

**The Great Child Care Debate:  
The Long-Term Effects of  
Non-Parental Child Care**

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## SUMMARY

Over the past twenty years, regular participation in child care/early childhood services outside the immediate family has become commonplace for many Canadian children. Discussion about this participation has sometimes taken the form of a debate: does child care have benefits for young children or is its impact a negative one? On one hand, there have been concerns that participation in regular non-parental child care during infancy may have a negative effect on the ability of the child to develop a secure relationship with the mother. It has also been suggested that for children older than age one, non-parental child care may be associated with later social maladjustment, for example, aggression toward peers. On the other hand, child care/early childhood services have been hailed as a benefit to children's social and intellectual development.

This paper reviews twenty-one studies that compared children with non-parental child care prior to school entry and children without this experience when they are in kindergarten or later grades. All but two of these report positive outcomes for children in child care, or report no between-group difference. In one of the two studies with a negative outcome, heightened levels of aggression were only found among children who had attended a specific child care centre, not among children who had attended other child care centres. In the other study, the non-parental child care was provided by untrained people who were responsible for a large number of children at one time.

Children with regular (usually centre-based) non-parental child care have been found to:

- have better ability to get along with other children at the time of school entry and in later elementary school grades;
- be rated by their teacher as having had an easier transition into elementary school and better classroom skills, for example, ability to follow directions and resist distraction, both in the first year of school and subsequent years;
- have a larger vocabulary at the time of school entry and better language skills in subsequent grades;
- have higher levels of cognitive functioning at school entry and as ten-year-olds; and
- perform better in measures of academic readiness in kindergarten and in school subjects in later grades.

Two major themes emerge from this review. First, the research does not support the view that participation in child care is harmful. Indeed, it suggests that child care experience with a group of peers can be valuable, especially with regard to the development of peer relationship, language and classroom skills. Second, it is important that child care is high quality. This means that it is provided by people who have knowledge of child development, who are not responsible for too many children at a time, and who provide activities designed to stimulate exploration and skill development.

Some young children in full-time non-parental child care spend more of their waking hours with the caregiver than they do with their parents. Poor quality non-parental child care, with its lack

of adult encouragement or stimulation, may mimic the homes of children from poor home environments. There is a large body of research that illustrates that the lack of stimulation found in such homes has a negative effect on children's language development and cognitive functioning. Therefore, it is not surprising that growing up in a middle-class home cannot compensate for the negative impact of full-time, non-parental child care that is similar to a poor home environment.

Contemporary and future realities suggest that the workforce participation of women with children under age six will remain high. The caregiver behaviours and setting characteristics associated with the support and encouragement of child well-being and development have been well documented by many research studies. For both the sake of the individual child, and the good of society as a whole, it is essential that the non-parental child care received by young children be of high quality to promote healthy development, learning and well-being.

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## CHAPTER I - CONTEXT

### Introduction

Any adult who has the responsibility for a young child in the absence of the parent is providing non-parental child care. As with parental care, this involves both protection of the child's health and safety, and encouragement of his/her skill and knowledge development ('education' in the broad sense). The extent to which the adult focuses on one aspect or the other depends (at least in part) on the child's age. For example, when a child is only a few months old, health and safety are primary concerns. There are also opportunities to stimulate social awareness as a basis for later social skill development. By age five, most children have become relatively skilled in looking after their physical needs and understand safety requirements like looking before crossing the street. While the emphasis can move to encouraging a basic understanding of the environment, provisions for basic health and safety cannot be ignored.

Non-parental child care for children under age six can be provided in the child's home, the home of the caregiver, a nursery school, a child care centre, or a school-based pre-primary or kindergarten program. It may be full-day, half-day, or extended hours, five days a week or less often. Canadian child care centres, nursery schools, and kindergartens were originally established for different reasons, and perceived to have different purposes. It is now recognized, however, that the needs of the child for health and safety, and the developmental tasks faced at particular ages, are the same despite the setting, the academic qualifications of the caregiver, or the name given to the non-parental child care. Therefore, it would be most appropriate to use a single term, like 'early childhood service' for non-parental child care involving a group of unrelated children. (Strictly speaking, however, the term 'service' is not ordinarily used to refer to private or informal arrangements for non-parental child care.)

The studies discussed in this paper represent child care/early childhood services identified by the researchers as one of the following: nursery schools, play groups, child care centres, child care in the provider's home (which often involves a group of children), school-based pre-kindergarten programs, or kindergartens. In several studies, children identified as having received non-parental child care prior to school entry received it through a variety of mechanisms. Thus, in a given study, some children may have attended child care centres while others attended preschool programs or received child care in a provider's home.

### Selection of the studies

Twenty-one studies comparing children with and without regular non-parental child care are reviewed in this paper. The basic criterion for study selection was the inclusion of a comparison group of children without regular child care experience. In some studies, the comparison is between 20 hours or more versus less than 20 hours of non-parental care. There are, however, some exceptions to this criterion: Haskins, 1985; Tietze, 1987; Ministère de l'Éducation Nationale, 1983; and Richardson & Marx, 1989. The Haskins study involved three groups of children: one group who had attended a specific child care centre, a second group who had attended a variety of centres, and a third group without regular non-parental care prior to school entry. The other studies are national studies comparing children with and without regular centre-based child care during their preschool period. Some of the children without centre-based care may have experienced other forms of non-parental care on a regular basis prior to school entry. It

should be noted that all the studies involved ordinary community services, not highly resourced university-operated or compensatory programs.

### **Contemporary realities**

Today, non-parental child care facilitates parents' participation in the paid labour force and provides children with the opportunity to participate in early childhood services. The majority of children under age six in Canada are in some form of non-parental child care. This reflects both the desire by parents to provide early childhood opportunities for their children, and economic conditions that are unlikely to change in the near future. As a result, it is essential to examine the implications of the widespread use of child care/early childhood services, and to identify the characteristics of such care that are necessary to enhance child well-being and development. (A thorough discussion of these contemporary realities can be found in *Child Care: Canada Can't Work Without it*, by G. Doherty, R. Rose, M. Friendly, D. Lero, and S. Hope Irwin, 1995).

### **Future realities**

From the perspectives of both the individual and of society, it is essential that all children be helped to develop to their optimal level. In this regard, what happens to the child during the first six years of life is crucial. There is increasing evidence that failure to develop certain skills during this period has negative effects on the individual's life-long competency (Doherty-Derkowski, 1995). The formative nature of the preschool period, and the extensive use of non-parental child care for children younger than school-age, underlines the need to ensure that such child care enhances rather than impedes children's development.

### **The great debate**

In 1991, 62% of women whose youngest child was under age three, and 68% whose youngest child was between age three and five, were in the paid workforce (Statistics Canada, 1992). More than two-thirds (68%) of these mothers worked on a full-time basis (calculations based on Statistics Canada, 1992). Children in full-time child care typically receive nine hours of care a day. Based on 250 days of care a year, allowing for holidays, a child entering child care at six months of age would receive 12,375 hours of non-parental child care by age six (Human Resources Development Canada, 1994b). This is almost as much as the estimated 13,680 hours of class time experienced by a child in grades one to 12 (Human Resources Development Canada, 1994b).

The reality that many young children are in extensive non-parental child care has resulted in an impassioned debate. Sampling the briefs that discuss child care presented to a federal government Standing Committee on Human Resources Development in 1994 reveals a wide range of positions. At one end of the continuum are assertions that "institutionalization" of children through extensive child care during the first six years of life will inevitably lead to increased rates of school problems, juvenile delinquency, and childhood clinical depression.

At the other end of the continuum are assertions that greater availability of early childhood services would lead to enhanced development for all children. This view often seems largely based on reports of long-term successful outcomes for severely impoverished children in the United States who attended compensatory preschools, for example, the Perry Preschool program (see the Appendix for a brief review of this literature). However, as the children in these studies are not

representative of the majority of Canadian children (or indeed, the majority of child care situations), it is inappropriate to assume on the basis of this research that the sustained cognitive and academic benefits resulting from compensatory programs will be attained by children who are not impoverished.

### **The purpose of this paper**

This paper discusses the research findings related to the effect of receiving regular non-compensatory non-parental child care between birth and age six. The purpose is to summarize data that can be applied to ordinary children in non-parental child care. Therefore, the outcome research on the effects of special compensatory programs for severely socially and economically disadvantaged preschoolers are not discussed in the body of the paper. Instead, a brief summary of this research is presented in the Appendix.

The paper provides a review of the available research to address several often-asked questions:

1. Is daily separation from the mother damaging for young children, especially if the non-maternal child care occurs during infancy?
2. What is the long-term effect of regular non-parental child care before age six on children's development, learning, and school performance?
3. What characteristics of non-parental child care before age six are associated with child well-being and supportive of children's development?

### **The format of this paper**

Chapter II examines the impact of extensive non-parental child care during infancy. As noted by Thompson (1991), the issue of infant child care crystallizes the tensions that exist between our perception of what is good for children and existing social realities. The traditional view in western societies has been that maternal care is essential during infancy for the child's healthy psychological and social development (Ainsworth, Blehar, Waters & Wall, 1978; Bowlby, 1969). However, workforce participation by women with infants has increased significantly in the past two decades, and is expected to continue to increase.

Chapters III and IV examine what the research tells us about the impact of extensive child care in the preschool years on the child's transition into the formal school system. Chapter III discusses the importance of peer relationship and classroom skills for a successful transition into elementary school, and examines the research findings related to these two types of skills. Chapter IV looks at the effect of prior child care on children's cognitive functioning, language skills, and academic readiness at the time of school entry. Chapters III and IV provide summary tables on the research findings for each of the five competency areas examined.

Chapter V discusses the longitudinal research (beyond grade one) that has followed children who have been in child care as preschoolers. The research findings are discussed under headings parallel to those used in Chapters III and IV: peer relationship skills, classroom skills, cognitive functioning, language skills, and academic functioning. Summary tables on the research findings are presented for each of the five competency areas.

The final chapter discusses what the research tells us about the characteristics of child care that enhance young children's well-being and development, including an examination of research findings related to the role of government regulation, funding, and auspice.

## CHAPTER II - NON-PARENTAL CHILD CARE BEFORE AGE ONE

### Introduction

Developmental psychologists consider experiences with caregivers during the first year of life to be critical for the development of children's feelings about themselves, their expectations of others, their capacity to form relationships, and their later ability to handle stress. For some psychologists, the development of a positive self-image and positive outlook depends upon the extent to which the infant develops a *secure attachment* to a primary caregiver (Belsky, 1986; Bowlby, 1969; Bretherton, 1985). A *secure attachment* to the caregiver is expected to develop when an infant experiences the adult as sensitive, responsive, and generally available when required. It is anticipated that infants whose needs have not been met, or have been met insensitively or inconsistently, will develop an *insecure attachment*. Infants with an *insecure attachment* are expected to view the world as rejecting and, as older children, to act accordingly (for example, by being aggressive).

Until about the mid 1970's, the dominant child-rearing model in North America was a nuclear family consisting of a husband and wife, and their children. The father's employment provided the family's material necessities; it was relatively unusual for a married woman with young children to participate in the paid workforce. It was assumed that the mother would stay at home and care for her children more or less exclusively, at least until the age of formal school entry. Parenting primarily carried out by one female adult, usually the child's mother, was perceived to be the natural order of things (McGurk, Caplan, Hennessy & Moss, 1993). Until fairly recently, many psychologists believed that infants formed only one primary attachment. The view of the mother as the primary caregiver, coupled with a belief that infants formed only one attachment, resulted in the notion that maternal care during the first year of life is crucial for the child's well-being and development. However, research has shown that infants can (and often do) simultaneously have secure attachment relationships with mother, father, and other caregivers (Goossens & van IJzendoorn, 1990; Howes & Hamilton, 1992).

### Extensive non-maternal child care in infancy and the security of the attachment between mother and child

#### a) Issue

In 1986, Jay Belsky, a respected American developmental psychologist, expressed the opinion that:

...a relatively persuasive *circumstantial* case can be made that early infant care *may* be associated with increased avoidance of mother, *possibly* to the point of greater insecurity in the attachment relationship (Belsky, 1986, p. 6, Belsky's italics).

Belsky's article received wide coverage in the popular media. Due to the hypothesized importance of a secure attachment between mother and child, his suggestion caused concern among both professionals and parents. In a follow-up article, Belsky (1988) cited a group of American studies that indicate that, when the data are pooled and analyzed as a single data set, children receiving non-maternal child care for 20 hours or more per week during infancy are more likely to have an

insecure attachment to their mother than are children who primarily receive maternal care during infancy.

*b) Research methods and findings*

The security of the attachment between mother and child has most often been investigated through a laboratory procedure called the *Strange Situation* (Ainsworth & Wittig, 1969). The *Attachment Q-Set* (Waters & Deane, 1985), which involves observation of the mother and child in a familiar setting, is also used, as are other methods.

The studies cited by Belsky (1988) all used the *Strange Situation*. Combining the results from other groups of studies also using this method has resulted in the same finding (Clarke-Stewart, 1988; Lamb, Sternberg & Prodromidis, 1992). However, McCartney and Galanopoulos (1988) report on a group analysis of a *different* set of studies also using the *Strange Situation* that failed to find evidence of less secure attachment among children who had received extensive non-parental child care as infants. In addition, studies using different measures of mother-child attachment, such as the *Attachment Q-Set*, have not found a difference in the level of security among infants who have or have not had extensive non-parental child care (Belsky & Rovine, 1988; Cochran, 1977; Howes, Rodning, Galluzzo & Myers, 1988; Roggman, Langlois, Hubbs-Tait & Rieser-Donner, 1994; Weinraub, Jaeger & Hoffman, 1988).

*c) Conclusions*

The research into the association between the extent of non-parental child care during infancy and the security of the attachment between the mother and child is inconclusive. Not only are conflicting findings reported across studies using different approaches to measure the security of the mother-child relationship, this also occurs when the same approach is used.

The findings from studies examining the association between the security of the attachment between mother and child during infancy and children's later behaviour also vary. Children with secure relationships to their mothers when infants have been reported to be:

- more sociable with others and to have a more positive orientation to them when toddlers (Pastor, 1981); and
- as having higher levels of competence in social situations with other children when they are preschool age or in kindergarten (LaFreniere & Sroufe, 1985; Waters, Wippman & Sroufe, 1979).

However, two other studies report no association between the security of the mother-child attachment in infancy and children's competency in relating to peers when they are three- and four-year-olds (Howes, Matheson & Hamilton, 1994; Jacobson & Wille, 1986).

In the opinion of some developmental psychologists, the effect of extensive non-maternal care during infancy on the security of the attachment relationship between mother and child is still not clear. Recent hypotheses suggest that the effect probably depends upon a combination of two or more of: a) the child's characteristics; b) the mother's behaviour with the child; c) what is going on in the home during the infancy period (for example, the degree of maternal stress); and d) the characteristics of the alternate care setting (Clarke-Stewart, 1992; Lamb, Sternberg & Prodromidis, 1992; McGurk, Caplan, Hennessy & Moss, 1993; Thompson, 1991).

## **Extensive non-maternal child care in infancy and later social adjustment**

### *a) Issue*

Belsky (1986) also expresses concern that extensive non-maternal child care before age one:

...*may* be associated with diminished compliance and cooperation with adults, increased aggressiveness, and possibly even greater social maladjustment in the preschool and early school years (Belsky, 1986, p. 6, Belsky's italics).

Belsky bases his concern on published reports from four American longitudinal studies (Farber & Egeland, 1982; Haskins, 1985; Rubenstein, Howes & Boyle, 1981; Schwarz, Strickland & Krolick, 1974) and one study conducted in Bermuda (McCartney, Scarr, Phillips, Gajec & Schwarz, 1982).

### *b) Research findings*

The difference in the level of compliance with the mother among children who had or had not received regular non-parental child care reported by Farber and Egeland (1982) was not statistically significant; that is, it could have occurred by chance. The apparent negative effect of extensive non-parental child care during infancy in the four other studies cited by Belsky (1986, 1988) can be explained by factors in addition to or other than infant non-parental care per se.

In two of the studies cited by Belsky (Haskins, 1985; Schwarz et al., 1974), the heightened level of aggression was only found in children who had been in a centre with a highly structured program that stressed cognitive development. Children with extensive non-parental care in other settings as infants were not rated as more aggressive or non-compliant than children without prior experience of regular non-parental care. When the program approach in the highly structured centre studied by Haskins was modified, the rate of aggression among children was considerably less when measured just prior to their admission into kindergarten (Finklestein, 1982). Thus, the findings obtained by Haskins (1985) and Schwarz et al. (1974) may raise more concerns about the appropriateness of a heavy focus on cognitive development in a program for infants than they do about non-maternal child care.

A follow-up article to the Rubenstein et al. (1981) study cited by Belsky reports that although there were some differences on some measures of social maladjustment between children with or without extensive non-maternal care in infancy, on other measures there were no between-group differences (Rubenstein & Howes, 1983). Moreover, the children who showed more emotional difficulties at age three in terms of behaviour problems, tantrums, and evidence of anxiety during the assessment, were the same children who at age 18 months had caregivers who were more restrictive with them and provided lower levels of praise. This held true whether the caregiver was the mother or some other provider of regular non-parental child care. Rubenstein and Howes (1983, p. 41-42) concluded that later behaviour problems were predicted by differences in the caregivers' behaviours with the children prior to age 18 months; "they were not predicted by whether the toddler had been in day care or at home".

In the Bermuda study cited by Belsky (McCartney et al., 1982), a statistically significant difference in staff ratings of child anxiety was found for preschool children who received extensive *sitter* care as infants but not for those who had extensive experience in a child care centre while in infancy. Thus, it appears that the elevated ratings of anxiety were associated with a particular form of non-

parental child care. Furthermore, the actual range of the anxiety rating for the children who had been in sitter care was within the normal range and well below the level considered to have clinical significance (Phillips, McCartney & Scarr, 1987).

Seven other American studies report no association between extensive non-maternal child care in infancy and later aggression, non-compliance or other indications of social maladjustment (Burchinal, Ramey, Reid & Jaccard, 1995; Golden, Rosenbluth, Grossi, Policare, Freeman & Brownlee, 1979; Hegland & Rix, 1990; Howes, 1990; Macrae & Herbert-Jackson, 1976; Mott, 1991; Thornburg, Pearl, Crompton & Ispa, 1990). In addition, Doyle (1975) from Canada, Melhuish, Hennessey, Martin and Moss (1990) from England, and Cochran and Gunnarsson (1985) from Sweden found no between-group differences in the extent of aggression shown by children with or without extensive non-maternal care as infants. Another Swedish study reports that at age eight, children who had entered child care before age one were rated by their teachers as *less* anxious and *more* independent than children who entered child care later or were primarily cared for at home by their mother prior to school entry (Andersson, 1989).

Three American studies not cited by Belsky (1986, 1988) report an association between social maladjustment and extensive non-maternal care during infancy (Baydar & Brooks-Gunn, 1991; Park & Honig, 1991; Vandell & Corasaniti, 1990). In all three studies, the negative findings may reflect something instead of, or in addition to, the experience of regular non-parental child care during the first year of life.

In the study by Baydar and Brooks-Gunn (1991) children whose mother was employed more than 20 hours a week during their infancy received most of their care from a parent (27.7%), a relative (40.6%), or what the researchers refer to as "sitters" (26.7%). Only 5.0% were enrolled in a child care centre. No information is provided about the quality of the non-parental child care. A recent American study of people looking after other people's children ("sitters" and relatives) reports that 60% of the caregivers who were relatives of the children stated that they were taking care of the child to help the mother, not because they wanted to care for children. Thirty-six percent of the child care providers who said they were providing care primarily to help the mother were rated by a standard observational scale as providing "inadequate" care, that is, care that impedes children's well-being and development (Galinsky, Howes, Kontos & Shinn, 1994).

In the Park and Honig (1991) study, three- and four-year-old children who had been enrolled in child care centres as infants were found to be more aggressive than children who entered non-parental child care after having cared for primarily by their mothers during their first 12 months. Statistical analysis revealed that the children's teacher-reported and researcher-observed levels of aggression were predicted by the children's gender and by the quality of their *current* non-parental child care situation. Whether the child's enrollment in child care was during infancy or later was *not* predictive of the child's level of aggression at age three or four.

Vandell and Corasaniti (1990) found that children with extensive non-parental child care as infants were rated by teachers when they were eight years of age as having poorer peer relationships and emotional well-being, and as being more difficult to discipline than children primarily cared for by their mothers until school entry. All the children had been in child care centres in a state that the researchers characterized as having "minimal standards." Vandell and Corasaniti hypothesize that the contrast between their findings and those of other studies reflects the impact of poor quality care. Support for this hypothesis comes from studies that have compared the current or later behaviour and/or functioning of children who received poor quality child care and children who received high quality child care (Goelman & Pence, 1988; Howes & Olenick, 1986; Peterson & Peterson, 1986;

Phillips, McCartney & Scarr, 1987; Schliecker, White & Jacobs, 1991; Vandell & Powers, 1983; White, Jacobs & Schliecker, 1988).

*c) Conclusion*

This review of the published research illustrates that there are more studies that have failed to find an association between extensive non-maternal child care during infancy and later social maladjustment than there are studies finding such an association. In the studies reviewed that found a negative effect for extensive non-parental child care in infancy, this effect can be explained by factors such as the quality of the non-parental child care. What is meant by the term "quality" when used to describe child care, and the research findings identifying the characteristics of good quality non-parental child care, are discussed in Chapter VI.

**The later effect of extensive non-parental child care**

The following two chapters, III and IV, explore the research findings related to the effect of extensive non-parental child care on children's transition into the formal school system. Chapter V discusses the studies that have examined the effect of preschool non-parental child care on the children after they have entered grade one.

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## CHAPTER III - THE TRANSITION TO ELEMENTARY SCHOOL: SOCIAL SKILLS

### Introduction

Successful transition to elementary school requires children to cope with many new demands. These include understanding and adapting to school and teacher behavioural expectations, and gaining acceptance into a new peer group. Such demands are more easily met if the child can interpret social situations, follow directions, and cooperate with other children. As a result, the social skills possessed by the child at the time of school entry are important determinants of the smoothness of the transition to school.

Based on longitudinal studies, researchers have concluded that school achievement is dependent upon the extent to which the child makes a successful transition to school and attains academic basics in the first two or three grades (Alexander & Entwisle, 1988; Entwisle, Alexander, Cadigan & Pallas, 1986; Entwisle & Hayduk, 1988). The child who has a poor start in school carries a record of failure, both in his/her own mind as a self-fulfilling prophesy, and in the formal school record that teachers consult each year. Furthermore, due to the cumulative nature of subjects like reading and mathematics, a child who fails to grasp the essential basics may have gaps in understanding that hinder his or her ability to grasp more advanced concepts (Alexander & Entwisle, 1988).

The transition-to-school and attainment of academic basics reflect a dynamic interaction between:

- what the child brings to school, for example, the level of social skills; and
- the child's experiences in the classroom and the playground.

The child's skills and functioning at the time of school entry reflect a combination of innate abilities and temperament, and prior experiences in the family and in non-parental child care. The school experience may maintain a child's potential for success by fostering abilities that already exist, compensate for poor school readiness and enable the child to perform better than would be expected at the time of school entry, or exacerbate the child's preexisting risk of school failure. This complex interaction is illustrated by Figure 1, on the following page.

The remainder of this chapter examines the impact of regular non-parental child care during the preschool years on the social skills children bring when they first enter the formal school system. A summary table appears on page 15 for peer relationship skills, and on page 17 for classroom skills.

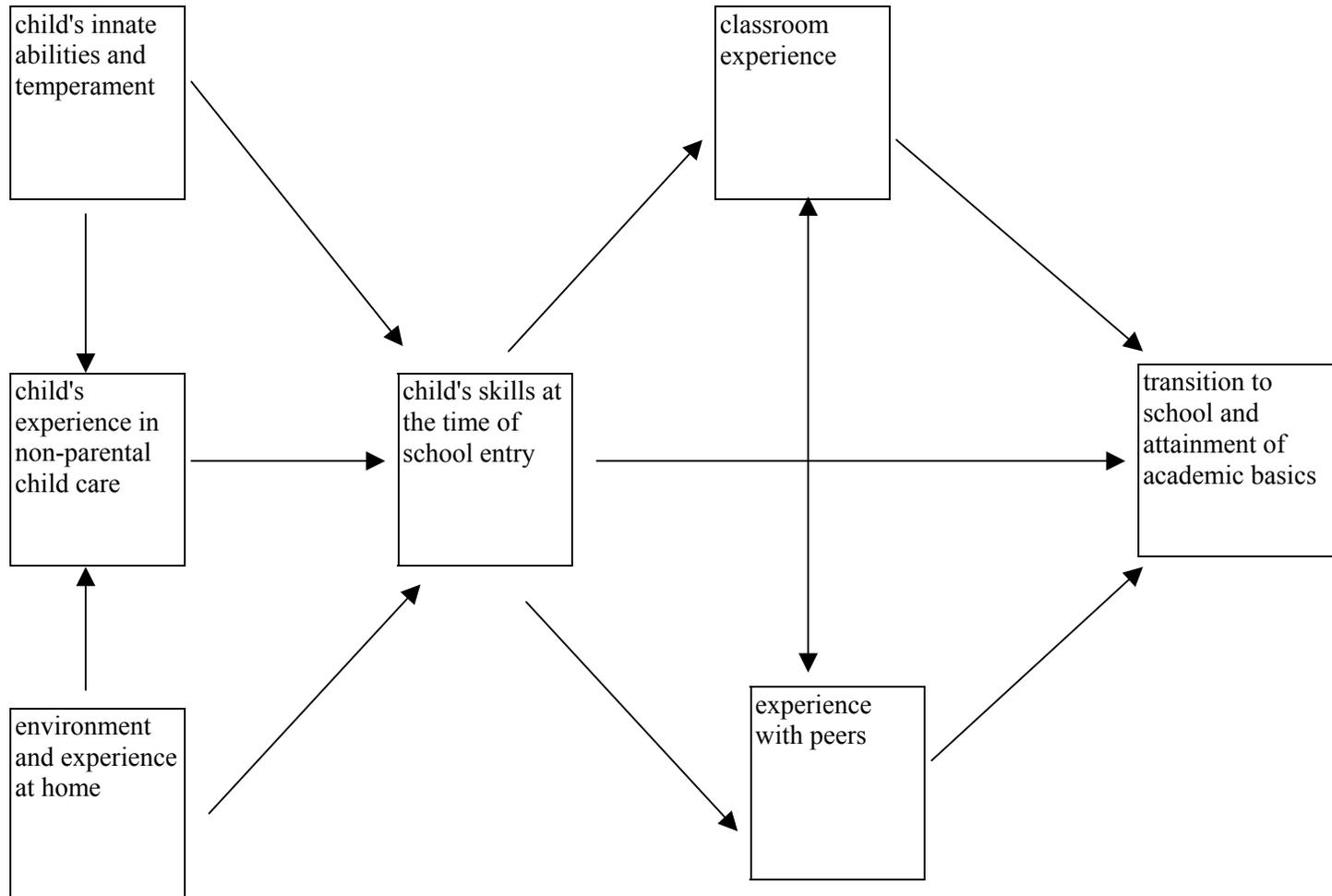
### Peer relationship skills

#### *a) The importance of peer relationship skills*

Psychologists suggest that friendships with classmates provide children with a major source of support that helps them deal with the stress of the new environment and the challenges that they encounter upon entering school (Berndt & Perry, 1986; Ladd, 1990). Research from the United States supports this view. Ladd (1990) found that children's ability to establish and maintain positive relationships with their classmates during the first few weeks of school was directly related to their success in adjusting to school.

Figure 1

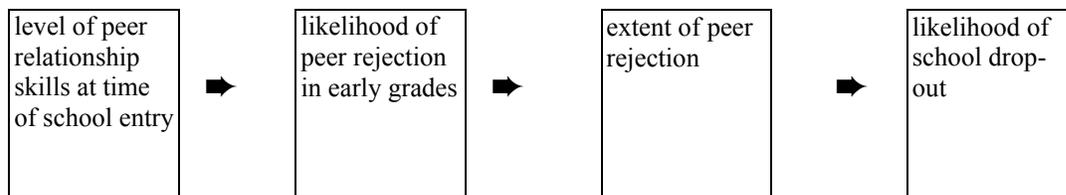
**The interaction between the child's skills at the time of school entry and the child's experience in the classroom and the playground**



The ability to obtain peer acceptance and maintain positive relationships with other children depends upon the child's social skills. Children who have not developed the social skills necessary for positive peer relationships by early elementary school have been observed to behave consistently in ways that lead to peer rejection (Coie & Kupersmidt, 1983; Dodge, 1983; Dodge, Coie & Brakke, 1982; Ladd, 1983; Ladd & Price, 1987; Putallaz & Gottman, 1981). Furthermore, a child's ineffectual patterns of social interaction persist over time and across settings resulting in continued peer rejection even if the child changes groups (Coie & Kupersmidt, 1983; Ladd & Price, 1987). Longitudinal studies in the United States have found a direct relationship between peer rejection in the early grades and:

- the child's avoidance of school (Parker & Asher, 1987; Roff, Sells & Golden, 1972); and
- the likelihood that the child will drop out of school before graduation (Barclay, 1966; Gronlund & Holmlund, 1958; Janes, Hesselbrock, Myers & Penniman, 1979).

The relationships discussed above can be illustrated as follows:



Because of the relationships illustrated above, the effect of participation in an early childhood program before school entry on the development of children's peer relationship skills should be of concern to parents, politicians, and policy-makers.

#### *b) Research findings*

Researchers study the effect of participation in a child care program prior to school entry by comparing groups of children who have, or have not, had this experience.<sup>1</sup> With the exception of the study by Haskins (1985), none of the research discussed in this paper involved either severely disadvantaged children or special compensatory preschool programs. Given the samples in the research cited in this report (with the exception of the Haskins study), it is reasonable to assume that the findings reflect what could be expected from a typical good quality early childhood service in the community.

The 1985 study by Haskins has often been cited in both the professional and popular literature as showing that extensive non-parental child care results in aggressive behaviour with peers in elementary school. Because of this concern the study is included here although the 'experimental group' consisted of children considered to be 'at risk' for developmental delay, and their non-parental child care consisted of enrollment at three months of age in a compensatory centre-based program with a heavy emphasis on cognitive development.

In Haskins' study, grade one teachers were asked to rate children from a particular child care centre, referred to as the 'experimental' children, with a 'control' group of age-mates on seven different types of aggression. The 'experimental' children were ranked as exhibiting greater amounts and

types of aggression towards peers in both kindergarten and grade one. However, 28 of the 32 'control' children had attended a child care centre other than the one attended by the 'experimental' children prior to entering kindergarten. When Haskins explored differences between children who had attended different centres, he found that the 'experimental' children were ranked as more aggressive than children who had attended any of the other, more typical, child care centres for a similar period of time. As a result, Haskins (1985) concluded that:

...the effects of day care on aggressive behavior were confined to children attending the cognitively oriented program (Haskins, 1985, p. 701).

Six other studies reviewed for this paper investigated whether children who have, or have not, experienced regular non-parental child care show differences in peer relationship skills at school entry. Pierson, Bronson, Dromey, Swartz, Tivnan and Walker (1983) report that children who had been in a centre-based program as preschoolers spent more time in cooperative play with peers, and made more use of cooperative strategies with them, than did children who were cared for exclusively at home prior to starting school. These results were obtained in both the fall and spring of the year the children entered kindergarten. In this study, it is not possible to be certain that the positive effect on peer relationships found among the children with prior group experience reflects only the influence of that experience. The parents of these children received parent education through in-home visits and group meetings up to the time the children were age two and started attending a child care program. The parents of the control children did not.

Five of the studies report no significant between-group differences. In Canada, Jacobs, Selig and White (1992) found no difference in grade one teacher ratings of consideration or hostility towards peers. Three American studies report finding no significant between-group difference in aggression towards peers and other aspects of peer social skills among kindergarten children (Hegland & Rix, 1990; Raph, Thomas, Chess & Korn, 1968; Thornburg, Pearl, Crompton & Ispa, 1990). Cochran and Gunnarsson (1985) report the same findings for a study conducted with five-year-old Swedish children. Raph et al. found that kindergarten children with two years of preschool child care experience (the maximum amount among the children) tended to have fewer negative interactions with their classmates than did children with no regular out-of-home child care experience prior to kindergarten. This tendency was not observed in children with only one year of child care experience. Hegland and Rix report that kindergarten children who had attended child care centres were observed to have fewer incidents of aggression than children without regular non-parental child care prior to age five.

### *c) Conclusions*

The evidence does not support the notion that there is an association between higher levels of aggression towards peers in kindergarten or grade one and regular non-parental child care prior to school entry. Indeed, several studies suggest that there appears to be *less* likelihood of aggression by children who have had regular child care experience during their preschool period (Pierson et al., 1983; Hegland & Rix, 1990; Raph et al., 1968). Only one study found an association with higher rates of aggression in children that had experienced regular non-parental child care before school age; these children had attended a specific cognitively-oriented child care centre (Haskins, 1985).

It seems reasonable that children with good peer social skills are less likely to be aggressive because they have learned how to use non-aggressive strategies to get what they want. Zigler and Ennis (1989) observe that the opportunity to interact on a regular basis with children of the same age is not only desirable, it is necessary for normal social development. They note that children who do

not play with age-mates on a regular basis as preschoolers miss important social learning experiences.

### **Classroom skills**

#### *a) The importance of classroom skills*

A child who can follow directions, resist distractions, and take turns with other children already has the skills expected by the school situation. If, in addition, the child actively involves him or herself in classroom activities, the child is in a better position to take advantage of the developmental opportunities offered than is a child who holds back. Behaviours other than peer relationship skills that have a direct impact on classroom functioning, such as those cited above, can be thought of as classroom skills.

#### *b) Research findings*

Studies comparing children with and without child care experience prior to school entry report that, in their first year in school, children with child care experience:

- are rated by their teachers as having lower anxiety levels (Andersson, 1989; Cryan, Sheehan, Wiechel & Bandy-Hedden, 1992);
- involve themselves more in classroom activities (Cryan et al., 1992; Jacobs & White, 1994);
- are more able to work independently (Andersson, 1989; Cryan et al., 1992);
- tend to have better skills in planning and organizing tasks, better ability to remain focused on a task, and are more likely to complete tasks (Pierson, Bronson, Dromey, Swartz, Tivnan & Walker, 1983); and
- are perceived by teachers as having had an easier transition to school (Andersson, 1989).

Two studies report finding no between-group differences. In Sweden, Cochran and Gunnarsson (1985) report that the rates of compliance over a sixty-minute observation period were very similar for children who had or had not participated in child care prior to school entry. Moore, Snow, and Poteat (1988) found no differences in group mean scores on a standard measure of classroom adaptive behaviour that included an examination of the children's compliance with adult requests.

Two American studies report an apparently negative impact on classroom skills in kindergarten as a result of extensive non-parental child care prior to school entry. Thornburg, Pearly, Crompton and Ispa (1990) found that children who had received non-parental child care were rated by their teachers as less compliant with adults than children who had been solely reared at home. Raph, Thomas, Chess and Korn (1968) report an association between length of time in non-parental child care and negative interactions with the teacher, for example, being argumentative or non-compliant.

The four studies reporting a negative impact or no between-group differences did not assess the quality of care. Canadian researchers Jacobs and White (1994) report that when their statistical analysis simply compared children with and without child care experience, there was no between-group difference in the children's cooperation with teachers or in defiance. However, when the sample was split and the findings were again analyzed on the basis of participation in: a) high

quality child care; b) low quality child care; and c) no child care experience, the children who had been in poor quality child care were rated as more defiant than those in the other two groups. This result illustrates why merely comparing children with and without regular non-parental child care,

without considering the quality of care, is not adequate to address the question of the impact of non-parental child care. The relevance of quality is addressed in Chapter VI.

*c) Conclusions*

The research indicates that preschool child care experience can help the child develop a variety of social competencies that enable him or her to quickly become involved in and take advantage of the developmental opportunities presented in kindergarten and grade one. In particular, child care experience appears to be associated with greater willingness to become involved in classroom activities, better ability to resist distraction and to remain focused on a task, and greater independence. However, as illustrated by the work of Jacobs and White (1994), the benefits of child care experience may not occur if the program is of poor quality. Indeed, if the program is of poor quality, the impact of the child care experience may be negative.

Table I

**Comparison of peer relationship skills at the time of transition to school between children with and without regular participation in non-parental child care prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Pierson, Bronson, Dromey, Swartz, Tivnan & Walker, 1983 <sup>†</sup>	132 kindergarten children with previous full-time child care experience, 366 comparison children	Six 10-minute observations in the Fall and again in the Spring using the <i>Executive Skills Profile</i> (Bronson, 1982)	Children with prior child care experience spent more time in cooperative play with peers and made more use of cooperative strategies with peers
No between-group differences	Cochran & Gunnarsson, 1985	34 five-year-olds with prior regular child care experience, 34 comparison children	A standard scale consisting of eight social activity categories developed and pretested for the Swedish Childrearing Study	No difference in the amount of aggression shown by the two groups of children
No between-group differences	Hegland & Rix, 1990	16 kindergarten children with prior child care experience, 16 comparison children	The frequency of different behaviours exhibited during four separate 30-minute observations using a standard checklist	No statistically significant difference in the amount of aggression shown by the two groups. However, children with prior group experience tended to have fewer aggressive episodes
No between- group differences	Jacobs, Selig & White, 1992	27 grade one children with regular centre-based experience prior to school entry, 24 comparison children	The <i>Classroom Behavior Inventory</i> (Schaefer, Edgerton & Aaronson, 1978)	No differences in any of the measured behaviours between the two groups of children, including no difference in aggression toward peers
No between-group differences	Raph, Thomas, Chess & Korn, 1968	83 kindergarten children with prior full-time child care experience, 14 comparison children	One hour-long classroom observation to count each incidence of cooperation, agreeing, being destructive, or being aggressive to peers	No differences in any of the rated behaviours between the two groups of children, including no difference in aggression towards peers. Children with two years of preschool child care experience tended to have fewer negative interactions with peers than children with only one year or no child care experience prior to school entry
No between-group differences	Thornburg, Pearl, Crompton & Ispa, 1990	534 kindergarten children with regular non-parental child care prior to school entry, 206 comparison children	Teacher ratings of the child's aggressiveness, frequency of interactions with peers, and quality of interactions with peers	No difference in any of the behaviours being rated between the two groups of children, including no difference in aggression towards peers
Negative	Haskins, 1985	27 grade one children from a specific child care program. Thirty-two comparison children, 28 of whom had been enrolled in other child care centres while four had no prior child care experience	Teacher ratings of the child's level and type of aggressive behaviour towards peers	Children from the specific program were rated as more aggressive than were comparison children enrolled in other centres for a similar or shorter period of time or children without child care experience prior to school entry

<sup>†</sup> The parents of the children with previous child care experience had received parent education while the parents of the other children had not.

Table II

**Comparison of classroom skills in kindergarten or grade one between children with or without regular non-parental child care prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Andersson, 1989	69 children in their first year of school who had prior child care experience, 31 comparison children	Teacher rating of how closely each of 52 behavior descriptions fit a particular child	Children entering child care before age one were rated as more persistent and independent, more assertive (in a positive sense), less anxious, and as having had an easier transition to school than children who began child care later. School adjustment and skills were rated lowest for children without prior child care experience
Positive	Cryan, Sheehan, Wiechel & Bandy-Hedden, 1992	1,230 kindergarten children with regular centre-based care experience prior to school entry, 940 comparison children	<i>Hahnemann Elementary School Behavior Rating Scale</i> (Spivak & Swift, 1975)	On the majority of the 14 items on the Scale, children with preschool centre-based child care experience were rated more positively. The differences are statistically significant in favour of this group for originality, ability to learn independently, and extent of involvement in classroom activities
Positive	Jacobs & White, 1994	36 kindergarten children who had attended child care centres, 32 comparison children	<i>The Social Competence Scale</i> (Kohn, Parnes & Rosman, 1976)	Children with child care experience were rated as more interested and involved in classroom activities
Positive	Pierson, Bronson, Dromey, Swartz, Tivnan & Walker, 1983	132 kindergarten children with previous child care experience, 366 comparison children	Six 10-minute observations in the Fall and again in the Spring using the <i>Executive Skills Profile</i> (Bronson, 1982)	At both times of year, children with prior child care experience had better skills in planning and organizing their activities, were better able to resist distraction, and successfully completed tasks more frequently
No between-group differences	Cochran & Gunnarsson, 1985	34 five-year-olds with prior regular child care experience, 34 comparison children	A standard scale consisting of eight social activity categories developed and pretested for the Swedish Childrearing Study	No between-group differences on compliance with adults, cooperation, or attention seeking
No between-group differences	Moore, Snow & Poteat, 1988	59 kindergarten children with prior child care experience, 31 comparison children	The classroom edition of the <i>Vineland Adaptive Behavior Scale</i> (Sparrow, Balla & Cicchetti, 1984)	No between-group differences in measures of adaptive behaviour, including compliance with adult requests, motor skills, and self-help skills
Negative	Raph, Thomas, Chess & Korn, 1968	83 kindergarten children with prior full-time child care experience, 14 comparison children	One hour-long classroom observation	There was a direct association between length of child care experience prior to kindergarten and the extent to which the children were argumentative or non-compliant with the teacher
Negative	Thornburg, Pearl, Crompton & Ispa, 1990	534 kindergarten children with regular non-parental child care prior to school entry, 206 comparison children	Teacher ratings of the child's level of compliance with adults	Children with regular non-parental child care prior to school entry were rated as less compliant with adults

## CHAPTER IV - THE TRANSITION TO ELEMENTARY SCHOOL: COGNITIVE FUNCTIONING, LANGUAGE SKILLS, AND ACADEMIC READINESS

### Introduction

Considerable research has shown that the mother's level of education predicts the level of the child's language skills (Goelman & Pence, 1987; Melhuish, Lloyd, Martin & Mooney, 1990; McCartney, 1984; Mott, 1991; Wadsworth, 1986). Higher family socio-economic status has been shown to predict higher levels of cognitive functioning (Kontos, 1991; Osborn & Milbank, 1987; Scarr, Lande & McCartney, 1989; Thornburg, Pearl, Crompton & Ispa, 1990). Therefore, studies exploring the effect of non-parental child care must address the issue of family socio-economic status and maternal educational level. All the studies related to cognitive functioning or language skills discussed in this paper either compared groups that did not differ significantly on these background variables, or the researchers identified and controlled for differences through statistical procedures.

A summary table giving the findings, sample sizes, and the measurement tools used for studies examining the effect of regular non-parental child care prior to school entry on cognitive functioning, language skills, and academic readiness appears on pages 21, 23, and 25 respectively.

### Cognitive functioning

#### *a) The importance of cognitive functioning*

The term 'cognitive functioning' refers to skills such as the ability to perceive and understand differences and similarities between groups of objects, the ability to understand basic concepts such as counting, and the ability to remember and recite back information such as a home address. Not surprisingly, there is considerable research indicating that cognitive functioning level prior to school entry predicts success in school (for example, Hess, Holloway, Dickenson & Price, 1984; Ladd, 1990; Reynolds, 1989; Tizard, Blatchford, Burke, Farquhar & Plewis, 1988).

#### *b) Research findings*

Five of the studies reviewed in this paper have investigated whether there are differences in cognitive functioning at school entry between children who have or have not experienced extensive non-parental child care. Three found significantly higher levels of cognitive functioning among children with child care experience prior to school entry. The two other studies report no between-group difference. No studies were found that report poorer performance on measures of cognitive functioning at the time of school entry for children with previous regular experience of non-parental child care.

Osborn and Milbank (1987) surveyed all the children born in Britain between April 5 and 11, 1970, when the children were age five (the usual age for school entry) and again at age ten. They were able to obtain and verify data on the child's regular care arrangement prior to age five for 8,952 children, 5,413 of whom had experienced some type of regular centre-based preschool program. After controlling for socio-economic status (including mother's level of education), Osborn and Milbank found that the children who had participated in child care had scores above the average for the whole sample on a standard test of general cognitive level and on a test of ability to recognize the principles governing different geometric shapes. They concluded that regular participation in a preschool child care program has a positive effect on cognitive development for children from all socio-economic backgrounds.

Two smaller studies have been conducted in the United States. Gullo and Burton (1992) report that children who had experienced child care programs prior to school entry obtained significantly higher scores on a test to measure general cognitive abilities at the end of kindergarten. However, Winnett, Fuchs, Moffatt and Nerviano (1977) found no between-group difference in their two groups of four- and five-year-olds on a standard measure of overall cognitive functioning.

A Swedish study reports that children who had received regular non-parental child care prior to school entry performed better on cognitive reasoning, perception of similarities and differences, and understanding of various concepts and situations at the end of first grade than did children without this experience (Andersson, 1989). Furthermore, children who had extensive non-parental child care in infancy performed better than those with later entry. A second Swedish study found no between-group difference on a standard intelligence test among children age five-and-a-half (Cochran & Gunnarsson, 1985).

### *c) Conclusions*

Studies reporting higher levels of cognitive functioning for children who had regular non-parental child care prior to school entry all involve child care provided to a group of children (either centre-based or family day care) (Andersson, 1989; Osborn & Milbank, 1987; Gullo & Burton, 1992). This suggests that child care involving other children may speed up the child's acquisition of cognitive skills, for example, by encouraging joint problem solving. The research findings do not imply an increase in the child's innate intelligence quotient (I.Q.). Analysis of the 'wiring' of the human brain (the type and strength of neural connections) at different developmental periods indicates that the infant's initial intellectual ability is genetically determined. However, development of more mature cognitive skills, such as the ability to manipulate abstract symbols (as is required for reading), depends upon adequate visual, auditory, tactile, and other forms of stimulation (Keating & Mustard, 1993). Thus, both innate ability and later experience have an impact.

Table III

**Comparison of cognitive functioning at the time of transition into school between children with and without prior non-parental child care experience**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Andersson, 1989	69 children in their first year of school who had prior child care experience, 31 comparison children	Two subtests from a Swedish group test of cognitive functioning and a verbal subtest from the Swedish version of the <i>WISC</i> (Weschler, 1979)	Children entering child care before age one performed better on tests of cognitive reasoning and understanding of various concepts than children with later enrollment or no child care experience prior to school entry
Positive	Gullo & Burton, 1992	1,338 kindergarten children with prior full-time centre-based care experience, 3,201 comparison children	<i>Metropolitan Readiness Test</i> , Level II, Form P (Nurss & McGauvran, 1974)	Children with prior centre-based care experience obtained higher scores on all subtests, including understanding of mathematical concepts
Positive	Osborn & Milbank, 1987	5,413 five-year-olds with prior child care experience, 3,539 comparison children	<i>Copy Designs Test</i> and the <i>English Picture Vocabulary Test</i> <sup>†</sup>	Children with prior child care experience obtained higher than the average score for the whole sample on ability to recognize the principles governing geometric shapes and overall cognitive functioning
No between-group differences	Cochran & Gunnarsson, 1985	34 five-year-olds with prior regular centre care experience, 34 comparison children	<i>Griffiths Mental Development Scale</i> (Griffiths, 1970)	No significant between-group differences on any subtest
No between-group differences	Winett, Fuchs, Moffatt & Nerviano, 1977	60 four- and five-year-olds with prior regular non-parental child care, 43 comparison children	Ten subtests from the revised <i>Illinois Test of Psycholinguistic Abilities</i> (Paraskevopoulos & Kirk, 1969) and the whole <i>Peabody Picture Vocabulary Test</i>	No significant differences in performance on any test between children with or without prior regular non-parental child care

†This is an adaptation of the *Peabody Picture Vocabulary Test* (Dunn & Dunn, 1981) which measures the child's ability to understand and use language, and cognitive skills such as reasoning. The *Peabody* is used by some researchers as a test of cognitive functioning and by others as a test of language skills.

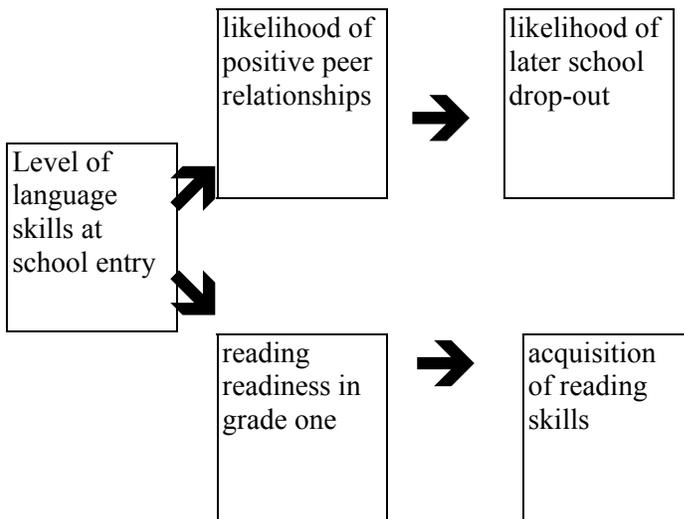


## Language skills

### a) *The importance of language skills*

Children with good language skills are more successful in gaining entry into peer groups and maintaining their inclusion once entry has been accomplished than are children with poor language skills (Betsalel-Presser, Jacobs, White & Baillargeon, 1989). Research in Canada and the United States has found that the child's oral language level in kindergarten accounts for between 30% and 40% of the child's later reading performance (Berninger, Proctor, deBruyn & Smith, 1988; Biemiller & Siegel, 1991; DeHirsh, Jansky & Langford, 1966).

The relationships discussed above can be illustrated as follows:



### b) *Research findings*

Only two studies examining the effect of regular non-parental child care on later verbal skills take family socio-economic status into account.<sup>2</sup>

In Sweden, Andersson (1989) measured the extent of children's vocabulary at grade one and found that children who had received regular non-parental child care prior to school entry performed better than those who had not. Children who had entered child care as infants or toddlers did better than children who entered child care later in life.

Jacobs, Selig and White (1992) found no differences in children who had or had not been enrolled in child care centres prior to kindergarten. However, children from high quality centres had greater ability to understand and use language than children from poor quality centres.

Table IV

**Comparison of language skills in kindergarten or grade one between children with or without non-parental care experience prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Andersson, 1989	69 children in their first year of school who had prior child care experience, 31 comparison children	Verbal subtest of the Swedish version of the <i>WISC</i> (Weschler, 1979)	Children enrolled in child care prior to age one had larger vocabularies than those enrolled later or without group experience prior to school entry
Mixed findings	Jacobs, Selig & White, 1992	27 kindergarten children with prior child care experience, 32 comparison children	<i>Peabody Picture Vocabulary Test, Revised, Form M</i> (Dunn & Dunn, 1981)	No difference between children enrolled or not enrolled in child care centres prior to kindergarten. However, children from high quality centres had greater ability to understand and use language than children from poor quality centres. There was no significant difference between children without prior centre-based child care experience and children from high quality child care centres

*c) Conclusions*

Sweden is often regarded as offering "the highest quality of out-of-home care available anywhere. Standards concerning group size, staff-child ratios, and caregiver qualifications are rigorously set and enforced and are based on extensive research" (Kamerman, 1993, p. 249).

The findings reported by Andersson from Sweden, and the findings related to high quality child care reported by Jacobs et al., indicate that high quality child care has beneficial effects on children's development of language skills. This may reflect the opportunities to hear and use language provided by such care.

**Academic readiness and functioning**

*a) Research findings*

Five studies from the United States and one from Sweden report a positive association between child care experience prior to school entry and children's academic readiness in kindergarten or

academic functioning in grade one. Two American studies report no between-group difference. However, in both these studies, factors other than whether the child experienced regular non-parental child care prior to school entry may have contributed to the findings. No studies report an association between poorer academic readiness or functioning and having received regular non-parental child care during the preschool years.

Studies with positive findings report that in the first year of school, children with prior child care experience:

- obtain higher scores on standard tests of reading readiness (Caughy, DiPietro & Strobino, 1994; Gullo & Burton, 1992; Pierson, Bronson, Dromey, Swartz, Tivnan & Walker, 1983);
- have a better understanding of mathematical concepts (Caughy et al., 1994; Gullo & Burton, 1992);
- perform, on average, ten percentile points higher on every subtest of the *Metropolitan Reading Tests* (Sheehan, Cryan, Wiechel & Bandy, 1991); and
- are rated by their elementary school teachers as performing better in all school subjects (Andersson, 1989).

Two American studies report no between-group difference (Thornburg, Pearl, Crompton, & Ispa, 1990; Winnett, Fuchs, Moffatt & Nerviano, 1977). The findings may reflect factors other than participation of non-parental child care per se. It should be noted that:

- in both studies, the non-parental child care included what the researchers refer to as "sitters". It is likely that these people did not have education in child development. In addition, there is no indication of whether sitter care involved other children (that is, whether it was a group situation). In contrast, four of the five studies reporting a positive impact on academic readiness or functioning involved child care with staff who had training in early childhood education; and
- the report by Winnett et al. indicates that some of the children had been in child care centres. The researchers report a wide variation in these centres in the number of children per staff person, observed staff-child interactions, and the availability of equipment. This indicates a wide variation in quality. Jacobs et al. (1992) initially found no between-group difference in kindergarten language skills between children who had or had not received regular non-parental child care prior to school entry. However, an analysis based on ranking of the child care centres as having high or low quality revealed a direct association between centre quality and children's language skills. It is possible that a similar dynamic may have been at work in the Winnett et al. study.

#### *b) Conclusion*

The above studies indicate that child care experience prior to school entry is often associated with better preparation for coping with the school's 'academic' expectations. This may reflect the impact of prior exposure to 'pre-academic' activities such as sorting by shape or colour. Or it may simply reflect the fact that, for preschool children, play activities provide opportunities for learning. No studies report that regular non-parental child care prior to school entry hinders the development of academic readiness.

Table V

**Comparison of academic readiness and functioning in kindergarten or grade one between children with or without non-parental child care experience prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Andersson, 1989	69 children in their first year of school who had prior child care experience, 31 comparison children	Teacher rating of school performance in reading, writing, arithmetic, music, physical education, and "general subjects" <sup>†</sup>	Children with prior child care experience were rated higher on all subjects. Those who had entered child care prior to age one were rated higher than children entering child care later or without child care experience prior to school entry
Positive	Caughy, DiPietro & Strobino, 1994	649 five- and six-year-olds with prior regular non-parental child care, 218 comparison children	<i>Peabody Individual Achievement Test</i> to assess academic readiness in reading, spelling, mathematics and general information	Regular non-parental child care during the second year of life was associated with higher reading recognition scores. Such care at age three was associated with higher scores in both reading and understanding of mathematical concepts
Positive	Gullo & Burton, 1992	1,338 kindergarten children with prior full-time centre-based child care experience, 3,201 comparison children	The <i>Metropolitan Readiness Tests</i> (Nurss & McGauvran, 1974)	Children with prior centre-based child care experience obtained higher scores on all four tests (listening skills, ability to match sounds with letters, ability to match letters and patterns, understanding of basic mathematical concepts)
Positive	Sheehan, Cryan, Wiechel & Bandy, 1991	1,230 kindergarten children with regular centre-based child care experience prior to school entry, 940 comparison children <sup>‡</sup>	The <i>Metropolitan Readiness Tests</i> (Nurss & McGauvran, 1974)	Children with regular centre-based child care experience in the year prior to kindergarten performed, on average, 10 percentile points better on every subtest
Mixed findings	Pierson, Bronson, Dromey, Swartz, Tivnan & Walker, 1983	132 kindergarten children with previous child care experience, 366 comparison children	Teacher rating of classroom work skills, motor skills, and understanding of numerical concepts, once in the Fall just after starting kindergarten and once in the following Spring	In the Fall, children with prior child care experience were rated as significantly better in reading readiness and as tending to be better in overall kindergarten skills. However, they were rated as having more problems with work skills. In the following Spring, the comparison children were rated as having better work skills and tended to be rated as having better reading readiness. There were no between-group differences in any other areas
No between-group differences	Thornburg, Pearl, Crompton & Ispa, 1990	534 kindergarten children with regular non-parental child care prior to school entry, 206 comparison children	<i>Missouri Kindergarten Inventory of Developmental Skills</i> (Ferguson & Carlson, 1978)	No significant between-group differences on any of the subtests (understanding number concepts, auditory skills, pencil and paper skills, visual skills)
No between-group differences	Winnett, Fuchs, Moffatt & Nerviano, 1977	60 four- and five-year-olds with prior regular non-parental child care, 43 comparison children	<i>The Preschool Screener</i> (Winnett, Moffatt, Fuchs & McFarland, 1975)	No significant between-group difference on any of the 15 items

<sup>†</sup> Note that children in Sweden enter the formal school system at age seven.

‡ Sample numbers obtained from a companion article on the same study (Cryan, Sheehan, Wiechel & Bandy-Hedden, 1992).



## CHAPTER V - EFFECTS BEYOND GRADE ONE

### Introduction

Long-term positive effects from regular non-parental child care prior to school entry are reported by four research studies from the United States and four from Europe. One Swedish study reports no between-group differences. Seven of the eight studies reporting a positive outcome clearly indicate that the child care providers had some training in child development.

One study found negative effects from preschool non-parental child care (Vandell & Corasaniti, 1990). The researchers speculate that these findings may reflect the impact of licensing requirements in the state in which the study was conducted. They permitted untrained staff and more children per staff member than is permitted in any part of Canada (Childcare Resource and Research Unit, 1994), or reported in any other study where this type of information is provided.

Consistent with the previous two chapters, the material in this chapter is discussed in the following sections: peer relationship skills, classroom skills, cognitive functioning, language skills, and academic functioning. A summary table is provided after each section.

### Peer relationship skills

#### *a) Research findings*

Andersson (1992), in Sweden, asked teachers to compare 13-year-old children who had participated in regular child care prior to school entry with classmates who had not. The children with early child care experience were rated as more popular with other children and as less reserved. A second Swedish study reports no difference in peer relationship skills among grade two children with or without child care experience during the preschool period (Broberg, Hwang & Chace, 1993).

Three American studies examined the association between regular child care experience prior to entering school and later peer relationship skills. Pierson, Walker and Tivnan (1984) report that grade two children who had attended child care were ranked as having better peer relationship skills based on six different classroom observations by trained research assistants.

A second study, also involving classroom observations by trained research assistants, found that six-to-12-year-old middle-class African-American children who had attended a child care centre or another type of early childhood service were rated more positively on a variety of peer relationship behaviours such as friendliness, cooperation, and sensitivity towards others, than same-age middle-class African-American children without centre-based child care experience during their preschool years. There was no significant between-group difference found in this study for white children from families with a similar socio-economic status (Burchinal, Ramey, Reid & Jaccard, 1995).

In contrast, Vandell and Corasaniti (1990), in Texas, compared two groups of eight-year-olds; one group had been enrolled in child care centres as infants and the other group had significantly less child care experience or had been at home with their mothers prior to starting formal schooling. Teachers ranked the children with extensive child care experience as having poorer social skills and poorer relationships with classmates than children with no or less child care experience. In addition, children with extensive child care experience as infants received a larger number of

negative nominations from classmates on classroom sociometric ratings.<sup>3</sup> Statistical analysis that took family

and child characteristics into account showed that the extent of child care experience was the best single predictor of teachers' ratings and classroom sociometric nominations.

*b) Conclusions*

Vandell and Corasaniti (1990) hypothesize that the differences in their findings and those of Andersson (1989) reflect significant differences in the quality of the child care received by the children. At the time the Vandell and Corasaniti (1990) study was conducted, Texas required no pre-service training for people working in child care centres and allowed staff-to-child ratios of 1:6 for infants and 1:18 for four-year-olds. In contrast, in Sweden, child care centre staff had a minimum of two-years post-secondary school training. The staff-to-child ratio was 1:4 for children up to age two and 1:5 for children age three to seven (Andersson, 1989).

Support for the Vandell and Corasaniti hypothesis also comes from the American study reporting positive results for middle-class ethnic minority and white children (Pierson et al., 1984). The child care attended by the children involved staff with training in early childhood education and the provision of developmental programming. There is no estimate or way of estimating the quality of non-parental child care in the other American study (Burchinal et al., 1995).

Table VI

**Comparison of peer relationship skills subsequent to grade one between children with or without group experience prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Andersson, 1992	100 thirteen-year-olds, "about two-thirds" of whom experienced regular group care prior to school entry	Teacher's rating of how closely each of 85 behaviour descriptions fit a particular child	Peer relationship skills were rated highest for children who were enrolled in group child care prior to age one and lowest for those without group experience prior to school entry
Positive	Pierson, Walker & Tivnan, 1984	169 second grade children with preschool group experience, 169 comparison children	Six different classroom observations using the <i>Executive Skills Profile</i> (Bronson, 1982)	Children with preschool group experience were rated as having good peer relationship skills twice as often as comparison children
Mixed	Burchinal, Ramey, Reid & Jaccard, 1995	333 six-to-twelve-year-olds, "about 45%" had parental care as their primary form of care prior to school entry	Three five-hour observations by a trained research assistant	African-American children who had experienced regular non-parental child care prior to school entry were rated more positively on peer relationship behaviours than African-American children without regular non-parental child care prior to school entry. There was no between-group difference for white children
Negative	Vandell & Corasaniti, 1990	199 eight-year-olds with varying lengths of child care experience, 37 comparison children	a) Teacher ratings using a standard scale; b) conduct grades on report cards; c) peer ratings	There was a direct association between the length of child care experience and the extent of both the teachers's rating of the child as having poor peer relationship skills and peer negative rating of the child

**Note:** Neither Andersson (1992) nor Burchinal et al. (1995) provide an exact number for the children in their study with or without regular non-parental child care prior to school entry. Instead, they use the phrases provided in quotation marks in the above table.

## **Classroom skills**

### *a) Research findings*

Two Swedish studies (Andersson, 1992; Broberg, Hwang & Chace, 1993) and two American studies (Pierson, Walker & Tivnan, 1984; Vandell & Corasaniti, 1990) have explored the effect of early child care experience on children's classroom skills after they entered grade one. Andersson reports that teachers rated 13-year-olds with child care experience as being more creative, more self-confident in group situations, more independent, and better able to express themselves than peers without such experience. However, Broberg et al. (1993), also in Sweden, found no inter-group difference when teachers rated their sample on similar classroom skills.

Pierson, Walker and Tivnan (1984) used trained observers to compare grade two children on their ability to follow directions, to resist distractions, to complete work successfully, and to participate in classroom activities. Fourteen percent of the 169 children with child care experience were rated as having difficulties with one or more of these skills in contrast to 28% of the 169 matched control children without child care experience.

In contrast, the second American study reports that teachers rated eight-year-olds with child care centre experience as having significantly poorer ability to concentrate on tasks, to persist with a task even if having difficulty, and to organize themselves, and as more difficult to discipline (Vandell & Corasaniti, 1990). The longer the child had been in child care prior to school entry, the more negative the teacher's rating. This is the same study discussed earlier that reports an association between preschool child care experience and lower ratings on peer relationships skills.

### *b) Conclusions*

It can be hypothesized that the different findings of the two American studies reflect the difference in the quality of the child care experience. Staff at the child care centres in the Vandell and Corasaniti study were not required to have any pre-service education and the permitted number of preschool-age children per staff person was 1:18. In the Pierson et al. study, staff-to-child ratios ranged from 1:5 to 1:6 for three- and four-year-olds. Furthermore, the staff had post-secondary school training in child development and were expected to provide a stimulating program to enhance children's social and cognitive skills. As will be discussed in the following chapter, research has consistently demonstrated an association between enhanced child development and both caregiver training and a small number of children per adult.

Table VII

**Comparison of classroom skills subsequent to grade one between children with or without non-parental child care experience prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Andersson, 1992	100 thirteen-year-olds, "about two-thirds" of whom experienced regular child care prior to school entry†	Teacher ratings using a standard questionnaire	Children entering child care prior to age one were rated as more creative, more confident in participating in classroom activities, and more independent than those with later entry or no group experience prior to starting school
Positive	Pierson, Walker & Tivnan, 1984	169 second grade children with preschool group experience, 169 comparison children	Six different classroom observations using the <i>Executive Skills Profile</i> (Bronson, 1982)	Children with preschool group experience were rated as significantly more involved in classroom activities and better able to work independently, follow directions, resist distractions, and complete work successfully
No between-group difference	Broberg, Hwang & Chace, 1993	90 grade two children with preschool group experience, 55 comparison children	Teacher ratings using a standard scale with six subscales	No difference in rating for confidence in participating in classroom activities, independence, persistence in working on a task, or ability to resist distractions
Negative	Vandell & Corasaniti, 1990‡	199 eight-year-olds with varying lengths of child care experience, 37 comparison children without child care experience	a) Teacher ratings using a standard scale, b) conduct grades on report cards	There was a direct association between the length of child care experience and the extent to which the child was rated as having poor work skills (e.g. easily distracted) and as being hard to discipline

† Andersson (1992) does not provide an exact number of the children in his study with or without child care experience. Instead, he uses the phrase provided in quotation marks in the above table.

‡ This is the same study as the only study reporting negative findings in Table VI.

## Cognitive functioning

### *a) Research findings*

In the longitudinal study of all the children born in Britain between April 5 and 11, 1970, (Osborn & Milbank, 1987), 4,863 had participated in some type of regular centre-based early childhood program prior to school entry and 3,380 had not. A significant difference was found between the two groups of children on four standard tests which, together, measure overall cognitive functioning. When the impact of socio-economic status and maternal educational level was controlled, the children who had participated in regular child care programs during their preschool years were found to perform better on every test.

Burchinal, Ramey, Reid and Jaccard (1995) report a statistically significant association between experience of regular non-parental child care during the preschool years and better performance for both white and African-American child on the *WISC - revised*, and for African-American children only on the *Peabody Picture Vocabulary Test*. The subject selection process for this study was intended to ensure that family socio-economic status would be very similar for both groups of children. However, after the data analysis was complete, the researchers found that the mean parental intelligence as measured by a standard test, and the mean educational level, were somewhat higher for the parents of children who had attended a child care centre or other early childhood program. As a result, it is not possible to feel confident that the findings of this study related to the children's cognitive functioning solely reflect the long-term effect of child care experience prior to school entry. As noted in the previous chapter, family socio-economic status and maternal educational levels have been found to be related to children's language skills and cognitive functioning levels.

### *b) Conclusions*

Findings such as those reported by Osborn and Milbank do not imply an increase in the child's innate intellectual quotient (I.Q.). As noted earlier, research indicates that the infant's initial intellectual ability is genetically determined. However, the findings do indicate that a stimulating child care experience with a group of children prior to school entry may speed up the child's acquisition of cognitive as well as social skills. This, in turn, could be expected to assist the child to take full advantage of the learning opportunities presented in the classroom.

Table VIII

**Comparison of cognitive functioning subsequent to grade one between children with or without non-parental child care experience prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Osborn & Milbank, 1987	4,863 ten-year-olds with preschool child care experience, 3,380 comparison children	The word definition, recall of digits, similarities, and matrices subscales of the <i>British Ability Scales</i> (Elliott, Murray & Pearson, 1979)	Children with preschool child care experience performed significantly better on all four subscales
Positive	Burchinal, Ramey, Reid & Jaccard, 1995 <sup>†</sup>	333 six-to-twelve-year-olds, "about 45%" of whom had parental care as their primary form of care prior to school entry	<i>Wechsler Intelligence Scale for Children</i> (Wechsler, 1979) and the <i>Peabody Picture Vocabulary Test</i> (Dunn & Dunn, 1981)	There was a statistically significant association between regular non-parental child care prior to school entry and higher cognitive functioning as measured by the <i>WISC</i> for all children and as measured by the <i>Peabody</i> for African-American children

<sup>†</sup> Burchinal et al. (1995) do not provide an exact number for the children in their study with or without regular non-parental child care prior to school entry. Instead, they use the phrase provided in quotation marks in the above table.

## Language skills

### a) Research findings

This paper includes two studies that have examined the association between attendance in a preschool child care program prior to school entry and children's language skills subsequent to the first grade.<sup>4</sup> Osborn and Milbank (1987) asked teachers to rate ten-year-old children on a variety of expressive language skills, including complexity of vocabulary and ability to organize their thoughts. The children were also given a standard test to measure listening skills. With the effect of socio-economic status and maternal education controlled, the children who had participated in an early childhood program obtained significantly higher scores on all aspects of expressive language rated by the teachers and obtained higher scores on the listening skills test.

Andersson (1992), from Sweden, reports that teachers rated thirteen-year-olds with child care experience as having larger vocabularies and better ability to express themselves than age-mates without this experience.

Table IX

**Comparison of language skills subsequent to grade one between children with or without non-parental child care experience prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Andersson, 1992	100 thirteen-year-olds, "about two-thirds" of whom experienced regular child care prior to school entry <sup>†</sup>	Teacher ratings using a standard questionnaire	Children enrolled in child care prior to age one were rated as having larger vocabularies and better ability to express themselves than those enrolled later. Children with child care experience were rated better than those without such experience
Positive	Osborn & Milbank, 1987	4,863 ten-year-olds with preschool child care experience, 3,380 comparison children	Teacher ratings and a standard test of listening skills	Children with preschool child care experience were rated as having larger vocabularies and better ability to organize their thoughts. They also performed better on the test of listening skills

<sup>†</sup> Andersson (1992) does not provide an exact number for the children in his study with or without child care experience. Instead, he uses the phrase provided in quotation marks in the above table.

*b) Conclusion*

The two studies indicate that preschool child care experience can have a long-term beneficial effect on children's language skills.

## Academic functioning

*a) Research findings*

Eight studies reviewed for this paper report an association between regular child care experience prior to school entry and better academic functioning subsequent to grade one. The Vandell & Corasaniti (1990) study is the only research that reports poorer academic functioning among children with extensive non-parental child care during their preschool years. This found an association between the amount of non-parental child care prior to school entry received by eight-year-olds in Texas, and the extent of low academic grades on report cards from grades one, two and three. The Vandell and Corasaniti study is the same study mentioned earlier in this chapter where there is reason to believe that the child care received by the subject children was of very poor quality.

The studies that found a positive effect subsequent to grade one report that children with regular child care experience prior to starting school:

- perform better on standard school achievement tests in reading (Larson & Robinson, 1989; Osborn & Milbank, 1987; Sheehan, Cryan, Wiechel & Bandy, 1991; Wadsworth, 1986),

and in both mathematics and language skills (Larson & Robinson, 1989; Osborn & Milbank, 1987; Sheehan et al, 1991);

- obtain higher ratings from their current teachers in all subjects (Andersson, 1992) and in reading (Pierson, Walker & Tivnan, 1984); and
- are significantly less likely to be retained a grade (Ministère de l'Éducation Nationale, 1983; Tietze, 1987; Sheehan et al., 1991).

*b) Conclusions*

All the studies discussed in this section involved child care in the infant and/or preschool years. The fact that eight of them reported an association between child care and better academic functioning subsequent to grade one indicates that child care can be beneficial. This may reflect a continued benefit from having entered school with higher language and academic readiness skills. The only study reporting a negative outcome (Vandell & Corasaniti, 1990) involved centres in a state with very low requirements for licensing. One would assume that these low requirements probably translate into poor quality care.

Table X

**Comparison of academic functioning subsequent to grade one between children with or without non-parental child care experience prior to school entry**

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Andersson, 1990, 1992	100 thirteen-year-olds, "about two-thirds" of whom experienced regular child care prior to school entry	Teacher ratings of the child's capabilities in Swedish, English, mathematics, and 'general subjects'	Children who entered child care prior to age one were rated as having higher capabilities in all subjects than those entering child care later. Children who had been in child care were rated higher than those without this experience
Positive	Ministère de l'Éducation Nationale, 1983; Richardson & Marx, 1989	Cohort samples from all socio-economic backgrounds up to the end of seventh grade	Government statistics on grade retention	Children were more likely to pass grade one, and to be promoted from sixth to seventh grade, if they had participated in a centre-based group program prior to school entry. Likelihood of passing grade one increased with each year of preschool attended regardless of social class.
Positive	Larson & Robinson, 1989	125 grade two and three children with preschool group experience, 71 comparison children	<i>The Comprehensive Test of Basic Skills</i> (McGraw-Hill, 1982) and the <i>Science Research Associates (SRA) Achievement Battery</i> (Science Research Associates, 1979)	Boys who had attended a preschool program scored significantly higher on all ten tests administered. No significant between-group difference was found for girls, but girls who had attended a preschool program tended to obtain higher scores on reading comprehension, spelling, and all three language tests
Positive	Osborn & Milbank, 1987	4,863 ten-year-olds with preschool program experience, 3,380 comparison children	A standard reading test used across British elementary schools and tests to measure ability in mathematical concepts and processes, listening ability, and reading. Teacher ratings of the child's skills in expressive language	Children with preschool program experience obtained significantly better scores on reading, mathematical concepts and mathematical processes, they were also rated by teachers as having better expressive language skills
Positive	Pierson, Walker & Tivnan, 1984	169 second grade children with preschool child care experience, 169 comparison children	Teacher assessment of the children's ability to decode or comprehend stories in a 2-2 level basal reader	Only 19.3% of children with child care experience prior to school entry were rated as unable to perform at the 2-2 reading level in

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				comparison to 32.5% of the comparison children
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continued...

† Andersson (1992) does not provide an exact number for the children in his study with or without child care experience. Instead, he uses the phrase provided in quotation marks in the above table.

continued...

OVERALL RESULT	STUDY	SAMPLE	MEASUREMENT TOOLS	SPECIFIC FINDINGS
Positive	Sheehan, Cryan, Wiechel & Bandy, 1991	1,200 grade one and two children with child care experience prior to school, 940 comparison children <sup>†</sup>	A standard academic achievement test used on a State-wide basis and school board grade retention statistics	Children with preschool child care experience performed approximately ten percentile points better on every subtest of the academic achievement test and were half as likely to have been retained a grade
Positive	Tietze, 1987	A random sample of 203 elementary schools. The comparison made is between children's elementary school functioning in areas where child care centres are or are not readily available	Government statistics on grade retention and assignment to special education classes	Children in areas where child care centres were readily available were less likely to be retained a grade and less likely to be assigned to a special education class between grade one and the end of grade four (when the study terminated). The assumption is made that a higher proportion of children would have attended child care in areas where it was readily available
Positive	Wadsworth, 1986	1,373 eight-year-olds with regular non-parental child care prior to school entry, 303 comparison children	A standard test of reading ability	Children with regular non-parental child care as preschoolers had better reading skills
No between-group difference	Broberg, Hwang and Chace, 1993	90 grade two children with child care experience, 55 comparison children	Teacher ratings and standard tests on academic skills	No-between group differences on teacher ratings of reading, writing, and mathematics skills nor performance on standard tests of sentence recognition, reading comprehension, and solving mathematical problems
Negative	Vandell & Corasaniti, 1990 <sup>‡</sup>	199 eight-year-olds with varying lengths of child care experience, 37 comparison children	Academic grades on report cards from grades one, two and three	There was a direct association between length of child care experience and the children's academic grades. Children who had been in child care the longest obtained lower grades than children with less or no child care experience

<sup>†</sup>The subject statistics are from a companion article on the same study (Cryan, Sheehan, Wiechel & Bandy-Hedden, 1992).

<sup>‡</sup> This is the same study as the only study reportin negative findings in Tables VI and VII.

## CHAPTER VI - QUALITY MATTERS

### Introduction

Two major themes emerge from a review of the research:

- the value of a supervised experience with a group of children prior to school entry, particularly for the development of peer relationship, classroom, and language skills; and
- the importance of high quality, illustrated, for example, in the studies by Jacobs, Selig and White (1992), Vandell and Corasaniti (1990), and Andersson (1989, 1992).

Possible reasons for the value of child care participation prior to school entry have already been suggested in various conclusion sections. This chapter:

- defines what is meant by the term "high quality" when used in relation to child care;
- discusses the research that has specifically examined child outcome differences when high quality and low quality child care is compared; and
- identifies what is required for the provision of high quality child care.

### The concept of quality

In everyday life, the term "high quality" indicates something that does not just meet minimal standards. It provides added value. For young children, the minimal standard of care tolerated by our society is that which is presumed to safeguard the child's health and safety. If this standard is not met, the State may intervene.

However, care that is restricted to the protection of health and safety fails to promote, and may actually impede, a child's development. We know that:

- physical coordination and strength come from regular opportunities to run, climb, throw, catch, and manipulate a variety of objects;
- social skills develop through repeated contacts with others, not through playing alone or sitting watching television. Social awareness in an infant develops as the adult plays with the child and draws the child's attention to other children. The stage is set for the development of social competency when toddlers participate in turn-taking and other joint activities with adults and with other children (Howes, 1987);
- the child's ability to understand and use language by age six is predicted by the extent of the child's prior exposure to language and to opportunities to use it in a variety of ways and situations (Bruner, 1985; Carew, 1980; Clarke-Stewart, 1973; Golden, Rosenbluth, Grossi, Policare, Freeman & Brownlee, 1979; Martin-Huff, 1984; McCartney, 1984; Melhuish, Lloyd, Martin & Mooney, 1990; Rubenstein & Howes, 1983; Ruopp, Travers, Glantz & Coelen, 1979); and

- children from families that are unable to provide adequate levels of stimulation exhibit a decrease in cognitive functioning relative to same-age peers starting between age 18 and 24

months and continuing throughout the preschool period (Belsky & Steinburg, 1978; Burchinal, Lee & Ramey, 1989; Ramey & Haskins, 1981; Wright, 1983).

Quality child care is that which goes beyond simply protecting the child's health and safety to also support and assist the child's physical, emotional, social, language, and cognitive development.

### **A comparison of high and low quality care**

Certain caregiver behaviours and environmental characteristics have been found to be consistently associated with higher levels of child well-being and functioning. These include caregiver support and encouragement of children's exploration, caregiver responsibility for only a few children rather than a large group, and the availability of a variety of age-appropriate toys and activities. The presence or absence of certain adult behaviours or environmental characteristics is used to define a particular care situation as high or low quality.

Studies comparing children in high and poor quality child care can be divided into those assessing the impact *before* and *subsequent* to school entry. Research on children under age six still in their non-parental child care situation have found that those in situations classified as high quality, when compared with same-age peers from similar socioeconomic backgrounds in low quality child care:

- have higher levels of peer relationship skills (Kontos & Fiene, 1987; Phillips, McCartney & Scarr, 1987; Vandell & Powers, 1983; White, Jacobs & Schliecker, 1988);
- are more compliant with adults (Howes & Olenick, 1986; Peterson & Peterson, 1986) and better able to regulate their own behaviour (Howes, & Olenick, 1986; Phillips, McCartney & Scarr, 1987);
- have higher levels of language development (Goelman & Pence, 1988; McCartney, 1984; Melhuish, Mooney, Martin & Lloyd, 1990; Peterson & Peterson, 1986; Schliecker, White & Jacobs, 1991); and,
- have higher levels of cognitive skills as illustrated by their developmentally higher levels of play (Howes, 1990; Melhuish, Mooney, Martin & Lloyd, 1990; Vandell & Powers, 1983).

Only five studies have compared the impact of high versus low quality non-parental care prior to school entry on children's behaviours and performance once they reach elementary school. Table XI, on page 42, provides information about the studies' samples, measurement tools, and specific findings. In summary, when children whose preschool child care experiences were of high quality are compared with those who were in low quality care, they have been found to be:

- more considerate of others, less hostile, and better able to work cooperatively in a group when in kindergarten (Howes, 1990). At age eight, they exhibit higher overall peer social skills and obtain more positive ratings from classmates (Vandell, Henderson & Wilson, 1988);
- more willing to accept adult direction and rules in kindergarten (Jacobs & White, 1994) and at the end of grade one (Howes, 1988);

- more able to resist distraction and remain focused on a task when in kindergarten (Howes, 1990) and in grade one (Howes, 1988 using a different sample from that in her 1990 study);
- better able to follow multi-step directions and to work independently when in grade one (Howes, 1988); and
- perform better on tests to measure both understanding and use of language in grade one (Jacobs, Selig & White, 1992).

### **The inability of the home to compensate for poor quality non-parental care**

It is estimated that young children in full-time non-parental child care typically receive nine hours of care a day for 250 days a year (Human Resources Development Canada, 1994b). As a result, they may spend more of their waking hours with the substitute caregiver than they do with their parents. A poor quality child care setting, with its lack of adult encouragement or stimulation and lack of planned activities, mimics the home of a child from a deprived background. Therefore, it is not surprising that research indicates that a two-parent, middle-class home does not compensate for the negative impact of participating in poor quality child care, at least for children in full-time attendance (Howes, 1990; Melhuish, Lloyd, Martin & Mooney, 1990; Peterson & Peterson, 1986; Vandall, Henderson & Wilson, 1988). This underlines the need to ensure that children from all socio-economic backgrounds who receive regular non-parental child care prior to school entry receive high quality substitute care.

Table XI

**The long-term effects of high versus low quality non-parental care**

STUDY	SAMPLE	INDICATORS USED TO DETERMINE CARE QUALITY	MEASUREMENT TOOLS USED TO ASSESS THE CHILD'S FUNCTIONING	SPECIFIC FINDINGS
Howes (1988)	75 children at the end of grade one who had participated in a variety of centre-based and home-based group programs	Caregiver training in child development, group size, number of children per adult, whether there was a planned individualized program	Teacher ratings	The quality of the child care centre predicted grade one teacher ratings of the child's ability to follow multi-step directions, compliance, ability to work independently and remain focused on a task, ability to work in a group
Howes (1990)	80 children, 40 of whom had attended high quality and 40 low quality child care centres	Caregiver training in child development and number of children per adult	<i>The Achenbach Child Behavior Checklist</i> (Achenbach & Edelbrock, 1981)	Children with early entry into low quality child care were more likely to be rated as distractable, inconsiderate of others, and hostile when in kindergarten
Jacobs, Selig & White (1992)	27 grade one children who had been in a variety of child care centres	<i>The Early Childhood Environment Rating Scale</i> (Harms & Clifford, 1980)	<i>The Peabody Picture Vocabulary Test - Revised</i> (Dunn & Dunn, 1981)	Children who had been in high quality child care centres performed better on measures of understanding and using language in grade one
Jacobs & White (1994)	36 kindergarten children from a variety of centres	<i>The Early Childhood Environment Rating Scale</i> (Harms & Clifford, 1980)	Teacher ratings	Children from high quality centres were rated as more compliant with adult requests
Vandell, Henderson & Wilson (1988)	20 eight years olds, each of whom had attended one of three 'low quality' or one of three 'high quality' child care centres	Caregiver training in child development, number of children per adult, group size, availability of materials and equipment	Coding of a 45-minute video of the child interacting with two previously unknown children using standard behavioral descriptions	Children from 'high quality' centres spent more time in friendly interactions and less time in unfriendly interactions and were rated as having greater social competence

## The requirements for high quality non-parental child care

Using the pragmatic definition that high quality child care is that which protects the child's health, safety and well-being, and supports the child's development, researchers have identified its key elements. These elements include both variables of the service itself and structural/contextual variables.

### Service or program variables

Service or program variables are variables within the program itself. Research has shown that four service variables effect quality:

- the day-to-day relationship between adult and child;
- caregiver knowledge of child development;
- number of children the adult is responsible for at any one time; and
- the size of the group.

#### *a) The day-to-day relationship between adult and child*

The most important ingredient in caring for children is the amount and type of interaction between the caregiver and child. Research has shown that children are more likely to develop and use positive peer relationship skills, to develop good ability to understand and use language, and to have age-appropriate or better cognitive functioning, if their caregiver: is sensitive to their needs, responds quickly and appropriately, listens to children with attention and respect, initiates activities that are geared to the child's developmental level and interests, provides support and encouragement as children explore and test their skills, and sets consistent behavioural expectations. Children do poorly when their caregivers are emotionally or physically detached, harsh or critical or sarcastic, talk *at* rather than *with* them, or unnecessarily restrict children's activities and explorations.

The type of caregiver behaviour that supports and promotes children's development cannot be mandated. However, research has identified three key variables that increase the likelihood that warm, supportive, and stimulating interactions will occur between adult and child. These are: a) caregiver knowledge of child development; b) the number of children the adult is responsible for at any one time; and c) the size of the group (class). These variables, in turn, are shown to be linked to other factors (for a more thorough review of this literature see Doherty-Derkowski, 1995).

#### *b) The caregiver's knowledge of child development*

Thirteen studies show that caregivers are more likely to behave in desirable ways when they have post-secondary school education in child development (Arnett, 1989; Berk, 1985; Clarke-Stewart, 1987; Fischer & Eheart, 1991; Fosburg, 1981; Friesen, 1992; Galinsky, Howes, Kontos & Shinn, 1994; Howes, 1983; Howes, Smith & Galinsky, 1995; Pence & Goelman, 1991; Ruopp, Travers, Glantz & Coelen, 1979; Stuart & Pepper, 1988; Whitebook, Howes & Phillips, 1990). This holds true whether the non-parental child care is provided in a home setting or a centre.

The finding that child-related post-secondary school education is important is not surprising. Education in child development and care:

- assists the adult to understand children's developmental stages and needs. This, in turn, increases the likelihood that the adult will provide activities that are both stimulating and appropriate for the child's development level, and will not impose unrealistic expectations;
- helps to compensate for the fact that initially the substitute caregiver cannot know the child's developmental level and needs as well as the parent. An understanding of typical child development enables the caregiver to make 'educated guesses' about what is appropriate and desirable for the child; and
- assists the adult to understand and manage the more complex group dynamics and processes that occur among unrelated children who may not have the same history of familiarity and compromise as do brothers and sisters.

Research shows that children whose caregivers have education specific to child development or early childhood education receive higher scores on various measures of child development than do children whose non-parental caregiver does not have this educational background (Clarke-Stewart & Gruber, 1984; Howes & Olenick, 1986; Ruopp, Travers, Glantz & Coelen, 1979; Vandell & Powers, 1983).

*c) The number of children for whom the caregiver is responsible (staff/child ratio)*

Ten studies show that caregivers are more likely to behave in ways that support and encourage children's development when they are responsible for an appropriate number of children given the children's ages and developmental levels (Biemiller, Avis & Lindsay, 1976; Howes, 1983; Howes & Rubenstein, 1985; Howes, Smith & Galinsky, 1995; Kontos & Fiene, 1987; Palmerus, 1991; Ruopp, Travers, Glantz & Coelen, 1979; Smith, McMillan, Kennedy & Ratcliffe, 1989; Sylva, Roy & Painter, 1980; Whitebook, Howes & Phillips, 1990). Again, this holds true whether the non-parental child care is provided in a home setting or a centre.

Responsibility for an appropriate number of children enables the caregiver to be aware of and involved with each child as an individual. Adults under the stress of caring for too many children have been observed to spend a higher percentage of their time in simply controlling the children and less time in providing social or other stimulation (Biemiller et al., 1976; Field, 1980; Howes & Rubenstein, 1985; Melhuish, Mooney, Martin & Lloyd, 1990; Ruopp et al., 1979; Smith & Connolly, 1986).

Research has found that when each caregiver is responsible for an appropriate number of children, the children:

- cry less frequently (Howes & Rubenstein, 1985; Ruopp, Travers, Glantz & Coelen, 1979);
- involve themselves more frequently in group activities and engage in less solitary or unoccupied behaviour (Holloway & Reichhart-Erikson, 1988; Vandell & Powers, 1983). As a result, they have more exposure to opportunities for learning and skill development;
- have higher levels of communication skills (Howes & Rubenstein, 1985; Schwarz, 1983);

- are more considerate of others (Phillips, McCartney & Scarr, 1987) and exhibit more positive peer behaviours (Smith, McMillan, Kennedy & Ratcliffe, 1989); and
- are better able to regulate their own behaviour (Howes & Olenick, 1986).

*d) The number of children in the group (group size)*

Too many children in the group has been found to be associated with caregivers who are:

- overly restrictive and controlling (Howes, 1983; Howes & Rubenstein, 1985; Howes, Phillips & Whitebook, 1992); or
- detached and uninvolved (Howes, 1983; Howes & Rubenstein, 1985; Kontos & Fiene, 1987; Ruopp, Travers, Glantz & Coelen, 1979; Stith & Davis, 1984).

Ruopp et al. (1979) found that the benefit of smaller groups occurred even when the number of children per caregiver (staff/child ratio) was held constant. Groups of 12 to 14 three-to five-year-olds with two adults (ratio of 1:6 or 1:7) had better average outcomes than groups of 24 to 28 children with four adults (ratio also 1:6 or 1:7).

Children in small, rather than large groups:

- cry less frequently (Howes & Rubenstein, 1985; Ruopp et al., 1979);
- do better on tests measuring understanding of social situations (Clarke-Stewart & Gruber, 1984; Holloway & Reichhart-Erikson, 1988); and
- are more actively involved in group activities and exhibit a higher developmental level of play (Smith & Connolly, 1986; Ruopp et al., 1979).

*e) Other important service variables*

Other service variables that appear to support child well-being and development are: a) continuity of the relationship between caregiver and child; b) a daily routine that shows a balance between planned activities and free play; and c) well-organized and child-appropriate space and equipment (Zaslow, Rabinovich & Suwalsky, 1991). Research indicates that the degree of support and contact with other adults experienced by a family day care provider is also predictive of quality (Carew, 1980; Fosburg, 1981; Fischer & Eheart, 1991; Pepper & Stuart, 1992; Rosenthal, 1991).

### **Contextual variables**

Contextual variables are those variables outside the program that have a direct effect on its operation, for example, the level of funding available.

Research in the United States and in Canada has shown that three contextual variables affect the quality of child care:

- regulation, including legislated standards, monitoring, and enforcement;

- funding, especially as it is related to staff or caregivers' wages and working conditions; and
- auspice, or who owns or runs, child care services.

*a) The role of government regulation*

Although caregiver education, staff/child ratios, and group size cannot *guarantee* optimal patterns of caregiver-child interaction and stimulating activities that foster healthy development, they do appear to encourage them. Research indicates that government regulation of standards in these areas has an impact on the quality of child care.

i. Regulation of family or home-based child care

An American study involving three states found that regulated family day care providers engaged in more frequent and positive interactions with the children in their care than did unregulated providers (Galinsky, Howes, Kontos & Shinn, 1994). Three studies conducted in Canada in three different locales (in two provinces) found that regulated family day care providers as a group obtained higher scores on a standard measure of quality than did unregulated providers (Goelman & Pence, 1988; Pepper & Stuart, 1992; Pence & Goelman, 1991). One study also examined children's language development. It found that children in regulated homes had higher levels of language than age-mates in unregulated situations (Goelman & Pence, 1988).

ii. The effect of overall variations in legislated standards for centres

Two recent multi-state American studies have shown an association between the level of legislated requirements and the level of quality in child care centres. The first study involved 227 centres located in the following states: Arizona, Georgia, Massachusetts, Michigan and Washington (Whitebook, Howes & Phillips, 1990). At the time of data collection, Massachusetts had the most demanding requirements in terms of staff qualification levels and the maximum number of children per caregiver. Georgia had the lowest requirements, followed by Arizona. The researchers found that:

- staff in Massachusetts had, on average, significantly more training in early childhood education than did staff in Georgia or Arizona;
- centres in Massachusetts provided programs that were more stimulating and more appropriate for the children's developmental level than did centres in Georgia or Arizona; and
- the amount and quality of interaction between caregivers and children, and the general quality of the caregiving, was much lower in Georgia than in any other state.

Licensing requirements for Michigan and Washington were between those for Massachusetts and Arizona, as was the quality of their child care.

In a second study, Helburn, Howes, Bryant and Kagan (1995) compared 100 child care centres across California, Colorado, Connecticut and North Carolina. A larger proportion of poor quality centres was found in North Carolina than in any other state. At the time of data collection, North

Carolina allowed more children per adult and required less child development education for staff than did the other three states.

A third American study looked at the effect of improvements in legislated standards. In 1992, Florida decreased the permitted number of children per adult and increased the child development training requirements for staff in child care centres. Data were collected in 150 centres before the new licensing standards went into effect and then again in 1994 (Howes, Smith & Galinsky, 1995). The researchers found that the changes in standards were associated with improved social, language and cognitive skills among children. Specifically, in 1994, children were found to engage in more complex play with objects and with each other (an indication of both social and cognitive skills), to be more proficient with language, and to exhibit fewer problem behaviours than in 1992.

### iii. Staff/child ratio (number of children per adult)

Howes, Phillips and Whitebook's 1992 study examined the relationship between staff/child ratios and caregiver behaviour in 227 centres. The findings of the study may be found in Table XII. The term "appropriate caregiving" refers to observed health and safety practices, amount and type of adult-child interactions, and the degree and type of supervision provided for children. The term "developmentally appropriate activity" refers to the extent to which the activities and the toys and equipment are appropriate for the developmental level of the children.

Table XII

#### The relationship between the number of children per adult, appropriate caregiving, and developmentally appropriate activity

Number of children per adult by age of child	Percentage of children not receiving appropriate caregiving	Percentage of children not receiving developmentally appropriate activities
0-24 months		
- 1:3 or less	10%	7%
- 1:3 or 1:4	45%	50%
- more than 1:4	57%	46%
25-36 months		
- 1:4 or less	4%	2%
- 1:4 to 1:6	26%	41%
- more than 1:6	39%	42%
37-54 months		
- 1:8 or less	9%	7%
- 1:8 or 1:9	52%	50%
- more than 1:9	54%	50%

**Source:** Howes, C , Phillips, D.A., & Whitebook, M. (1992). Thresholds of quality: Implications for the social development of children in center-based care. *Child Development*, 63, 449-460 (page 455).

Table XII illustrates that the percentage of children not receiving appropriate caregiving, as defined above, increases as the number of children per adult increases. This holds true across all age groups. Similarly, the percentage of children not receiving developmentally appropriate activities, as defined above, increases as the number of children per adult increases. The significant increase in the percentage of children not receiving appropriate caregiving and not receiving developmentally appropriate activities when above a ratio of 1:3 for children aged 0-24 months, 1:4 for children aged 25-36 months, and 1:8 for children aged 37-54 months, suggests that these ratios may be thresholds that separate high quality from poor quality child care.

iv. Group size (the number of children in the group)

Table XIII illustrates the findings of Howes, Phillips & Whitebook (1992) with regard to group size.

Table XIII

**The relationship between group (class) size, appropriate caregiving, and developmentally appropriate activities**

Group or class size by age of child	Percentage of children not receiving appropriate caregiving	Percentage of children not receiving developmentally appropriate activities
0-24 months		
- 6 or fewer children	11%	11%
- 6 to 12 children	32%	32%
- 12 or more children	13%	54%
25-36 months		
- 12 or fewer children	18%	4%
- 12 to 18 children	22%	37%
- 18 or more children	58%	50%
37-54 months		
- 18 or fewer children	9%	6%
- 18 or more children	18%	50%

**Source:** Howes, C , Phillips, D.A., & Whitebook, M. (1992). Thresholds of quality: Implications for the social development of children in center-based care. *Child Development*, 63, 449-460, (page 456).

There is a sharp increase in the number of children not receiving supportive, growth enhancing care when group sizes are above 12 for children up to 24 months, and 18 for those up to 36 months (three year-olds). Again, this may signal a threshold between high and poor quality care.

v. Conclusion

While the amount and type of interaction between caregiver and child cannot be legislated, three variables that increase the likelihood that the interaction will be warm and support child well-being and development are appropriate for regulation. These variables are ratio, group size, and caregiver education. For each, standards can be established and compliance can be directly observed and measured. Furthermore, research involving both home-based and centre-based child care has shown that caregiver education related to child development, the number of children per caregiver, and group size each independently predicts the effect of non-parental child care. Therefore, it is desirable that these be regulated in order to foster optimal development in all children.

*b) Funding-related variables. The adult work environment: wages, benefits and working conditions*

The Whitebook et al (1990) study conducted in five American states concluded that:

...better quality centers paid higher wages, had more teachers caring for fewer children, employed better educated and trained staff, had lower staff turnover, and better adult work environments (1990, p. 112).

The type and amount of interaction between children and caregivers is affected by how the caregiver feels about the job. Job satisfaction is, in part, determined by the adult work environment. The specific aspects of the work environment for early childhood staff found by research to predict job satisfaction are: salaries and benefits, general working conditions, and administration. These variables are, in turn, associated with the level of funding available to the service. For example, salaries are apt to be lower when the operating budget is tight.

*i. Wages and benefits*

Low staff salaries have been found in both American and Canadian research to predict job dissatisfaction and high turnover rates (Canadian Child Day Care Federation & Canadian Day Care Advocacy Association, 1992; Kontos & Stremmel, 1988; Whitebook, Howes & Phillips, 1990). Job dissatisfaction among child care providers is associated with caregivers who are harsh and restrictive with children (Berk, 1985), and less likely than other caregivers to provide children with developmentally appropriate and stimulating activities (Phillips, Howes & Whitebook, 1991).

*ii. Working conditions*

Lack of time for program preparation during working hours, the usual situation in child care, means that staff do this work on their own time, thus increasing their workload without increasing their salary. This situation contributes to job dissatisfaction (Canadian Child Day Care Federation & Canadian Day Care Advocacy Association, 1992; Whitebook, Howes & Phillips, 1990). Poor staff/child ratios contribute to job dissatisfaction as well (Kontos & Stremmel, 1988; Whitebook, Howes, Darrah, & Friedman, 1982; Smith & Connolly, 1986). An analysis of the data used in the Whitebook et al. (1990) study examining the impact of adult work environment on job satisfaction found that factors such as provision of a staffroom, storage space for personal belongings, and professional development opportunities were all relevant (Phillips et al., 1991). The provision of things such as paid preparation time and in-service staff development add to the cost of operating a service.

iii. Administrative style

Several aspects of the adult work environment related to administrative style (for example, input into decision-making, provision of regular staff meetings) have been demonstrated to have an impact on job satisfaction (Maslach & Pines, 1977; Whitebook et al, 1982, Stremmel, 1991).

iv. The impact of job satisfaction

Staff job satisfaction in child care has been shown to have an impact on children through its influence on how the staff interact with children and through turnover rates. Berk (1985) found that caregivers who were dissatisfied with their jobs tended to be restrictive and controlling. Phillips reports that dissatisfied caregivers are less likely to provide developmentally appropriate activities (Phillips et al., 1991). An American study showed a positive relationship between job dissatisfaction and high scores on a questionnaire indicating high potential for abusive behaviour with children (Haddock & McQueen, 1983).

v. Staff turnover

Research in both the United States and Canada shows that high job dissatisfaction predicts high staff turnover in child care. High turnover, in turn impacts on staff behaviour as well as on global ratings of quality (Phillips et al., 1987; Kontos & Fiene, 1987; Whitebook et al., 1990). Children in situations where there are high rates of staff turnover have been found to show more signs of anxiety (Cummings, 1980), and to have lower developmental levels of play with peers (Whitebook et al., 1990).

*c) The issue of auspice*

In Canada, child care services can be operated by government, non-profit or for-profit organizations. Making a profit is one of the goals of any for-profit organization, although it may have other goals as well. Non-profit organizations do not have the pursuit of profit as even a peripheral goal. Sociological theory predicts that organizational goals drive decision-making regarding the level and type of employee, permitted employee behaviour, the physical facility, and the services offered to clients (Scott, 1987). In the child care field, this hypothesis would lead to the prediction that for-profit organizations would tend to hire people with lower educational levels, to pay staff lower salaries, and to have each staff member responsible for a larger number of children. Both American and Canadian research has demonstrated that this tends to be so.

Canadian research shows that centres operated for-profit are likely to have staff with lower levels of relevant education (Canadian Child Day Care Federation & Canadian Day Care Advocacy Association, 1992), poorer staff/child ratios (Friesen, 1992; Park, 1992; DeGagné & Gagné, 1990), and higher turnover (Canadian Child Day Care Federation & Canadian Day Care Advocacy Association, 1992; Friesen, 1992; LaGrange & Read, 1990; Association for Early Childhood Education, Ontario, 1986; Dumais, 1986; and DeGagné & Gagné, 1990). In addition, global program ratings of quality are likely to be lower in for-profit than in non-profit centres (Friesen, 1992; Lyon & Canning, 1995).

### **Concluding observations**

The research has consistently shown that non-parental care is not harmful when it is provided by people who are warm and responsive to the child, have some understanding of child development, and are not responsible for too many children. In fact, child care may be beneficial, especially in the area of social and language skill development. However, the research is equally clear that non-parental child care has the potential to harm children, even those from middle-class homes. Children's development can be stunted when child care has one or more of the following characteristics: a caregiver who is neglectful or harsh, caregivers who are unable to provide individualized attention because they are responsible for too many children, and/or situations where the children lack adequate stimulation.

Roughly two-thirds of Canadian children under age six receive non-parental child care on a regular basis while their parents work. Contemporary and future realities suggest that the workforce participation of mothers with young children will remain high. Due to the shortage of regulated child care, the majority of children receive non-parental care through unregulated situations. These do not have to meet even basic safety standards, and are not monitored by any outside person other than the parent. The small amount of Canadian research that has been done suggests that unregulated child care tends to be of lower quality than regulated care. We know that poor quality child care has the potential to impede children's development. We also know that children who enter the school system with deficient social, language, or thinking skills are more likely to experience school problems and to drop out before graduation. For the sake of the individual child, and for the good of society as a whole, it is essential that non-parental care received by young children be of high quality.

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## CHILDREN AT RISK OF DELAYED DEVELOPMENT

### Compensatory programs

Compensatory programs are designed to provide an enriched social and intellectual experience to compensate for an impoverished home environment. They usually are part of a package that includes preventive health care, parent education, and other family support services. As a result, compensatory programs often differ from typical early childhood programs not only in their clientele but also in the depth and breadth of the services they provide. Virtually all the available research on compensatory programs is from the United States, where the concept of compensatory, in contrast to universal, preschool programs is well entrenched.

The potential for compensatory programs to lessen the incidence of school failure and school dropout among children from socially and economically disadvantaged families has been clearly demonstrated. For example:

- a longitudinal study that has followed severely disadvantaged inner-city African-American children from compensatory preschool at age three or four to age 27, reports that at age 19, 'graduates' of the Perry Preschool Program were significantly more likely to have completed high school, to have some college or vocational training, and to be employed than adolescents in a matched control group without preschool experience. They were also significantly less likely to have been enrolled in a special education class while attending elementary or secondary school (Berrueta-Clement, Schweinhart, Barnett, Epstein & Weikart, 1986). At age 27, they had a significantly higher level of completion of grade 12 (71% in comparison to 54%), significantly higher monthly earnings (29% versus 7% earning \$2,000. or more a month), and a significantly lower percent had received social assistance services sometime during the previous ten years (Schweinhart & Weikart, 1993);
- when children from impoverished homes who entered a compensatory centre-based child care program at age four months were compared with a control group of children with no child care experience, they had significantly better verbal abilities and a better grasp of numerical tasks at age 42 months (Ramey, Dorval & Baker-Ward, 1983; Ramey & Campbell, 1979). At age eight, the same children out-performed those without early child care experience in both reading and mathematical ability (Ramey & Campbell, 1984). At age 12, they obtained higher average scores on standard tests of reading, mathematics, language and general knowledge than did the children who had not the program (Campbell & Ramey, 1994); and
- in a longitudinal analysis of eleven compensatory programs for socially disadvantaged four- and five-year-olds, Lazar and Darlington (1982) found that the children who had been enrolled in one of the programs were significantly less likely to have been retained a grade and received higher scores on standard tests of mathematical and reading ability. In some cases the different outcomes for children who had or had not participated in a compensatory preschool program were dramatic. For example, only 3% of the graduates of one program were retained a grade in comparison to 29% of the control group (Gray, Ramsey & Klaus, 1983). Among girls, only 5% of those who had been in the compensatory preschool dropped out of school before graduation in comparison to 50% of the girls without preschool experience.

The above sample of the research demonstrates that compensatory programs have a positive effect on children from socially disadvantaged homes.

## Head Start

This American initiative, designed for children at risk because of social disadvantage, began in 1965 as part of what was called the War On Poverty. The term Head Start includes a wide variation of program approaches, and considerable variation in staff educational levels from high school graduation only, to post-graduate degrees in early childhood education (Zigler & Styfco, 1994).

The Head Start Evaluation, Synthesis and Utilization Project (McKey, Condelli, Ganson, Barnett, McConkey & Plantz, 1985) used a meta analysis to review the findings from 210 studies that had examined different Head Start programs. It found that:

- Head Start has immediate positive effects on the child's cognitive functioning, but the difference between Head Start and control children disappears within two or three years of starting public school; and
- in the 17 studies that collected data on the socio-emotional impact, there were immediate gains in self-esteem and social behaviour. However, the differences between the Head Start and the control children disappeared after about three years of public school.

McKey et al. (1985) note that the findings from individual studies on individual programs vary widely. There are two possible reasons for this:

- the variation in program approaches and staff qualifications noted by Zigler and Styfco (1994), and the wide range of class sizes noted by McKey et al. (1985). These variations suggest the probability that programs varied considerably in their quality; and
- the fact that McKey et al. present their findings on the basis of averages across all programs. The impact of poor quality programs, for example, those with large class sizes and untrained staff, could override the impact of higher quality programs.

Program quality has become an important issue for Head Start. Even its supporters note that too few Head Start classes are of the quality needed to promote growth and development adequately (Bryant, Burchinal, Lau & Sparling, 1994). Bryant et al. (1994) report that a study they did using Head Start children from homes ranging from poor quality to fairly stimulating, found that children in higher quality Head Start programs performed better on a range of academic readiness skills, regardless of the quality of their home environment.

## Community child care programs

There is some evidence that participation in ordinary, but good quality, child care programs also benefits children from socially disadvantaged homes. Burchinal, Lee and Ramey (1989) compared three groups of children from this type of background. One group participated in a compensatory program from infancy until they entered kindergarten. The second group was enrolled in eleven different high quality but non-specialized child care centres for between one and four years prior to starting kindergarten. The third group participated in less than one year of community-based child care or had no preschool program. At age 54 months, children who had been in the compensatory program demonstrated higher levels of language skills and cognitive functioning than did children who had been enrolled in the ordinary but high quality child care programs. However, the children who attended the ordinary child care programs for more than one year, in turn, performed better than the children with less or no child care experience. The researchers concluded that even a non-specialized, but high quality, child care program can have a positive effect on children at risk for developmental delay.

**ENDNOTES**

1. Throughout this paper, unless specified otherwise by the use of the term "tendency" or "tended", the research findings reported are statistically significant. This means that the differences found between the two groups of children could not have occurred simply by chance.
2. A third study reports higher verbal skills among children who had regular non-parental care prior to school entry but does not address either family socioeconomic status or maternal education (van IJzendoorn & van Vliet-Viser, 1988).
3. Children were asked to nominate three same-sex class-mates that they "liked to play with" and three that they "did not play with". The number of class-mates who said they did not play with a particular child indicated the number of negative nominations. The number of positive nominations was based on the number of class-mates who said they did play with the child in question.
4. A third study (Wadsworth, 1986) reports that children with preschool group experience perform better on a variety of language tests. However, the parental educational level and family socio-economic status in the group with preschool experience was significantly higher than in the comparison group.

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