behavior in preschool children with parent at age six: Predictable from infant attachment classifications and stable over a one-month period. Developmental Psychology, 24, 415-426.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. In I. Bretherton and E. Waters (Eds.), Monographs of the society for research in child development, 50 (1-2, Serial No. 209), 66-103.

Matas, L., Arend, R., & Sroufe, L. A. (1978). Continuity and adaptation in the second year: The relationship between quality of attachment and later competence. Child Development, 49, 547-556.

Mayfield, M. (1985a). Handbook on employer-supported child care for hospitals. Edmonton: Interunion/Alberta Hospital Association Child Care Steering Committee.

Mayfield, M. (1985). Employer supported child care in Canada: A descriptive analysis. The Canadian Journal of Research in Early Childhood Education, 1 (1), 3-17.

Mayfield, M. (1990). Work-related child care in Canada. Published by authority of the Minister of Labour, Government of Canada, for the Women's Bureau, Labour Canada.

Mash, E.J., Johnston, C. (1983). Sibling interactions of hyperactive and normal children and their relationship to reports of maternal stress and self-esteem. Journal of Clinical Child Psychology, 12 (1), 86-99.

Mash, E.J., Johnston, C., Kovitz, K. A comparison of the mother-child interactions of physically abused and non-abused children during play and task situations. Journal of Clinical Child Psychology.

McCartney, K., & Rosenthal, S. (1991). Maternal employment should be studied within social ecologies. Journal of Marriage and the Family, 52, 1103-1110.

McCartney, K. (Ed.). (1990). Child care and maternal employment: A social ecology approach. San Francisco: Jossy-Bass.

Moran, G., Pederson, D.R., Pettit, P., & Krupka, A. (1992). Maternal sensitivity and infant-mother attachment in a developmentally delayed sample. Infant Behavior and Development, 15, 427-442.

Moskowitz, D.S., Schwarz, J.C., & Corsini, D.A. (1977). Initiating day care at three years of age: Effects on attachment. Child Development, 48, 1271-1276.

Nakagawa, M., Teti, D.M., & Lamb, M.E. (1992). An ecological study of child-mother attachments among Japanese sojourners in the United States. Developmental Psychology, 28 (4), 584-592.

Owen, M., Easterbrooks, M. A., Chase-Lansdale, L., & Goldberg, W. A. (1984). The relation between maternal employment status and the stability of attachments to mother and to father. Child Development, 55, 1894-1901.

Park, K. A., & Waters, E. (1989). Security of attachment and preschool friendships. Child Development, 60, 1076-1081.

Parkes, C.M., Stevenson-Hinde, J., & Marris, P. (eds.). (1991). Attachment across the life cycle. New York: Routledge.

Parkes, C.M., & Stevenson-Hinde, J. (Eds.). (1982). The place of attachment in human behavior. New York: Basic Books.

Parten, M. B. (1932). Social participation among preschool children. Journal of Abnormal Psychology, 27, 243-269.

Pastor, D. L. (1981). The quality of mother-infant attachment and its relationship to toddler's initial sociability with peers. Developmental Psychology, 17, 323-335.

Pederson, D.R., Moran, G., Sitko, C., Campbell, K., Ghesquire, K., & Acton, H. (1990). Maternal sensitivity and the security of infant-mother attachment: A Q-sort study. Child Development, 61, 1974-1983.

Perry, L. D., & Isabella, G. M. (1993, March). The interactive effects of non-maternal care, attachment and temperament on social development. Paper presented at the Society for Research in Child Development, New Orleans, La.

Pruchno, R., & Resch, N. (1989). Mental health of caregiving spouses: Coping as a mediator, moderator, or main effect? Psychology and Aging, 4, 454-463.

Pullan-Watkins, K. (1987). Parent-child attachment: A guide to research. New York: Garland.

Ragozin, A.S. (1980). Attachment behavior of day care children: Naturalistic and laboratory observations. Child Development, 51, 409-415.

Sagi, A. & Lewkowicz, K.S. (1987). A cross-cultural evaluation of attachment research. In L.W.C. Tavecchio & M.H. van IJzendoorn (Eds.), Attachment in social networks. Amsterdam: Elsevier.

Sarason, I. G., & Pierce, G. R. (Eds.). (1990). Social support: An interactional view. New York: John Wiley & Sons.

Saviano, M.A. (1981). Maternal involvement in the implementation of occupational therapy with severely handicapped children and deficits in feeding. Unpublished masters thesis, Washington University, St. Louis, Missouri.

Scarr, S., Phillips, D., & McCartney, K. (1989). Dilemmas of child care in the United States: Employed mothers and children at risk. Canadian Psychology, 30 (2), 126-139.

Schneider-Rosen, K., & Rothbaum, F. (1993). Quality of parental caregiving and security of attachment. Developmental Psychology, 29 (2), 358-367.

Schwartz, P. (1983). Length of day care attendance and attachment behavior in eighteen-month-old infants. Child Development, 54, 1073-1078.

Shaw, D.S., Vondra, J.I. (1993). Chronic family adversity and infant attachment security. Journal of Child Psychology and Psychiatry and Allied Disciplines, 34 (7), 1205-1215.

Simons, R. L., Lorenz, F. O., Wu, C., & Conger, R. D. (1993). Social network and marital support as mediators and moderators of the impact of stress and depression on parental behavior. Developmental Psychology, 29 (2), 368-381.

Sroufe, L. A., & Waters, E. (1977). Attachment as an organizational construct. Child Development, 48, 1184-1199.

Sroufe, L.A. (1983). Individual patterns of adaptation from infancy to preschool. In M. Perlmutter (Ed.), The Minnesota symposium on child psychology, 16, 41-81. Hillsdale, NJ: Erlbaum.

Statistics Canada. (1993). Canadian National Child Care Study: Where are the children? An overview of child care arrangements in Canada. Published under the authority of Health and Welfare Canada.

Statistics Canada. (1992). Canadian National Child Care Study: Parental work patterns and child care needs. Published under the authority of Health and Welfare Canada.

Statistics Canada. (1990). Women in Canada: A statistical report, 2nd Edition. Published under the authority of the Minister of Regional Industrial Expansion and the Minister of State for Science and Technology. Ottawa: Statistics Canada.

Statistics Canada. (1987). Women in the workplace: Selected data. Published under the authority of the Minister of Supply and Services Canada. Ottawa: Statistics Canada.

Teti, D. M., Nakagawa, M., Das, R., & Wirth, O. (1991). Security of attachment between preschoolers and their mothers: relations among social interaction, parenting stress, and mothers' sorts of the attachment Q-Set. Developmental Psychology, 27 (3), 440-447.

Thompson, R.A. (1988). The effects of infant day care through the prism of attachment theory: A critical appraisal. Early Childhood Research Quarterly, 3, 273-282.

Turner, P. J. (1991). Relations between attachment, gender, and behavior with peers in preschool. Child Development, 62, 1475-1488.

Vandell, D. L., & Corasaniti, M. A. (1988). Variations in early child care: Do they predict subsequent social, emotional, and cognitive differences? Early Childhood Research Quarterly, 5, 555-572.

Vaughn, B.E., Gove, F.L., & Egeland, B. (1980). The relationship between out-of-home care and the quality of the infant-mother attachment in an economically disadvantaged population. Child Development, 51, 1203-1214.

Vaughn, B. E., & Waters, E. (1990). Attachment behavior at home and in the laboratory: Q-Sort observations and strange situation classifications of one-year-olds. Child Development, 61, 1965-1973.

Waters, E., Wippman, J., & Sroufe, L. A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. Child Development, 50, 821-829.

Waters, E., & Deane, K. E. (1985). Defining and assessing individual differences in attachment relationships: Q-methodology and the organization of behavior in infancy and early childhood. In I. Bretherton & E. Waters (Eds.), Monographs of the society for research in child development, 50 (1-2, Serial No.209), 41-65.

Waters, E., Kondo-Ikemura, K., Posada, G., & Richters, J. (1990). Learning to love: Mechanisms and milestones. In M.R. Gunner & L. A. Sroufe (Eds.), Minnesota Symposia on Child Psychology, 23, 217-255. Hillsdale, NJ: Erlbaum.

Waxman, P. (1991). Children in the world of adults: on-site child care. Young Children, 16-21.

Weinraub, M., & Wolf, B. M. (1983). Effects of stress and social support on mother-child interactions in single and two-parent families. Child Development, 54, 1297-1311.

APPENDIX A

Letters of Consent

July 6, 1993

Dear Director,

As discussed in our telephone conversation of , this letter will provide you with details of the Concordia University study proposed by members of the university's Education Department. The purpose of this study is to examine day care attendance of workplace and community-based child care centres. We wish to gain some knowledge about the different issues involved in the daily routines of parents and children who use these types of child care arrangements. We anticipate beginning the research in September, 1993.

For this study we will need to observe 3 year old children and their parents at the child care centre, at departure and pick-up times. The daily routines of the children would not be disturbed in any way, and the two observers would be in the day care for approximately one week during morning arrival and afternoon pick up times. The teacher in the participating classes will be asked to complete one questionnaire for each participating child, and in doing so will receive a renumeration of $5.00 per questionnaire returned. Mothers will also be contacted by telephone to obtain demographic information and an appointment will be made for the mothers to complete a few short questionnaires related to this study.

All of the information obtained from this research project will remain confidential and all participants will be free to withdraw from the study at any time. We are interested in overall findings and not individual differences. A final report will be sent to the centre director in June, 1994. Your centre's involvement in this research will help contribute to the increasing knowledge regarding early childhood development and child care attendance. In appreciation of your participation we will donate a developmentally appropriate toy to your centre. Should you have any questions do not hesitate to contact Laurie Hellstrom or Linda LeMesurier at 848-2045 or Professor Ellen Jacobs at 848-2016.

We will contact you by telephone during the week of , to confirm your participation in this study. Thank you for your time and consideration of this research project.

Sincerely,

Laurie Hellstrom
Research Coordinator

Linda LeMesurier
Research Coordinator

Ellen Jacobs
Professor,
Concordia
University

Dear Parent,

Members of the Education Department of Concordia University are conducting a research project on day care attendance at workplace and community-based child care centres. We wish to gain some knowledge about the different issues involved in the daily routines of parents and children who use these two types of child care arrangements.

For this study we require mothers to respond to a brief telephone and home interview (or at the day care, if preferred) and some questionnaires related to various issues involved in child care. Examples of the types of questions that will be asked are: "Generally, how concerned are you about leaving your child at the day care centre each morning?"; "How much time do you spend travelling to and from the day care centre?"; " Would you say that having children is much more expensive than you expected?".

We are studying arrival and departure routines in on-site and community-based child care settings. Therefore, we wish to observe the children in their day care environment at the beginning and end of their day. The daily routine of the children will not be interrupted. The observers will be in your child's classroom for approximately one week. All the information obtained from this research project will remain confidential. We are interested in overall findings and not individual differences.

Your involvement in this research would be greatly appreciated as it will contribute to the increasing knowledge regarding early childhood development and day care attendance. In appreciation of your participation we will donate a developmentally appropriate toy for your child's classroom. If at any time you and/or your child wish to withdraw from the study you are free to do so. Should you have any questions do not hesitate to contact Laurie or Linda at 848-2045 or Professor Ellen Jacobs at 848-2016. Thank you very much for your cooperation.

Sincerely,

Laurie Hellstrom
Research Coordinator

Linda LeMesurier
Research Coordinator

Ellen Jacobs
Professor
Department of Education

Permission Form

I hereby give permission for my son/daughter to participate in the research project conducted by the Education Department at Concordia University. I understand that the study involves observations of the children in their day care environment and a home interview (or at the day care, if preferred) with the mother (15 minutes in duration), including the completion of a few short questionnaires (45 minutes in duration).

Child's Name: _____

Mother's Name: _____

Child's Date of Birth: _____

Address: _____

_____

Postal Code: _____

Telephone Number of Parent:

Home: _____

Work: _____

_____ I **DO** give permission for my child to be included in the study.

_____ I **DO NOT** give per mission for my child to be included in the study.

_____ _____

Signature of Mother Date

APPENDIX B

Background Information Questionnaire

Background Information Questionnaire

Child's Name: _____

Mother's Name: _____

Child Care Centre: _____

Interviewer: _____

Length of Interview: _____

Date of Interview: _____

Present child care arrangements (narrative account):

Does the child in question seem to like (name of day care)...
Can you describe previous child care arrangements... Would you like to start at the beginning or...

Child care arrangement for age _____

Child care arrangement for age _____

Child care arrangement for age _____

First Group Experience:

Age of child upon entering his/her first group _____

Birth Date of Child: _____

Family

Now I would like to ask you a few questions concerning the rest of the family.

(a) Who else besides you and (name of child) lives with you?

Your husband/companion? _____

Do you have other children? _____

(b) If yes, what are their names and ages?

1. _____
2. _____
3. _____
4. _____

(c) Do other of these children attend the same day care or one similar to the one that (child's name) attends?

SES Information

I don't want to take up too much more of your time, I have just a few more questions to ask you:

a. What is your employment? _____

b. What are your duties? _____

c. What type of employment does your husband/companion have?

_____

d. What are his/her primary duties? _____

e. What level of education have you reached? (What is the highest grade you have completed at school?)

Primary? (specify) _____
High School? (specify) _____
CEGEP/Technical school? (specify) _____
University? (specify) _____

f. What level of education has your husband reached?

Primary? (specify) _____
High School? (specify) _____
CEGEP/Technical school? (specify) _____
University? (specify) _____

g. Is English the language most often spoken at home? _____
if not, which language is? _____

h. What is your mother tongue? _____

i. What is your husband's mother tongue? _____

Thank you again for your time. We appreciate your help.

Checklist

___ Present day care situation (type, length etc.)

___ Past day care experience

___ D.O.B./ Group experience

___ 1or 2 parent family

___ Occupation/Education mother

___ Occupation/Education father

___ Language spoken at home

APPENDIX C

Hollingshead Four Factor Index of Social Status (1975)

Hollingshead Four Factor Index of Social Status (1975)

SES Computation

EDUC (Education, years completed)

1 = less than 7th grade
2 = junior high (grade 7, 8/ Secondary 1, 2)
3 = partial high school (grade 9, 10/ Secondary 3, 4)
4 = high school graduate (grade 11, 12/ Secondary 5)
5 = partial college (minimal 1 year/ college finished/ specialized training)
6 = standard University graduation (B.A.)
7 = graduate professional training (graduate degree)

FOCCUP: Father's occupation
MOCCUP: Mother's occupation

FEDUC: Father's education
MEDUC: Mother's education

If single income family:

SES = (OCCUP x 5) + (EDUC x 3)

If double income family:

SES = [(FOCCUP x 5) + (FEDUC x 3) + (MOCCUP x 5) + (MEDUC x 3)] / 2

APPENDIX D

Peabody Picture Vocabulary Test-Revised (1981)
L'Echelle de Vocabulaire en Images Peabody (1993)

FORM L — TEST ITEMS AND ABBREVIATED INSTRUCTIONS

Administering the TRAINING ITEMS

For most subjects under age 8: Use Plates A, B, and C. Administer as many training item series as necessary to secure three consecutive correct responses.
For most subjects age 8 and over: Use Plates D and E. Administer as many training item series as necessary to secure two consecutive correct responses.

Training Plate	INITIAL PRACTICE SERIES WORDS & KEYS	ADDITIONAL PRACTICE WORDS & KEYS Alternate Series X	Alternate Series Y	Alternate Series Z
A	doll (4)	fork (1)	table (2)	car (3)
B	*man* (2)	*comb* (3)	sock (4)	*mouth* (1)
C	swinging (3)	drinking (4)	walking (1)	climbing (2)
D	wheel (4)	zipper (2)	rope (1)	rake (3)
E	giant (1)	bride (3)	witch (4)	royal (2)

(Complete directions are given in Part I of the Manual.)

Administering the TEST ITEMS

Basal: Highest 8 consecutive correct responses
Ceiling: Lowest 8 consecutive responses containing 6 errors
Starting Point: For a subject assumed to be of average ability, find the person's age circled in the margin, and begin the test with that item. Otherwise consult Part I of the Manual for further instructions.
Recording Responses and Errors: Record the subject's response (1, 2, 3, or 4) for each item administered. For each error, draw an oblique line either through the plate number of the item missed, or through the geometric figure, as illustrated below:

32 envelope .... (2) 4 Ω or 32 envelope .... (2) 4 Ω

Every eighth figure is identical to help determine the basal and ceiling.

NOTE: Ages in circles refer to the lowest age in a 6- or 12-month interval. For example, item 1 is the starting item for ages 2-6 through 3-5, and item 30 for ages 5-0 through 5-5. Use item 110 for ages 16-0 and over.

	Plate Number	Word	Key	Response	Error
3½	1	bus	(4)		○
	2	hand	(1)		□
	3	bed	(3)		△
	4	tractor	(2)		Ω
	5	closet	(1)		♡
	6	snake	(4)		☆
	7	boat	(2)		◇
	8	tire	(3)		○
	9	cow	(1)		□
3½	10	lamp	(4)		△
	11	drum	(3)		Ω
	12	knee	(4)		♡
	13	helicopter	(2)		☆
	14	elbow	(4)		◇
4½	15	bandage	(4)		○
	16	feather	(1)		□
	17	empty	(3)		△
	18	fence	(4)		Ω
	19	accident	(2)		♡
4½	20	net	(2)		☆
	21	tearing	(4)		◇
	22	sail	(1)		○
	23	measuring	(2)		□
	24	peeling	(3)		△
	25	cage	(1)		Ω
	26	tool	(4)		♡
	27	square	(4)		☆
	28	stretching	(1)		◇
	29	arrow	(2)		○
5½	30	tying	(2)		□
	31	nest	(1)		△
	32	*envelope*	(2)		Ω
	33	hook	(3)		♡
	34	pasting	(4)		☆
5½	35	patting	(1)		◇
	36	penguin	(1)		○
	37	sewing	(2)		□
	38	delivering	(1)		△
	39	diving	(2)		Ω
6	40	parachute	(3)		♡
	41	furry	(4)		☆
	42	vegetable	(4)		◇
	43	shoulder	(3)		○
	44	dripping	(2)		□
	45	claw	(4)		△
	46	decorated	(3)		Ω
	47	frame	(1)		♡
	48	forest	(3)		☆
	49	faucet	(2)		◇
6½	50	*group*	(3)		○
	51	stem	(3)		□
	52	vase	(3)		△
	53	pedal	(1)		Ω
	54	capsule	(2)		♡
7	55	surprised	(4)		☆
	56	bark	(2)		◇
	57	mechanic	(2)		○
	58	tambourine	(1)		□
	59	disappointment .	(4)		△
	60	awarding	(3)		Ω
	61	pitcher	(3)		♡
	62	reel	(1)		☆
	63	signal	(1)		◇
	64	trunk	(2)		○
8	65	human	(2)		□
	66	*nostril*	(1)		△
	67	disagreement ..	(1)		Ω
	68	exhausted	(2)		♡
	69	vine	(4)		☆
9	70	ceremony	(4)		◇
	71	casserole	(2)		○
	72	vehicle	(4)		□
	73	globe	(3)		△
	74	filing	(3)		Ω
	75	clamp	(2)		♡
	76	reptile	(2)		☆
	77	island	(1)		◇
	78	spatula	(3)		
	79	cooperation	(4)		
10	80	scalp	(4)		
	81	twig	(2)		
	82	weasel	(2)		
	83	demolishing ...	(4)		
	84	balcony	(1)		
11	85	locket	(1)		
	86	amazed	(3)		
	87	tubular	(1)		
	88	tusk	(1)		
	89	bolt	(3)		
12	90	communication .	(4)		
	91	carpenter	(2)		
	92	isolation	(1)		
	93	inflated	(3)		
	94	coast	(3)		
13	95	adjustable	(2)		
	96	fragile	(3)		
	97	assaulting	(1)		
	98	appliance	(1)		
	99	pyramid	(4)		
14	100	blazing	(1)		
	101	hoisting	(1)		
	102	arch	(4)		
	103	lecturing	(4)		
	104	dilapidated	(4)		
15	105	contemplating ..	(2)		
	106	canister	(1)		
	107	dissecting	(3)		
	108	link	(4)		
	109	solemn	(3)		
16	110	archery	(2)		
	111	transparent	(3)		

ITEMS DE L'ECHELLE, RÉPONSES, CODE DE NOTATION ET ÉCHECS

Âge	Planche	Mot	Code	Réponse	Échec
2½	1	bateau	(2)		○
3	2	autobus	(4)		□
	3	main	(1)		△
	4	tracteur	(2)		∩
	5	lit	(3)		♡
	6	accident	(2)		☆
	7	tambour	(3)		◇
	8	vache	(1)		○
	9	serpent	(4)		□
	10	lampe	(4)		△
	11	genou	(2)		∩
	12	plume	(1)		♡
	13	pingouin	(1)		☆
	14	clôture	(4)		◇
3½	15	parachute	(3)		○
	16	flèche	(2)		□
	17	carré	(4)		△
	18	filet	(2)		∩
	19	outil	(4)		♡
4	20	légume	(4)		☆
	21	coude	(3)		◇
	22	bandage	(4)		○
	23	déchirer	(4)		□
	24	fôret	(3)		△
4½	25	mesurer	(2)		∩
	26	enveloppe	(2)		♡
	27	hélicoptère	(1)		☆
	28	pneu	(3)		◇
	29	vide	(3)		○
5	30	nid	(1)		□
	31	cage	(1)		△
	32	griffe	(4)		∩
	33	s'étirer	(1)		♡
	34	attacher	(2)		☆
5½	35	flatter	(1)		◇
	36	coller	(4)		○
	37	coudre	(2)		□
	38	gonflé	(3)		△
	39	épaule	(3)		∩
	40	cadre	(1)		♡
	41	décoré	(3)		☆
	42	tige	(3)		◇
	43	tambourin	(1)		○
	44	repasseuse	(1)		□
6	45	robinet	(2)		△
	46	voile	(1)		∩
	47	narine	(1)		♡
	48	signal	(3)		☆
	49	surpris	(4)		◇
	50	groupe	(3)		○
	51	remplir	(1)		□
	52	peler	(3)		△
	53	dispute	(1)		∩
	54	plonger	(2)		♡
7	55	livrer	(1)		☆
	56	démolir	(4)		◇
	57	pot	(3)		○
	58	écorce	(2)		□
	59	dégoutter	(2)		△
	60	balcon	(1)		∩
	61	hameçon	(3)		♡
	62	récompenser	(3)		☆
	63	fatigué	(1)		◇
	64	cérémonie	(4)		○
8	65	mécanicien	(2)		□
	66	fragile	(3)		△
	67	tronc	(2)		∩
	68	anneau	(4)		♡
	69	vase	(3)		☆
	70	tir à l'arc	(2)		◇
	71	ustensile	(2)		○
	72	casserole	(3)		□
	73	pédale	(1)		△
	74	colère	(3)		∩
9	75	tranquillité	(3)		♡
	76	cylindrique	(1)		☆
	77	infirme	(1)		◇
	78	globe	(3)		○
	79	expliquer	(4)		□
	80	disséquer	(3)		△
	81	humain	(2)		∩
	82	île	(1)		♡
	83	moulinet	(1)		☆
	84	transparent	(3)		◇
10	85	communication	(4)		○
	86	piéton	(2)		□
	87	enflammé	(1)		△
	88	crampon	(2)		∩
	89	classer	(3)		♡
	90	véhicule	(4)		☆
	91	pyramide	(4)		◇
	92	isolement	(1)		○
	93	délabré	(4)		□
	94	médaillon	(1)		△
11	95	sommeiller	(3)		∩
	96	ajustable	(2)		♡
	97	dromadaire	(2)		☆
	98	extérieur	(1)		◇
	99	reptile	(2)		○
12	100	trajectoire	(1)		□
	101	crâne	(4)		△
	102	vigne	(4)		∩
	103	coopération	(3)		♡
	104	penderie	(1)		☆
13	105	charpentier	(2)		◇
	106	nautique	(3)		○
	107	déception	(4)		□
	108	cascade	(4)		△
	109	pelucheux	(1)		∩
14	110	quatuor	(4)		♡
	111	vitrifié	(1)		☆
	112	avachi	(2)		◇
	113	parallélogramme	(1)		○
	114	cachet	(2)		□
15	115	sphérique	(2)		△
	116	rembourrage	(1)		∩
	117	belette	(2)		♡
	118	incertitude	(2)		☆
	119	serres	(3)		◇
16+	120	ascension	(3)		○
	121	charogne	(1)		□
	122	boulon	(3)		△
	123	exténuée	(2)		∩
	124	félin	(2)		♡
	125	confidence	(3)		☆
	126	losange	(3)		◇
	127	arche	(4)		○
	128	constellation	(4)		□
	129	seringue	(2)		△
	130	indigent	(2)		∩
	131	perpendiculaire	(3)		♡
	132	assaillir	(1)		☆
	133	arrogant	(2)		◇
	134	péninsule	(4)		○
	135	spatule	(3)		□
	136	filtration	(1)		△
	137	consommer	(4)		∩
	138	aride	(4)		♡
	139	défense	(1)		☆
	140	côte	(3)		◇
	141	abrasif	(1)		○
	142	urne	(3)		□
	143	solennel	(3)		△
	144	contempler	(2)		∩
	145	brindille	(2)		♡
	146	inclément	(4)		☆
	147	calice	(2)		◇
	148	émacié	(2)		○
	149	spectre	(4)		□
	150	cornée	(2)		△
	151	entravé	(1)		∩
	152	enjoliver	(2)		♡
	153	jubilante	(2)		☆
	154	mercantile	(1)		◇
	155	incandescent	(4)		○
	156	obélisque	(1)		□
	157	palan	(1)		△
	158	agrume	(3)		∩
	159	restreindre	(1)		♡
	160	divergence	(4)		☆
	161	convexe	(1)		◇
	162	déambulation	(2)		○
	163	larcin	(4)		□
	164	émission	(3)		△
	165	tangente	(1)		∩
	166	entomologiste	(3)		♡
	167	homoncule	(4)		☆
	168	dénuement	(3)		◇
	169	repoussé	(4)		○
	170	anthropoïde	(3)		□

CALCUL DU SCORE BRUT

Numéro de l'item plafond _____

Moins les échecs _____

Score brut

(On compte les échecs entre la base supérieure et le plafond inférieur.)

APPENDIX E

Parenting Stress Index (1986)

Directions:
In answering the following questions, please think about the child participating in this study.

The following questions ask you to mark an answer which best describes your feelings. While you may not find an answer which exactly states your feelings, please mark the answer which comes closest to describing how you feel. Your first reaction to each question should be your answer.

Please mark the degree to which you agree or disagree with the following statements by filling in the number which best matches how you feel.

	QUESTIONS	STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE
1	When my child wants something, my child usually keeps trying to get it.	1	2	3	4	5
2	My child is so active that it exhausts me	1	2	3	4	5
3	My child appears disorganized and is easily distracted.	1	2	3	4	5
4	Compared to most, my child has more difficulty concentrating and paying attention	1	2	3	4	5
5	My child will often stay occupied with a toy for more than 10 minutes.	1	2	3	4	5
6	My child wanders away much more than I expected.	1	2	3	4	5
7	My child is much more active than I expected.	1	2	3	4	5
8	My child squirms and kicks a great deal when being dressed or bathed.	1	2	3	4	5
9	My child can be easily distracted from wanting something.	1	2	3	4	5
10	My child rarely does something for me that makes me feel good.	1	2	3	4	5
11	Most times I feel that my child likes me and wants to be close to me.	1	2	3	4	5
12	Sometimes I feel my child doesn't like me and doesn't want to be close to me.	1	2	3	4	5
13	My child smiles at me much less than I expected.	1	2	3	4	5
14	When I do things for my child I get the feeling that my efforts are not appreciated very much.	1	2	3	4	5
15	Which statement best describes your child..? 1. almost always likes to play with me. 2. sometimes likes to play with me. 4 usually doesn't like to play with me. 5 almost never likes to play with me.					
16	My child cries and fusses. 1. much less than I expected 2 less than I expected. 3. about as much as I expected. 4 much more than I expected. 5 it seems almost constant.					
17	My child seems to cry and fuss more often than most children	1	2	3	4	5
18	When, playing my child doesn't often giggle or laugh.	1	2	3	4	5
19	My child generally wakes up in a bad mood.	1	2	3	4	5
20	I feel that my child is very moody and easily upset.	1	2	3	4	5
21	My child looks a little different than I expected and it bothers me at times.	1	2	3	4	5
22	In some areas my child seems to have forgotten past learning and has gone back to doing things characteristic of younger children	1	2	3	4	5
23	My child doesn't seem to learn as quickly as most children	1	2	3	4	5

	QUESTIONS	STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE
47	My child turned out to be more a problem than I expected.	1	2	3	4	5
48	My child seems to be much harder to care for than most.	1	2	3	4	5
49	My child is always hanging on to me.	1	2	3	4	5
50	My child makes more demands on me than most children.	1	2	3	4	5
51	I can't make decisions without help.	1	2	3	4	5
52	I have had many more problems raising children than I expected.	1	2	3	4	5
53	I enjoy being a parent.	1	2	3	4	5
54	I feel that I am successful most of the time when I try to get my child to do or not to do something.	1	2	3	4	5
55	Since I brought my last child home from the hospital, I find that I am not able to take care of this child as well as I thought I could I need help	1	2	3	4	5
56	I often have the feeling that I cannot handle things very well.	1	2	3	4	5
57	When I think about my self as a parent I believe. 1. I can handle everything that happens. 2. I can handle most things pretty well. 3. sometimes I have doubts, but find that I handle most things without any problems. 4 I have some doubts about being able to handle things. 5. I don't think I handle things very well at all.	1	2	3	4	5
58	I feel that I am : 1. very good parent. 2. a better than average parent. 3 an average parent. 4 a person who has some trouble being a parent. 5. not very good at being a parent.					
61	How easy is it for you to understand what your child wants or needs? 1. very easy. 2. easy. 3 somewhat difficult. 4. it is very hard. 5. I usually can't figure out what the problem is.					
62	It takes a long time for parents to develop close, warm feelings for their children.	1	2	3	4	5
63	I expected to have closer and warmer feelings for my child than I do and this bothers me	1	2	3	4	5
64	Sometimes my child does things that bother me just to be mean.	1	2	3	4	5
65	When I was young, I never felt comfortable holding or taking care of children.	1	2	3	4	5
66	My child knows I am his or her parent and wants me more than other people.	1	2	3	4	5
67	The number of children I have now is too many.	1	2	3	4	5
68	Most of my life is doing things for my child.	1	2	3	4	5
69	I find myself giving up more of my life to meet my children's needs than I ever expected	1.	2	3	4	5
70	I feel trapped by my responsibilities as a parent.	1	2	3	4	5
71	I often feel that my child's needs control my life	1	2	3	4	5
72	Since having this child I have been able to do new and different things.	1	2	3	4	5
73	Since having a child I feel that I am almost never able to do things that I like to do.	1	2	3	4	5
74	It is hard to find a place in our home where I can go by myself.	1	2	3	4	5

	QUESTIONS	STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE
24	My child doesn't seem to smile as much as most children.	1	2	3	4	5
25	My child does a few things which bother me a great deal.	1	2	3	4	5
26	My child is not able to do as much as I expected.	1	2	3	4	5
27	My child does not like to be cuddled or touched very much.	1	2	3	4	5
28	When my child came home from the hospital, I had doubtful feelings about my ability to handle being a parent.	1	2	3	4	5
29	Being a parent is harder than I thought it would be.	1	2	3	4	5
30	I feel capable and on top of things when I am caring for my child.	1	2	3	4	5
31	Compared to the average child, my child has a great deal of difficulty in getting used to changes in schedules or changes around the house.	1	2	3	4	5
32	My child reacts very strongly when something happens that my child doesn't like.	1	2	3	4	5
33	Leaving my child with a baby-sitter is usually a problem.	1	2	3	4	5
34	My child gets upset easily over the smallest things.	1	2	3	4	5
35	My child easily notices and overreacts to loud sounds and bright lights.	1	2	3	4	5
36	My child's sleeping or eating schedule was much harder to establish than I expected.	1	2	3	4	5
37	My child usually avoids a new toy for a while before beginning to play with it.	1	2	3	4	5
38	It takes a long time and is very hard for my child to get used to new things.	1	2	3	4	5
39	My child doesn't seem comfortable when meeting strangers.	1	2	3	4	5
40	When upset my child is: 1. easy to calm down. 2. somewhat harder to calm down than I expected. 4 very difficult to calm down. 5. nothing I do helps to calm my child.					
41	I found that getting my child to do something or stop doing something is: 1. much harder than I expected. 2. somewhat harder than I expected. 3 about as hard as I expected. 4. somewhat easier than expected. 5 much easier than expected.					
42	Think carefully and count the number of things which your child does that bothers you For example, dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc. Please fill in the number which includes the number of things you counted. 1. 1 - 3 2. 4 - 5 3. 6 - 7 4. 8 - 9 5. 10+					
43	When my child cries it usually lasts: 1. less than 2 minutes 2. 2 - 5 minutes 3 5 - 10 minutes. 4. 10 - 15 minutes 5. more than 15 minutes.					
44	There are some things my child does that really bother me a lot.	1	2	3	4	5
45	My child has had more health problems than I expected	1	2	3	4	5
46	As my child has grown and become more independent, I find myself more worried that my child will get hurt or into trouble.	1	2	3	4	5

	QUESTIONS	STRONGLY DISAGREE	DISAGREE	NOT SURE	AGREE	STRONGLY AGREE
75	When I think about the kind of parent I am, I often feel guilty or bad about myself	1	2	3	4	5
76	I am unhappy about the last purchase of clothing I made for myself.	1	2	3	4	5
77	When my child misbehaves or fusses too much I feel responsible, as if I didn't do something right.	1	2	3	4	5
78	I feel everytime my child does something wrong it is really my fault.	1	2	3	4	5
79	I often feel guilty about the way I feel towards my child.	1	2	3	4	5
80	There are quite a few things that bother me about my life.	1	2	3	4	5
81	I felt sadder and more depressed than I expected after leaving the hospital with my baby.	1	2	3	4	5
82	I wind up feeling guilty when I get angry at my child and this bothers me.	1	2	3	4	5
83	After my child had been home from the hospital for about a month, I noticed that I was feeling more sad and depressed than I expected.	1	2	3	4	5
84	Since having my child, my spouse (or male/female friend) has not given me as much help as I expected.	1	2	3	4	5
85	Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend)	1	2	3	4	5
86	Since having a child my spouse (or male/female friend) and I don't do as many things together.	1	2	3	4	5
87	Since having a child my spouse (or male/female friend) and I don't spend as much time together as a family as I expected.	1	2	3	4	5
88	Since having my last child, I have had less interest in sex.	1	2	3	4	5
89	Having a child seems to have increased the number of problems we have had with the in-laws and relatives.	1	2	3	4	5
90	Having children has been much more expensive than I expected.	1	2	3	4	5
91	I feel alone without friends.	1	2	3	4	5
92	When I go to a party I usually expect not to enjoy myself.	1	2	3	4	5
93	I am not as interested in people as I used to be.	1	2	3	4	5
94	I often have the feeling that other people my own age don't particularly like my company.	1	2	3	4	5
95	When I run into a problem taking care of my children I have a lot of people to whom I can talk to get help or advice.	1	2	3	4	5
96	Since having children I have a lot fewer chances to see my friends and to make new friends	1	2	3	4	5
97	During the past six months I have been sicker than usual or have had more aches and pains than I normally do	1	2	3	4	5
98	Physically, I feel good most of the time	1	2	3	4	5
99	Having a child has caused changes in the way I sleep.	1	2	3	4	5
100	I don't enjoy things as I used to	1	2	3	4	5
101	Since I've had my child: 1. I have been sick a great deal. 2. I haven't felt as good. 4 I haven't noticed any change in my health. 5 I have been healthier.					

APPENDIX F

Vandell Teacher Rating Scale (1988)

Vandell Teacher Rating Scale

Name of child: _____

Date: _____

Instructions

The following items deal with this child's behavior at school. Please circle the number which best represents your observations and impressions of this child during the past month.

Example

plays alone 1 2 3 4 5 plays with other children

If this child almost always plays alone, you would circle 1. If the child typically plays alone, circle 2. If his play is fairly balanced between being alone and being with others, circle 3. Circle 4 if he typically plays with others. Circle 5 if his play time is almost always spent with other children.

Please proceed by completing the following items.

1.	Teases other children	1	2	3	4	5	does not tease other children
2.	waits to be approached by other classmates.	1	2	3	4	5	initiates interactions with classmates.
3.	Is distracted from schoolwork	1	2	3	4	5	concentrates during class.
4.	is secretive about his or her activities.	1	2	3	4	5	is open and honest with others.
5.	is defiant in the classroom.	1	2	3	4	5	is cooperative and compliant in the classroom.
6.	smiles	1	2	3	4	5	frowns or grimaces
7.	does not share toys, games, or materials.	1	2	3	4	5	shares toys, games, materials.
8.	plays with other children	1	2	3	4	5	plays alone
9.	does not verbally threaten other children.	1	2	3	4	5	verbally threatens other children.
10.	is alert.	1	2	3	4	5	is "tuned out".
11.	is not helpful to other children.	1	2	3	4	5	is helpful to other children.

12.	solves conflict situations on his/her own	1	2	3	4	5	appeals to the teacher to solve conflict.
13.	does not listen to other children when they are speaking to him/her.	1	2	3	4	5	listens to other children when they are speaking to him/her.
14.	is fearful or afraid of new things.	1	2	3	4	5	is not fearful or afraid of new things.
15.	shows interest and participates.	1	2	3	4	5	is apathetic and withdrawn.
16.	does not hit, kick bite other children.	1	2	3	4	5	hits, kicks, bites other children.
17.	ignores overtures from other children.	1	2	3	4	5	accepts approaches by other children.
18.	is independent of teacher.	1	2	3	4	5	seeks to be near teacher.
19.	respects others' property	1	2	3	4	5	destroys others' property
20.	talks to other children.	1	2	3	4	5	does not talk to other children.
21.	does not keep on trying when playing in games.	1	2	3	4	5	keeps on trying when playing games.
22.	is unhappy and discontented	1	2	3	4	5	is content and happy.
23.	takes turns using materials or toys.	1	2	3	4	5	does not take turns using materials or toys.
24.	fights with other children	1	2	3	4	5	does not fight with other children.
25.	cooperates with rules.	1	2	3	4	5	does not cooperate with rules.
26.	tattles on other children	1	2	3	4	5	does not tattle on other children.
27.	is extroverted	1	2	3	4	5	is introverted.
28.	is quick at mastering new subjects.	1	2	3	4	5	is slow at mastering new subjects.
29.	continues working until a task is completed.	1	2	3	4	5	quits working on a task as soon as problems arise.
30.	is very disorganized.	1	2	3	4	5	is very organized.

31.	changes activities easily.	1	2	3	4	5	resists changing activities.
32.	is difficult to discipline.	1	2	3	4	5	is easy to discipline.
33.	is disliked by other children.	1	2	3	4	5	is not disliked by other children.
34.	is self-confident.	1	2	3	4	5	feelings are easily hurt.
35.	doesn't bother others.	1	2	3	4	5	bothers others.
36.	gets angry easily.	1	2	3	4	5	doesn't get angry easily.
37.	has many friends.	1	2	3	4	5	has few friends.
38.	is liked by others.	1	2	3	4	5	is not liked by others.
39.	is not noticed much.	1	2	3	4	5	is noticed.
40.	is avoided by others.	1	2	3	4	5	is not avoided by others.
41.	accepts teacher's suggestions.	1	2	3	4	5	rejects teacher's suggestions.
42.	is rejected by children.	1	2	3	4	5	is accepted by children.
43.	is not selected as a play partner.	1	2	3	4	5	is selected as a play partner.
44.	is invited to play.	1	2	3	4	5	is not invited to play.

APPENDIX G

Waters & Deane Attachment Q-Set (1985, revised)

Attachment Behavior Q-Set

Revision 3.0

Everett Waters

SUNY Stony Brook

1. Child readily shares with mother or lets her hold things if she asks to.

Low: Refuses.

2. When child returns to mother after playing, he is sometimes fussy for no clear reason.

Low: Child is happy or affectionate when he returns to mother between or after play times.

3. When he is upset or injured, child will accept comforting from adults other than mother.

Low: Mother is the only one he allows to comfort him.

4. Child is careful and gentle with toys and pets.

5. Child is more interested in people than in things.

Low: More interested in things than people.

6. When child is near mother and sees something he wants to play with, he fusses or tries to drag mother over to it.

Low: Goes to what he wants without fussing or dragging mother along.

7. Child laughs and smiles easily with a lot of different people.

Low: Mother can get him to smile or laugh more easily than anyone else.

8. When child cries, he cries hard.

Low: Weeps, sobs, doesn't cry hard, or hard crying never lasts very long.

9. Child is lighthearted and playful most of the time.

Low: Child tends to be serious, sad, or annoyed a good deal of the time.

10. Child often cries or resists when mother takes him to bed for naps or at night.

11. Child often hugs or cuddles against mother, without her asking or inviting him to do so.

Low: Child doesn't hug or cuddle much, unless mother hugs him first or asks him to give her a hug.

12. Child quickly gets used to people or things that initially made him shy or frightened him.

***Middle if never shy or afraid.*

13. When the child is upset by mother's leaving, he continues to cry or even gets angry after she is gone.

Low: Cry stops right after mom leaves.

***Middle if not upset by mom leaving.*

14. When child finds something new to play with, he carries it to mother or shows it to her from across the room.

Low: Plays with the new object quietly or goes where he won't be interrupted.

15. Child is willing to talk to new people, show them toys, or show them what he can do, if mother asks him to.

16. Child prefers toys that are modeled after living things (e.g. dolls, stuffed animals).

Low: Prefers balls, blocks, pots and pans, etc.

17. Child quickly loses interest in new adults if they do anything that annoys him.

18. Child follows mother's suggestions readily, even when they are clearly suggestions rather than orders.

Low: Ignores or refuses unless ordered.

19. When mother tells child to bring or give her something, he obeys.

(Do not count refusals that are playful or part of a game unless they clearly become disobedient.)

Low: Mother has to take the object or raise her voice to get it away from him.

20. Child ignores most bumps, falls, or startles

Low: Cries after minor bumps, falls, or startles.

21. Child keeps track of mother's location whe he plays around the house.

Calls to her now and then.
Notices her go from room to room.
Notices if she changes activities

Low: Doesn't keep track.

**Middle if child isn't allowed or doesn't have room to play away from mom.*

22. Child acts like an affectionate parent towar dolls, pets, or infants.

Low: Plays with them in other ways.

**Middle if child doesn't play with or have dolls, pets, or infants around.*

23. When mother sits with other family members, or is affectionate with them, chil tries to get mom's affection for himself.

Low: Lets her be affectionate with others. May join i but not in a jealous way.

24. When mother speaks firmly or raises her voice at him, child becomes upset, sorry, or ashamed about displeasing her.

(Do not score high if child is simply upset by the raised voice or afraid of getting punished.)

25. Child is easy for mother to lose track of when he is playing out of her sight.

Low: Talks and calls when out of sight. Easy to find; easy to keep track of what he is playing with.

***Middle if never plays out of sight.*

26. Child cries when mother leaves him at home with babysitter, father, or grandparent.

Low: Doesn't cry with any of these.

27. Child laughs when mother teases him.

Low: Annoyed when mother teases him.

***Middle if mother never teases child during play or conversations.*

28. Child enjoys relaxing in mother's lap.

Low: Prefers to relax on the floor or on furniture.

***Middle if child never sits still.*

29. At times, child attends so deeply to something that he doesn't seem to hear when people speak to him.

Low: Even when deeply involved in play, child notices when people speak to him.

30. Child easily becomes angry with toys.

31. Child wants to be the center of mother's attention. If mom is busy or talking to someone, he interrupts.

Low: Doesn't notice or doesn't mind not being the center of mother's attention.

32. When mother says "No" or punishes him, child stops misbehaving (at least at that time). Doesn't have to be told twice.

33. Child sometimes signals mother (or gives the impression) that he wants to be put down, and then fusses or wants to be picked right back up.

Low: Always ready to go play by the time he signals mother to put him down.

34. When child is upset about mother leaving him, he sits right where he is and cries. Doesn't go after her.

Low: Actively goes after her if he is upset or crying.

**Middle if never upset by her leaving.*

35. Child is independent with mother. Prefers to play on his own; leaves mother easily when he wants to play.

Low: Prefers playing with or near mother.

**Middle if not allowed or not enough room to play away from mother.*

36. Child clearly shows a pattern of using mother as a base from which to explore.

Moves out to play;
Returns or plays near her;
Moves out to play again, etc.

Low: Always away unless retrieved, or always stays near.

37. Child is very active. Always moving around. Prefers active games to quiet ones.

38. Child is demanding and impatient with mother. Fusses and persists unless she does what he wants right away.

39. Child is often serious and businesslike when playing away from mother or alone with his toys.

Low: Often silly or laughing when playing away from mother or alone with his toys.

40. Child examines new objects or toys in great detail. Tries to use them in different ways or to take them apart.

Low: First look at new objects or toys is usually brief. (May return to them later however.)

41. When mother says to follow her, child does so.

(Do not count refusals or delays that are playful or part of a game unless they clearly become disobedient.)

42. Child recognizes when mother is upset.

Becomes quiet or upset himself.
Tries to comfort her.
Asks what is wrong, etc.

Low: Doesn't recognize; continues play; behaves toward her as if she were ok.

43. Child stays closer to mother or returns to her more often than the simple task of keeping track of her requires.

Low: Doesn't keep close track of mother's location or activities.

44. Child asks for and enjoys having mother hold, hug, and cuddle him.

Low: Not especially eager for this. Tolerates it but doesn't seek it; or wiggles to be put down.

45. Child enjoys dancing or singing along with music.

Low: Neither likes nor dislikes music.

46. Child walks and runs around without bumping, dropping, or stumbling.

Low: Bumps, drops, or stumbles happen throughout the day (even if no injuries result).

47. Child will accept and enjoy loud sounds or being bounced around in play, if mother smiles and shows that it is supposed to be fun.

Low: Child gets upset, even if mother indicates the sound or activity is safe or fun.

48. Child readily lets new adults hold or share things he has, if they ask to.

49. Runs to mother with a shy smile when new people visit the home.

Low: Even if he eventually warms up to visitors, child initially runs to mother with a fret or a cry.

**Middle if child doesn't run to mother at all when visitors arrive.*

50. Child's initial reaction when people visit the home is to ignore or avoid them, even if he eventually warms up to them.

51. Child enjoys climbing all over visitors when he plays with them.

Low: Doesn't seek close contact with visitors when he plays with them.

**Middle if he won't play with visitors.*

52. Child has trouble handling small objects or putting small things together.

Low: Very skillful with small objects, pencils, etc.

53. Child puts his arms around mother or puts his hand on her shoulder when she picks him up.

Low: Accepts being picked up but doesn't especially help or hold on.

54. Child acts like he expects mother to interfere with his activities when she is simply trying to help him with something.

Low: Accepts mother's help readily, unless she is in fact interfering.

55. Child copies a number of behaviors or ways of doing things from watching mother's behavior.

Low: Doesn't noticeably copy mother's behavior.

56. Child becomes shy or loses interest when an activity looks like it might be difficult.

Low: Thinks he can do difficult tasks.

60. If mother reassures him by saying "It's ok" or "It won't hurt you", child will approach or play with things that initially made him cautious or afraid.

***Middle if never cautious or afraid.*

57. Child is fearless.

Low: Child is cautious or fearful.

61. Plays roughly with mother. Bumps, scratches, or bites during active play.

(Does not necessarily mean to hurt mom)

Low: Plays active games without injuring mother.

***Middle if play is never very active.*

58. Child largely ignores adults who visit the home. Finds his own activities more interesting.

Low: Finds visitors quite interesting, even if he is a bit shy at first.

62. When child is in a happy mood, he is likely to stay that way all day.

Low: Happy moods are very changeable.

59. When child finishes with an activity or toy, he generally finds something else to do without returning to mother between activities.

Low: When finished with an activity or toy, he returns to mother for play, affection or help finding more to do.

63. Even before trying things himself, child tries to get someone to help him.

64. Child enjoys climbing all over mother when they play.

Low: Doesn't especially want a lot of close contact when they play.

65. Child is easily upset when mother makes him change from one activity to another.

(Even if the new activity is something child often enjoys.)

66. Child easily grows fond of adults who visit his home and are friendly to him.

Low: Doesn't grow fond of new people very easily.

67. When the family has visitors, child wants them to pay a lot of attention to him.

68. On the average, child is a more active type person than mother.

Low: On the average, child is less active type person than mother.

69. Rarely asks mother for help.

Low: Often asks mother for help.

**Middle if child is too young to ask.*

70. Child quickly greets his mother with a big smile when she enters the room.

(Shows her a toy, gestures, or says "Hi, Mommy")

Low: Doesn't greet mother unless she greets him first.

71. If held in mother's arms, child stops crying and quickly recovers after being frightened or upset.

Low: Not easily comforted.

72. If visitors laugh at or approve of something the child does, he repeats it again and again.

Low: Visitors' reactions don't influence child this way.

73. Child has a cuddly toy or security blanket that he carries around, takes to bed, or holds when upset.

(Do not include bottle or pacifier if child is under two years old.)

Low: Can take such things or leave them, or has none at all.

74. When mother doesn't do what child wants right away, he behaves as if mom were not going to do it at all.

(Fusses, gets angry, walks off to other activities, etc.)

Low: Waits a reasonable time, as if he expects mother will shortly do what he asked.

75. At home, child gets upset or cries when mother walks out of the room.

(May or may not follow her.)

Low: Notices her leaving; may follow but doesn't get upset.

76. When given a choice, child would rather play with toys than with adults.

Low: Would rather play with adults than toys.

77. When mother asks child to do something, he readily understands what she wants. (May or may not obey.)

Low: Sometimes puzzled or slow to understand what mother wants.

**Middle if child is to young to understand.*

78. Child enjoys being hugged or held by people other than his parents and/or grandparents.

79. Child easily becomes angry at mother.

Low: Doesn't become angry at mother unless she is very intrusive or he is very tired.

80. Child uses mother's facial expressions as a good source of information when something looks risky or threatening.

Low: Makes up his own mind without checking mother's expressions first.

81. Child cries as a way of getting mother to do what he wants.

Low: Mainly cries because of genuine discomfort (tired, sad, afraid, etc.).

82. Child spends most of his play time with just a few favorite toys or activities.

83. When child is bored, he goes to mother looking for something to do.

Low: Wanders around or just does nothing for a while, until something comes up.

84. Child makes at least some effort to be clean and tidy around the house.

Low: Spills and smears things on himself and on floors all the time.

85. Child is strongly attracted to new activities and new toys.

Low: New things do not attract him away from familiar toys or activities.

86. Child tries to get mother to imitate him, or quickly notices and enjoys it when mom imitates him on her own.

87. If mother laughs at or approves of something the child has done, he repeats it again and again.

Low: Child is not particularly influenced this way.

88. When something upsets the child, he stays where he is and cries.

Low: Goes to mother when he cries. Doesn't wait for mom to come to him.

---

89. Child's facial expressions are strong and clear when he is playing with something.

---

90. If mother moves very far, child follows along and continues his play in the area she has moved to.

(Doesn't have to be called or carried along; doesn't stop play or get upset.)

**Middle if child isn't allowed or doesn't have room to be very far away.*

APPENDIX H

Early Childhood Environment Rating Scale (1980)

Name of Facility	Room	Age of Children youngest to oldest	Name of Rater	Position of Rater	Date
		to			

1. Greeting/departing
1 2 3 4 5 6 7

2. or ◆2. Meals/snacks
1 2 3 4 5 6 7

3. Nap/rest
1 2 3 4 5 6 7

4. Diapering/toileting
1 2 3 4 5 6 7

5. Personal grooming
1 2 3 4 5 6 7

Total Personal Care (Items 1-5)

6. Furnishings (routine)
1 2 3 4 5 6 7

7. or ◆7. Furnishings (learning)
1 2 3 4 5 6 7

8. Furnishings (relaxation)
1 2 3 4 5 6 7

9. Room arrangement
1 2 3 4 5 6 7

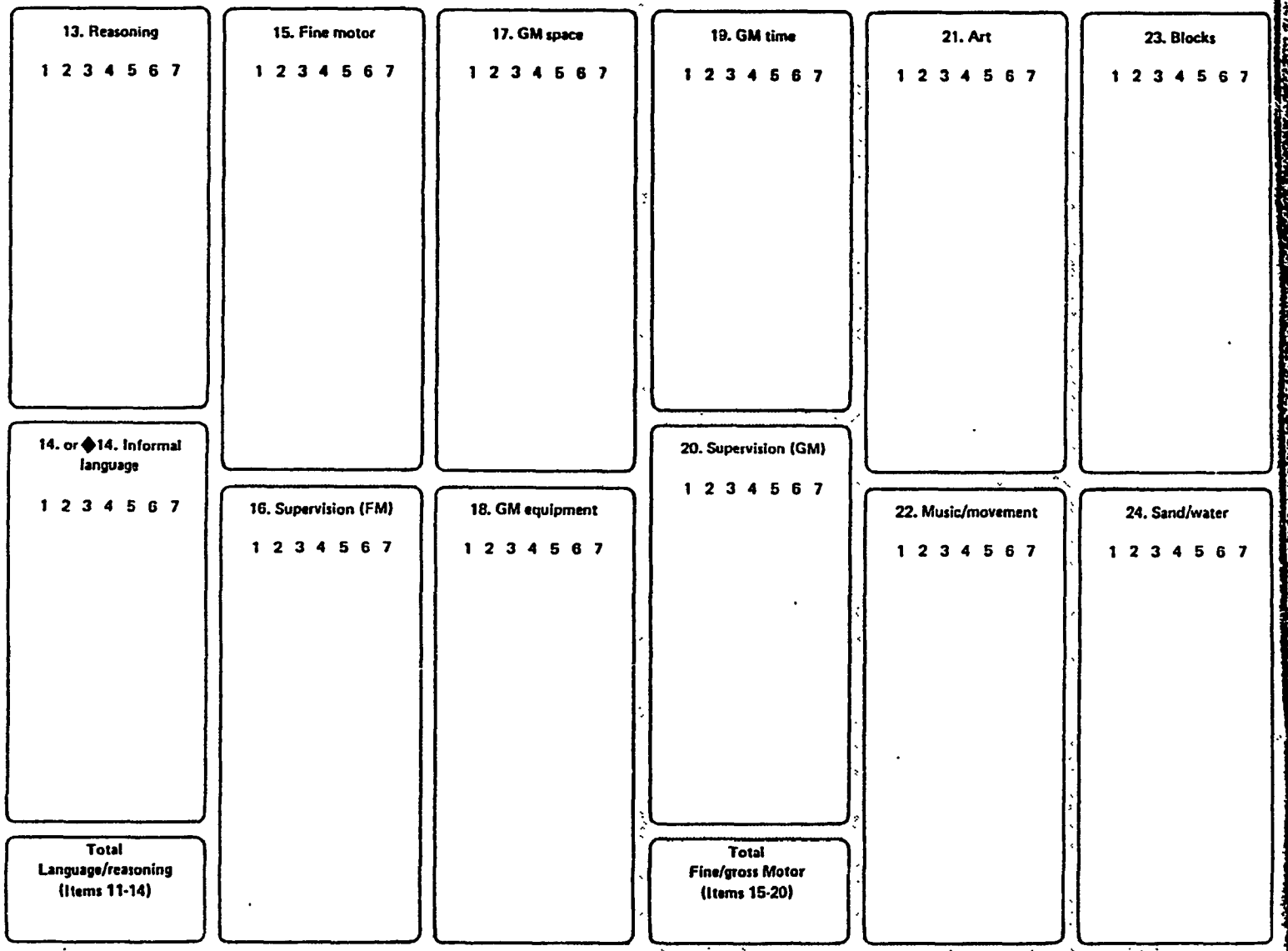
10. or ◆10. Child related display
1 2 3 4 5 6 7

Total Furnishings/display (Items 6-10)

11. Understanding language
1 2 3 4 5 6 7

12. Using language
1 2 3 4 5 6 7

EARLY CHILDHOOD ENVIRONMENT RATING SCALE


13. Reasoning
1 2 3 4 5 6 7
15. Fine motor
1 2 3 4 5 6 7
17. GM space
1 2 3 4 5 6 7
19. GM time
1 2 3 4 5 6 7
21. Art
1 2 3 4 5 6 7
23. Blocks
1 2 3 4 5 6 7
14. or ◆14. Informal language
1 2 3 4 5 6 7
16. Supervision (FM)
1 2 3 4 5 6 7
18. GM equipment
1 2 3 4 5 6 7
20. Supervision (GM)
1 2 3 4 5 6 7
22. Music/movement
1 2 3 4 5 6 7
24. Sand/water
1 2 3 4 5 6 7
Total Language/reasoning (Items 11-14)
Total Fine/gross Motor (Items 15-20)
EARLY CHILDHOOD ENVIRONMENT RATING SCALE
© THELMA HARMS and RICHARD M. CLIFFORD 1980 TEACHERS COLLEGE PRESS

25. Dramatic play

1 2 3 4 5 6 7

26. Schedule (creative)

1 2 3 4 5 6 7

27. Supervision (creative)

1 2 3 4 5 6 7

Total Creative Activities (Items 21-27)

28. Space (alone)

1 2 3 4 5 6 7

29. Free play

1 2 3 4 5 6 7

30. Group time

1 2 3 4 5 6 7

31. Cultural awareness

1 2 3 4 5 6 7

32. Tone

1 2 3 4 5 6 7

33. Exceptional provisions

1 2 3 4 5 6 7

Total Social Development (Items 28-33)

34. Adult personal area

1 2 3 4 5 6 7

35. Adult opportunities

1 2 3 4 5 6 7

36. Adult meeting area

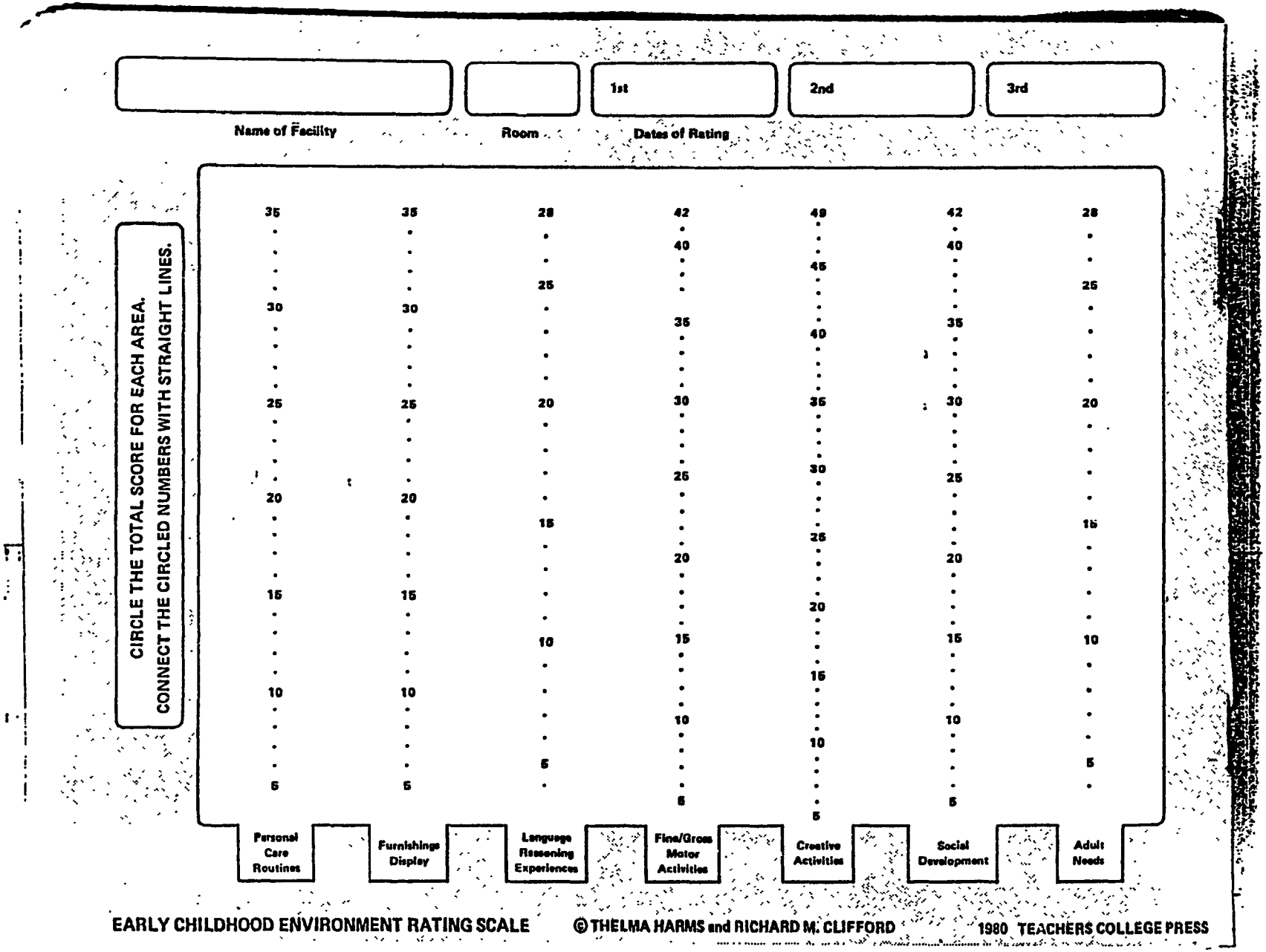
1 2 3 4 5 6 7

37. Parent provisions

1 2 3 4 5 6 7

Total Adults (Items 34-37)

EARLY CHILDHOOD ENVIRONMENT RATING SCALE


Name of Facility
Room
1st
2nd
3rd
Dates of Rating
CIRCLE THE TOTAL SCORE FOR EACH AREA.
CONNECT THE CIRCLED NUMBERS WITH STRAIGHT LINES.
35 30 25 20 15 10 5
35 30 25 20 15 10 5
28 25 20 15 10 5
42 40 35 30 25 20 15 10 5
49 45 40 35 30 25 20 15 10 5
42 40 35 30 25 20 15 10 5
28 25 20 15 10 5
Personal Care Routines
Furnishings Display
Language Reasoning Experiences
Fine/Gross Motor Activities
Creative Activities
Social Development
Adult Needs
EARLY CHILDHOOD ENVIRONMENT RATING SCALE
© THELMA HARMS and RICHARD M. CLIFFORD 1980 TEACHERS COLLEGE PRESS