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Predicting Teacher Ratings of Aggression from Child Care  
Experience of Kindergarten Children

Rhonda S. Adessky

A Thesis  
in  
The Department  
of  
Psychology

Presented in Partial Fulfillment of the Requirements  
for the Degree of Master of Arts at  
Concordia University  
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## Abstract

Predicting Teacher Ratings of Aggression from Child Care  
Experience of Kindergarten Children

Rhonda S. Adessky

The goal of this study was to determine if knowledge of children's day care history increases the prediction of teacher ratings of aggression after accounting for the effects of sex, socioeconomic status (SES), and vocabulary comprehension.

Subjects included 55 boys and 56 girls drawn from regular kindergarten classes in three French elementary schools in Montreal.

Teacher ratings were obtained using an adaptation of a scale developed by Vandell and Corasaniti (1988). Teacher ratings were compared to another indirect measure of aggression, the Social Problem Solving Task - Revised (Rubin, 1988), to determine whether the scale was tapping aggressive behavior. Language ability was assessed using the Evaluation de Vocabulaire Audio-Visuelle (Dunn, Dunn, & Whalen, 1988), a French translation of the Peabody Picture Vocabulary Test - Revised (Dunn & Dunn, 1981). Information on day care history and socioeconomic status was obtained from telephone interviews with the parents.

Results indicate that more extensive time spent in group day care is related to increased aggression in girls, but not boys in this sample. As well, children who offered

aggressive responses on the social problem solving task were rated as more aggressive by their teachers.

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Predicting Teacher Ratings of Aggression from Child Care  
Experience of Kindergarten Children

The increased use of day care in the past twenty years has created concern about the effects of group care on many aspects of children's development. This investigation focused on one developmental outcome, aggression. Aggression has been related to early entry to group care and extensive day care experience by several researchers (Belsky, 1988; Belsky & Rovine, 1988). These authors postulate that separation from the mother during infancy and repeated separations in the early childhood years interferes with normal bonding and can cause insecure or anxious attachments between mothers and their children. In turn, insecure or anxious attachments have been found to be associated with aggression (Sroufe, 1983). Aggressive children are at risk for peer rejection (Coie, Dodge & Coppotelli, 1982; French, 1988) and for negative outcomes later in life (Roff, 1963, West & Farrington, 1973).

Research investigating the relationship between day care and insecure or anxious attachments has been the subject of much controversy. Methodological issues including the definition and measurement of attachment have rendered interpretation of research in this area difficult. In particular, the need for an operational definition of attachment that is independent of experience with maternal separation and reunion has been recognized. At the present

time, it is not possible to conclude that day care experience is related to attachment problems in children.

Research investigating the relationship of aggression and day care experience is somewhat more consistent. Research generally supports the notion that aggressive behavior is related to early entry and extensive group experience among day care children (Belsky, 1988; Finkelstein, 1982; Haskins, 1985; Schwarz, Strickland, & Krolick, 1974; Vliestra, 1981). Two general sets of problems exist, however, when interpreting research on day care and aggression. One difficulty is that the multivariate nature of this phenomenon is often ignored. Most studies fail to account for variables such as sex of the child and family background influences. Several authors have found that each of these variables separately can affect children's social development (Howes, 1990; Robinson & Plomin, 1983; Robinson & Corley, 1989; Vandell & Corasaniti, 1990), but few have looked at their combined effects. As well, the definition and measurement of aggressive behavior varies from study to study. Often, assertive behavior or negative social outcomes are confounded with aggressive behavior.

The primary purpose of the present investigation is to examine the contribution of several variables including, sex, socioeconomic status, receptive vocabulary, and day care experience to the prediction of aggression in

kindergarten children as rated by their classroom teachers. Care was taken to select aggressive behaviors for the rating scale. As well, the teacher ratings of aggression were related to children's aggressive responses to a hypothetical-reflective social problem solving task.

#### Background

The review of the literature is divided into two main sections. The first section briefly reviews the plethora of research conducted in the area of day care over the past twenty years, giving special emphasis to studies focusing on the relation of early entry and extent of day care experience to attachment and aggression. The second section of the review examines the relation of factors such as sex, cognitive competence, and socioeconomic status to aggression in children.

#### Day Care Research

Day care and attachment. According to attachment theory, the formation of secure attachment relations with caregiving adults, usually the mother, is important for the child to develop sufficiently flexible behavioral systems in order to adapt easily to new situations (Bretherton, 1985). Early day care studies assessed attachment using Ainsworth's Strange Situation (Ainsworth, 1973), which examined the degree to which the infant became distressed upon separation from the mother or following exposure to a strange adult. The results of these investigations have generally indicated

that day care does not disrupt maternal attachment compared to home-reared controls (Blanchard & Main, 1979; Caldwell, Wright, Honnig, & Tannenbaum, 1970; Cochran, 1977; Doyle, 1975; Doyle & Somers, 1978; Moskowitz, Schwarz, & Corsini, 1977; Portnoy & Simmons, 1979; Roopnarine & Lamb, 1978).

The emergence of new findings in the area of infant attachment rendered the conclusions from the early day care studies uninterpretable. Crying upon separation or willingness to approach unfamiliar people was questioned as the index of security of mother-infant attachment relationship. Rather, the behavior upon reunion following separation was suggested as the appropriate behavior reflecting mother-infant attachment. Data from several studies revealed that a strong relationship existed between extensive nonmaternal care experience in the child's first year of life and reunion behaviors in Ainsworth's (1973) strange situation (Barglow, Vaughn, & Moliter, 1987; Belsky et al., 1988; Schwartz, 1983; Vaughn, Gove, & Egeland, 1980). These investigators found a heightened avoidance of mothers by their children with extensive nonparental care experience.

Belsky (1986) interpreted this behavior as indicating that "entry into care in the first year of life is a risk factor for the development of insecure-avoidant attachments in infancy..." (p.7). However, Clarke-Stewart and Fein (1983) suggested a different interpretation of these

findings. They postulated that differences in reunion behavior might be due to the fact that day care children interact regularly with many people and may be more independent in their relationships with their mothers. Day care children are thought to undergo a change in the quality of the relationship with their mothers such that reunion behaviors in the strange situation may not be a valid measure of attachment for them.

The effects of day care experience on children's attachment to their mothers are ambiguous. Future theories must refine the definition of attachment and researchers must operationalize attachment behaviors so that insecure reactions can be distinguished from experience with separation and reunion. Meanwhile, it seems clear that there are behavioral differences among children who have experienced repeated multiple separations from their parent and those who have not. Whether such differences in reunion are related to poor attachment has yet to be established.

Though attachment deficiencies have not been clearly linked to day care experience, it is still possible to ask whether aggression is related to extensive group experience. It is possible that extensive peer contact rather than insecure attachment is the mechanism by which aggression is linked to day care. Several authors have reported increased aggression (Belsky, 1988; Finkelstein, 1982; Haskins, 1985; McCartney, Scarr, Phillips, Grajek, & Schwarz, 1982;



Rubenstein, Howes, & Boyle, 1981; Schwarz et al., 1974; Vandell & Corasaniti, 1988; Vliestra, 1981; Volling, Braungart, Nuss, & Feagans, 1990) and poor peer relations (Howes, 1990; Vandell & Corasaniti, 1990) in children with extensive group experience. Interestingly, several of these studies have found day care children to be both more aggressive and more sociable.

Day care and aggression. Researchers have compared day care and home reared children on a variety of aggressive, assertive, or negative behaviors. One study (Finkelstein, 1982) provides strong support for differences in aggressive behavior in kindergarten children related to extensive day care experience and early entry to group care. Finkelstein (1982) defined aggressive behavior as hitting, threatening, insulting, and taking possessions without permission from another child. He found that when observing kindergarten children during recess, those who had former day care experience were more aggressive and hostile towards their peers than the control group of low income children who did not attend day care. The day care children had an average of 12.1 aggressive acts per 15 minutes of observation compared to the control group who averaged .83 aggressive acts. All the children in this study were part of a program designed to provide early education to infants and children from low-income families. Twenty-eight of the infants considered to be at risk for environmentally caused

developmental delay were randomly assigned to day care and control groups. Children attended the day care program for 49 weeks per year for approximately 8 hours per day. They began coming to the center between 6 and 12 weeks of age and continued in the project until entry into public school kindergarten.

Only one additional study assessed aggressive behaviors in home reared and day care children. Hegland and Rix (1990) reported that home-reared and day care children did not differ in either aggressive behaviors, as measured by observed frequencies or teacher ratings. Their study consisted of 32 middle-class kindergarten children who were rated by their teachers using the Kindergarten Behavior Rating Scale (Schwarz et al., 1974; Vliestra, 1981) and for whom 240 five second observations were collected. The small sample size, the infrequency of aggressive behavior, and the fact that the home-reared group had some day care experience, may account for the different findings in this study.

When negative behaviors rather than aggression per se have been studied, results have not been clear cut. In a Swedish longitudinal study examining the peer relations of children reared at home versus in day care centres, Larner, Gunnarsson, Cochran, & Hagglund (1989) found that teachers described center girls who entered grade 1 at age 7 as "too active, willful, and dominating". Rubenstein et al. (1981)

found that 3.5 to 4 year old children who had been in day care since one year of age were less behaviorally and verbally compliant with their mothers than children reared primarily at home since birth. However, Moore, Snow, and Poteat, (1988) did not find differences in adaptive and social competence among kindergarten children with at least 18 months of full time day care experience, children who had attended family day care, and children who had not participated in any type of day care on a regular basis. The differences in findings in these latter two studies may be due to the fact that the children in Rubenstein et al.'s (1981) study had more day care experience than the children in Moore et al.'s study.

Researchers have also compared day care children with earlier entry and more prolonged group experience to day care children with later entry and less group experience. One of the earlier studies to examine the social development of children in day care was a study by Schwarz et al. (1974). This study compared aspects of the social behavior of two groups of children, one of which had been in day care since one year of age (an average of 36 months) and a second group matched for sex, age, race, and parental education and occupation, who had no formal day care experience prior to the experiment and were entering day care initially at 3 and 4 years of age. Results indicated that the teacher as well as observer ratings differentiated the infant and the

preschool entry groups on three of the nine traits. Early entry was related to less cooperativeness with adults and more physically and verbally aggressive behavior with both peers and adults.

McCartney et al. (1982) found that children rated by their caregivers as aggressive, hyperactive, and anxious were more likely to have entered day care during infancy.

Haskins (1985) examined aggression among kindergarten children with varying amounts of day care experiences. Experimental children had attended an experimental day care center 5 days a week, 49 weeks a year, between 3 months of age and the time they entered public schools. Although the control group were not enrolled in the experimental day care program, most of them did have some group day care experience, on average about 27.9 months. Teachers were asked to rate each child's level of aggression on a scale of 1 (never aggressive) to 5 (very often aggressive) in 4 settings: the playground, hallway, lunchroom, and classroom. Teachers were also asked to rate the frequency of 3 aggressive acts (hit, kick, push) on a scale of 1 to 5 and frequency of 4 types of verbal aggression - threaten, swear, tease, and argue - on a scale of 1 to 5. The results revealed that during the first year of school, the children in the experimental group were reported by teachers to be more aggressive than children in the control group, at least in some situations. According to Haskins, the analyses

imply that increased aggressiveness is associated with extensive day care attendance. Interestingly, children in the experimental group were rated lower on aggression during subsequent early elementary school years than during kindergarten, while children in the control group tended to be rated slightly higher on aggression in subsequent years. Thus, day care experience effects may be modified by social experiences in the elementary grades.

Three studies compared children in part-time versus full-time group child care settings. Vliestra (1981) compared teacher and researcher ratings of aggression in two groups of children, unmatched for sex, between the ages of 2.5 and 4.5 years of age. One group, the half day group attended preschool in the morning only. The other group, the full day group, attended preschool in the morning and a day care program in the afternoon. Results indicated that observers recorded more positive peer interaction and motor activity among the full day than the half day children. The teachers on the other hand, rated the full day children as less able to get along with peers and as more aggressive. Since aggression and motor activity were highly intercorrelated, it is possible that these differences were mediated by variations in the observers' and teachers' perceptions of motor activity and its relation to aggression.

Field, Masi, Goldstein, Perry, and Parl (1988) reported

similar results to Vliestra (1981). Their observational data revealed that children (24 to 65 months old) in full-time care exhibited more sociable behavior than their part-time peers. However, teacher ratings on aggressiveness and assertiveness were higher for children in the full-time program. Again the two groups were not matched for sex. Volling et al., (1990) found that children enrolled for more hours per week in center care were rated by their mothers as significantly more aggressive, and by their caregivers, as significantly more distractible, but also more sociable.

This review of the literature generally supports the idea that day care attendance or experience is related to aggression. Children who enter day care early and have greater amounts of day care experience are likely to be seen as more aggressive than children reared at home or children with later entry/less group experience. This result seems to hold across a variety of measures of aggression including teacher and parent ratings and direct observation by researchers. Furthermore, there is support for this conclusion in toddlers, preschoolers, and kindergarten children. There seems to be some question as to whether day care experience continues to be related to aggression in older children.

One difficulty in interpreting research on day care and aggression is that the multivariate nature of this phenomenon is often ignored. Most of the studies cited

failed to account for child and family background influences. For example, although aggression is known to be related to sex, few studies found sex differences (Field et al., 1989; Moore et al., 1988; Rubenstein et al., 1981; Schwarz et al., 1974; Vliestra, 1981) and the most empirically sound studies did not analyze for sex differences (Finkelstein, 1982; Haskins, 1985; Volling et al., 1990). The only study relating day care and aggression to report sex differences was Larner et al. (1989). As well, SES has been shown to be related to aggression. Only one study cited (Rubenstein et al., 1981) attempted to control for SES by matching the subjects in the two groups. The other studies simply reported that the subjects were from either low SES families (Finkelstein, 1982; Haskins, 1985), middle SES families (Field et al., 1989; Vliestra, 1981; Volling et al., 1990), or mixed-class backgrounds, such as lower and middle class (Schwarz, 1974), and middle and upper-middle class families (Moore et al., 1988). Finally, despite the fact that cognitive competence has been shown to be related to aggressive behavior, none of the studies cited controlled for this variable. The failure to control for such family background variables may introduce a confound into the results of the studies cited previously.

The second section of this review briefly describes research on child and family variables, sex, socioeconomic status, and cognitive functioning, which may influence

aggressive behavior in children.

### Child and Family Factors

Sex differences and aggression. In 1974 Maccoby and Jacklin reported their landmark finding that boys are more verbally and physically aggressive than girls. Since then, several authors have reported the same results using either teacher ratings (LaGreca, 1981; Mize & Cox, 1989) or observational studies (Barrett, 1979; Fagot & Hagan, 1985). Maccoby and Jacklin (1974, 1980) state that this sex difference in aggression is established at least as early as the preschool years and continues through subsequent phases of development.

Theoretically, it has been argued that aggression is appropriate for males but not for females, according to sex role standards in North America. Environmental supports, in the form of encouragement for aggression and opportunities to display aggression are more abundant for males than females. Parke and Slaby (1983) reported that parents engage in more physically active play with boys than with girls, and that parents discourage rough and tumble play and fighting on the part of daughters more than sons. Parents are more likely to use physical punishment with sons than daughters and to use reasoning with daughters more often than sons. Frodi, Macauley, and Thome (1977) stated that as a result of specific socialization experiences, females are more susceptible than males to guilt and anxiety over the



expression of aggression, and may inhibit aggressive behavior.

Given the socialization of sex differences in aggression, it seems reasonable to question whether the opportunity for increased peer contact present in day care serves to strengthen or weaken traditional sex role behavior. Certainly, there is an impetus to control for sex differences before examining the role of day care experience in the prediction of aggressive behavior.

Cognitive competence and aggression. A relationship between aggressive behavior and intelligence or academic skills is well established in the literature, though the causal link is not clear. It has been hypothesized that high IQ children have available more verbal responses to resolve conflicts than children with low IQs and are therefore less likely to express aggression physically. It is also possible that academic performance, which is related to IQ, is linked to aggression because of feelings of frustration and low self-esteem caused by poor school performance.

There is research to indicate that children whose academic performance is relatively poor are more aggressive than children who do well in school (Kohn, 1968; Robins, 1966). Feshbach and Price (1983) found a significant negative correlation between IQ and aggression for kindergarten children. They also found a stronger negative

relationship between reading levels and aggression when these children were in grade one and two. Huesmann, Eron, and Yarmel (1987) conducted a 22 year longitudinal study where data were collected on aggressiveness and intellectual functioning in more than 600 subjects, their parents, and their children. Their results suggested an interaction between aggression and intellectual functioning in that early aggression interferes with intellectual development and diminished intellectual ability may well stimulate aggressive responses in young children.

Socioeconomic status and aggression. Researchers have offered evidence of social-class differences in interactive styles among children. Like children with low IQs, low SES children use more nonverbal, aggressive interactions with their peers than their middle-class counterparts who use more verbal solutions to solve problems. This difference may be a result of the differences in interactive styles between parents and children in low and middle or high SES families (Hess & Shipman, 1966; Wootton, 1974). Low social-class parents tend to use more aggressive, physically punitive ways of handling their children, while middle and high social-class parents use more verbal rationale methods of dealing with their children.

Ramsey (1988) found that low SES children more frequently responded to hypothetical situations with aggressive responses than did their middle-class peers.

These findings support Spivack & Shure's (1974) conclusion that low-income children use more aggressive responses to hypothetical-reflective social problem solving measures. Ramsey (1988) also reported that teachers rated the low SES children as less socially competent. These findings suggest that low SES children may be at greater risk of exhibiting increased aggressive behavior, than their middle or high SES peers.

## Statement of the Problem

Day care is becoming an increasingly important issue for parents. According to Statistics Canada, in 1991 approximately 900,000 women with children under the age of five were employed. This figure illustrates the need to provide parents with useful information about the effects of nonmaternal care on their children. Day care is a very emotionally charged topic. Deleterious findings, such as those Belsky (1986) reports, that "extensive infant day care experience is associated with insecure attachment during infancy and heightened aggressiveness and noncompliance during the preschool and early school-age years" (p.7), have far-reaching impacts on our society. Thus, the call, by experts in the field, for more rigorous studies of day care carried out at an appropriate level of complexity cannot go unheeded.

Review of the day care literature has demonstrated the need for a multivariate approach to understanding the relationship of day care and aggressive behavior. Review of the literature has implicated poor intellectual functioning (Feshbach & Price, 1983; Huesmann, Eron, & Yarmel, 1987; Kohn, 1968; Robins, 1966; Campbell, Breaux, Ewing, & Szumowski, 1986) and low socioeconomic status (Hess & Shipman, 1966; Ramsey, 1988; Wootton, 1974) as factors related to aggression. As well, boys have generally been found to be rated as more aggressive than girls (Burdett & Jensen, 1983; Deluty, 1979; Fagot & Hagen, 1985; Maccoby &

Jacklin, 1974; Maccoby & Jacklin, 1980). Given these findings, it is necessary to control for sex, SES, and intellectual functioning when investigating the effects of day care on aggression. The literature reviewed on day care and aggression seems to indicate a relationship between group care experience and increased aggression in children.

The primary purpose of this investigation is to answer the question, can day care experience predict teacher ratings of aggression for kindergarten children, once sex, SES and intellectual functioning have been taken into account. It is hypothesized that children's day care histories represented by variables such as early entry into group care, a greater number of months spent in group care, several different types of care arrangements, and many changes in care arrangements, will be rated as higher on aggression by their classroom teachers.

As can be seen from several of the studies reviewed (Field et al., 1988; Vliestra, 1981; Volling et al., 1990), a discrepancy between different observers or instruments when attempting to measure aggressive behavior exists. In order to extend the meaning of teacher ratings, this study included another indirect measure of aggression, a social problem solving test (Social Problem Solving Task - Revised (SPST-R)) (Rubin, 1988). It is predicted that teacher ratings of aggression and aggressive solutions provided by children to the SPST-R will be related.

## Method

### Subjects

Fifty-five boys and fifty-six girls (N=111) enrolled in regular kindergarten classes in three French elementary schools in the city of Montreal participated in this study. French was the primary language of 74% of the subjects whereas French and another language were spoken equally often at home by 18% of the subjects. Only 6% of the children came from primarily English speaking backgrounds. The remaining 2% of the children spoke a foreign language at home. The mean age of the subjects was 5.6 years and ranged from 5.2 to 6.7 years. Students were recruited using a letter of explanation (Appendix A) and consent forms (Appendix B) which were given to the teachers to distribute to their classes. Parents sent back the consent forms indicating that they agreed to participate in the study. There was a 69% return rate for the three schools combined. The 31% nonresponse rate indicated a refusal to participate in the study.

### Measures

Teacher ratings of aggression. The teacher rating scale used in this study was an adaptation of the rating scale used by Vandell and Corasaniti (1988). As shown in Appendix C, teachers used a 5 point scale to rate children on various items tapping aggressive behavior. The original scale contained 25 items, grouped conceptually to form four

subscales: peer relations, work/study skills, emotional well-being, and adult-child relationships. In the original scale, aggressive items were included as part of the peer subscale and represented a small portion of the items. Since the current study focused on aggression, several items illustrating aggressive behavior were added and these items were grouped to form a separate subscale. Items ( $n=9$ ) on the aggression subscale included: a) teases other children...does not tease other children, b) is defiant...is cooperative and compliant, c) does not verbally threaten other children...verbally threatens, d) does not hit, kick...hits and kicks other children, e) respects property...destroys property, f) fights with other children...does not fight, g) tattles...does not tattle, h) does not bother others...bothers others, i) gets angry easily...does not get angry easily. These items were chosen to tap overtly aggressive behavior.

Vandell and Corasaniti (1988) reported internal reliabilities ranging from .82 to .91 ( $M=.86$ ) on the four original subscales of this measure. Both internal and interrater reliability were calculated for the aggression subscale in the current study. In the present study, teacher ratings were compared to children's aggressive solutions on the Social Problem Solving Task administered to determine if a relationship existed between the two measures of aggression.

Social problem solving skills. Social problem solving skills were assessed using a version of Rubin's (1988) Social Problem Solving Test - Revised (SPST-R), which was translated and modified by Tessier and her colleagues (Tessier & Doyle, 1989) (Appendix D). The original test was designed to assess both quantitative and qualitative features of social problem solving in young children. Each child was presented with twelve pictured problem situations, which illustrated the central character trying to gain access to a toy or object in the other child's possession or the central character attempting to make a new friend.

Tessier and Doyle's (1989) modifications included reducing the number of stories presented to the children to three object acquisition stories and three friendship stories. The age and sex of the characters for all the stories were kept consistent with the age and sex of the child being interviewed. As well, the pictures were colored in an effort to make the stimuli more visually pleasing to children.

In the current study, each child was shown the pictures and asked what the central character could do or say in order to gain access to the desired object or to meet a new person. After the child offered a first response, the experimenter, asked "if that didn't work, what else could the girl/boy do or say so that s/he could get the toy/object or get to know the new girl/boy better?" If the child gave



the same response, s/he was encouraged again, using standardized questions to think of a different response. Children who did not come up with another solution, were probed a maximum of three times, in an attempt to elicit an additional response. Finally, the experimenter asked, "what would YOU do or say in this situation?" All the solutions were recorded verbatim.

A complex scoring system is available for this task. However, in this study, only object acquisition problems were used, and these responses were classified as aggressive or non-aggressive solutions. All three responses, ie 1) what could the girl/boy do to get the toy/object, 2) if that didn't work what else could s/he do, 3) what would you do to get the toy, were included in the scoring procedure. Aggressive responses included such solutions as force or grab the object/toy, physical attack on the child, and damaging the object/toy.

To assess the reliability of the aggressive responses on this measure, all the SPST-R protocols were initially scored by the author as to whether they were aggressive or not. A female research assistant independently scored 25% of the protocols to establish reliability. Agreement was found to be 100% between the two raters.

An earlier version of the SPST-R (Social Problem Solving Task) (Rubin & Krasnor, 1986) has been shown to correlate with other measures that attempt to identify

children at risk for social problems, such as peer nominations, teacher rating scales, and observational data. Rubin, Daniels-Beirness, and Hayvren (1982) reported significant negative correlations between the number of positive peer ratings and the proportion of aggressive strategies offered on the SPST  $r(111) = -.23, p < .05$ . Rubin and Clark (1983), in predicting teacher ratings of hostile/aggressive behavior, reported that the proportion of SPST aggressive strategies contributed significantly to the overall variance. Rubin, Daniels-Beirness, and Bream (1984) reported a positive correlation between isolate play and the proportion of aggressive responses on the SPST,  $r(71) = .21, p < .04$ . This study will examine the relationship between teacher ratings of aggression and children's aggressive solutions on the SPST-R.

Verbal ability. The vocabulary of the English speaking subjects ( $n=7$ ; 6% of the sample) was measured by the child's performance on the Peabody Picture Vocabulary Test - Revised, Form M (PPVT-R) (Dunn & Dunn, 1981). The PPVT-R is a norm-referenced, individually administered test of receptive vocabulary. The scores on the English version have good split-half reliability coefficients falling within a range of .73 to .84 for the 5 year to 7 year 11 month age group (Dunn & Dunn, 1981). They have been related to measures of intelligence such as the Weschler Intelligence Scale for Children (WISC), the Stanford-Binet and the

McCarthy Scales of Children's Abilities (Sattler, 1988). The median value of 17 correlations done between the PPVT-R and the Stanford-Binet Intelligence test and the median value of 65 correlations done between the PPVT-R and the verbal scale of the Weschler Intelligence Scale for Children are .62 and .66 respectively (Dunn & Dunn, 1981).

A French version of the PPVT-R called the Evaluation de Vocabulaire Audio-Visuelle (EVA I) was administered to the French speaking children ( $n=104$ ; 94% of the sample). The EVA I is a translation of the PPVT-R, standardized on 400 Acadian children in New Brunswick (Dunn, Dunn, & Whalen, 1988). An item analysis based on the strongest and weakest 27% of the norm-referenced population indicated the need for a slight modification in the order of the words. As seen in Appendix E, the test consists of 175 words ordered according to ascending difficulty, each of which accompany a page with four pictures. The child's task is to match the word read by the examiner with the picture it best describes. Due to the limited use of the EVA I, no reliability or validity data are available. The scoring for the EVA I was based on age equivalent scores for the English norms.

Background information questionnaire. Using the questionnaire shown in Appendix F, background information of the subjects was collected during a telephone interview with a parent, usually the mother, of each of the children in the study. The interview began with a question as to current

after-school arrangements for child care. Then, each preceding child care arrangement used by the family was recorded. Table 1 describes the day care variables obtained from the narrative descriptions of the subjects' child care histories. Information on the language spoken at home, and parental education and occupation was also collected.

Socioeconomic status. The socioeconomic status (SES) of each subject's family was calculated using the Hollingshead Four Factor Index (Hollingshead, 1975). This scale is based on the premise that social status is a multidimensional concept. The four factors are education, occupation, marital status and gender. Although the index is useable for either gender, gender does not enter into the computations. If both parents are working, the scale takes into account the average of the two parents' education and occupation. Occupation is keyed to the approximate 450 occupational titles and codes of the 1970 United States Census, and is graded on a 9 point scale. The education factor is based on the number of years of school achievement and continues to be scored on a 7 point scale ranging from less than 7th grade to graduate or professional training. The Four Factor Index is a reliable and valid measure of socioeconomic differentiation. Mueller and Parcel (1981) reported that the Hollingshead is highly correlated with other common methods of SES determination, such as the Nock and Rossi (1979) Home Prestige Scale.

Table 1

Names and Definitions of Day Care Variables

<u>Name</u>	<u>Definition</u>
Age of First Group Experience	Age in months when the child first entered group day care, preschool, or kindergarten.
Months in Group Care	Number of months in group care between ages 0-5.
Types of Child Care	Number of different types of child care experienced between the ages 0-5.  The types include: homecare father/mother, group day care, family day care, and sitter in/out of home.
Changes in Child Care	Number of times child care arrangements were changed within the same type of care and from one type of care to another.

### Procedure

The project coordinator contacted all the schools by telephone in order to solicit their cooperation and explain the nature of the investigation. Initial contact with the school principals was made in the Fall of 1989. The testing began in the Winter of 1990 to ensure that all the students had a minimum of 4 months of schooling prior to being administered the measures. Teachers distributed information letters and consent forms to all their students to take home to their parents. Parents' consent was obtained to: 1) test children individually during school hours, 2) interview parents by telephone for child care history, and 3) allow teachers to complete the rating measure on each of the participating children in their classes. The teachers received \$5 for each completed form.

The measures were administered to the children on an individual basis in either English or French depending on the language spoken at home or the language in which the child felt most competent. Each child was seen during school hours, outside of the classroom, for a minimum of two and a maximum of three times to complete the entire testing battery, which included measures used in a larger project. Each session lasted approximately 15 minutes. The author, a research assistant and the project coordinator, all bilingual women in their late twenties administered the measures. Efforts were made on the part of all the

examiners to establish good rapport with the subjects. Before testing began, the examiners tried to make the children feel as comfortable as possible by asking them questions such as name, age, interests, and so on. At the end of testing, the children were thanked for their participation and effort.

## Results

The goal of this study is to determine if knowledge of children's day care history increases the prediction of teacher ratings of aggression after accounting for the effects of sex, SES, and vocabulary comprehension. In order to answer this question, several analyses were conducted. First, the reliability of the teacher rating scale, and its relationship to the other measure of aggression, the Social Problem Solving Task - Revised, are examined. Secondly, descriptive information is provided on the independent and dependent variables. The third step involves selecting the day care history variables which were to be entered in the multiple regression analyses. Finally, the results of hierarchical multiple regression analyses on the total sample and separate follow up analyses for boys and girls are presented.

### Reliability and Validity of Teacher Ratings of Aggression

The literature reports that teacher rating scales are one of the most frequently used methods to assess children's social behavior. Teachers have ample opportunity to observe children and have been shown to be good sources of information about children's behavior. Since a new teacher rating measure was used in the current study, its reliability and validity were assessed. First, inter-rater reliability was assessed by comparing ratings by both kindergarten and after school child care teachers for all children currently attending after school care ( $n=55$ ).



Interrater reliability between the teachers in these two settings was found to be significant for the total sample,  $r(55) = .54$ ,  $p < .000$  and for the girls  $r(28) = .60$ ,  $p < .001$ . For the boys, the correlation approached significance,  $r(27) = .36$ ,  $p < .07$ .

Secondly, reliability of the classroom teachers' ratings of aggression was measured by calculating a Cronbach alpha for boys (alpha = .88) and girls (alpha = .90). These results indicate good internal consistency among the 9 items that make up the aggression scale.

This study employed another measure to indirectly assess aggression. A hypothetical-reflective social problem solving measure (SPST-R) was used as an additional source of information about children's aggressive behavior. On this measure, most children offered prosocial solutions as ways of obtaining a toy from another child, while only a few boys and girls offered aggressive responses.

In order to determine whether the 20 children (18% of the sample) who offered aggressive solutions to the social problem solving task were also rated as more aggressive by their teachers, the sample was dichotomized into two groups, those children who offered at least one aggressive response on the SPST-R, and those who did not use any aggressive responses on the SPST-R, and a t-test was computed. The groups were dichotomized in such a way because aggressive responses on the SPST-R were so rare that if a child offered

even one aggressive response, it differentiated this child from the rest of the children who offered no aggressive responses. Results revealed that children who offered at least one aggressive solution on the SPST-R were rated as significantly more aggressive ( $M=21.6$ ) than their peers who did not offer aggressive responses ( $M=16.3$ ),  $t(109) = -2.9$ ,  $p < .004$ . A chi square analysis revealed that boys ( $n=14$ ) offered a significantly greater proportion of aggressive responses on the SPST-R than girls ( $n=6$ ),  $X^2=4.1$ ,  $p < .04$ .

The finding that children who offer more aggressive solutions on a social problem solving task, are also rated as more aggressive by their teachers, supports the use of teacher ratings as measures of aggression in children.

#### Descriptive Data

The total sample consists of 111 subjects, 55 boys and 56 girls. The mean age for the subjects is 71.6 months. Table 2 indicates the ranges, means, and standard deviations for all variables for the total sample.

Aggression ratings, as evaluated by the classroom teacher can range from 9 to 45. In this sample, scores varied from 9 to 39 with a mean of 17.3 ( $SD=7.6$ ) and a median of 15.0. Scores were very skewed, as shown in Figure 1. Figure 1 depicts the spread in scores of teacher ratings of aggression into four quartiles. Among children who are rated above the median, teachers' discriminations range widely from somewhat to very aggressive ratings.

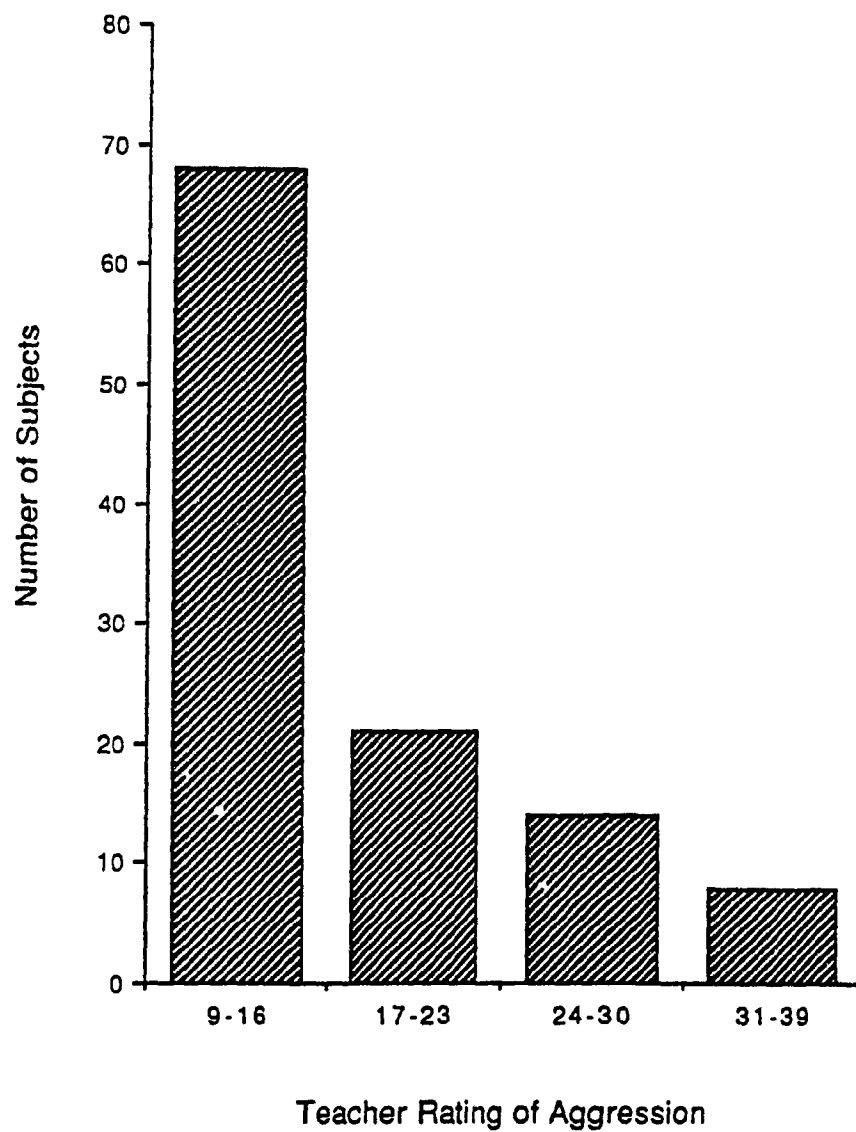
Table 2

Range, Mean, and Standard Deviation, for Aggression Ratings,  
Family Background Variables, and Preschool Variables.

Variable	Range	Mean	Standard Deviation
Aggression Ratings	9-39	17.3	7.6
SES/ Hollingshead	17-66	51.2	12.1
Vocabulary	61-160	111.1	20.6
Age of 1st Group	5-71	42.7	15.6
Number Months in Group Care	0-60	14.1	16.9
Number of Changes	0-5	1.5	1.3
Number of Types	1-3	2.1	.77

Figure 1

## Teacher Rating of Aggression Scores Graphed by Quartiles



The socioeconomic status (SES) ratings were calculated using the Hollingshead Four Factor Index. This sample includes 11 single-parent families and 100 two-parent families. In the sample, all the fathers worked, 76% of the boys' mothers and 82% of the girls' mothers worked at least part time. The SES scores varied from 17 to 66 for the entire sample indicating that data was collected from families ranging from lower to upper socioeconomic strata. The mean SES score for the entire sample fell within the middle class range, ( $M=51.2$ ,  $SD=12.1$ ). Scores in this range reflect occupations such as technicians, minor professionals, and small business owners.

Receptive vocabulary was assessed using the PPVT-R for those children whose first language was English, or who felt more comfortable being tested in English than in French (7% of the sample). The remaining children (93% of the sample) were tested using the EVA I, the French version of the PPVT-R. The vocabulary scores, based on the child's chronological age at the time of testing, ranged from 61 to 160. The children in the sample varied widely with respect to their knowledge of vocabulary. The mean score fell in the high average range ( $M=111.1$ ,  $SD=20.6$ ).

Age of first group experience is defined as the child's age in months when s/he entered her/his first group experience. A group may be considered a day care center, pre-kindergarten or kindergarten. The children in this

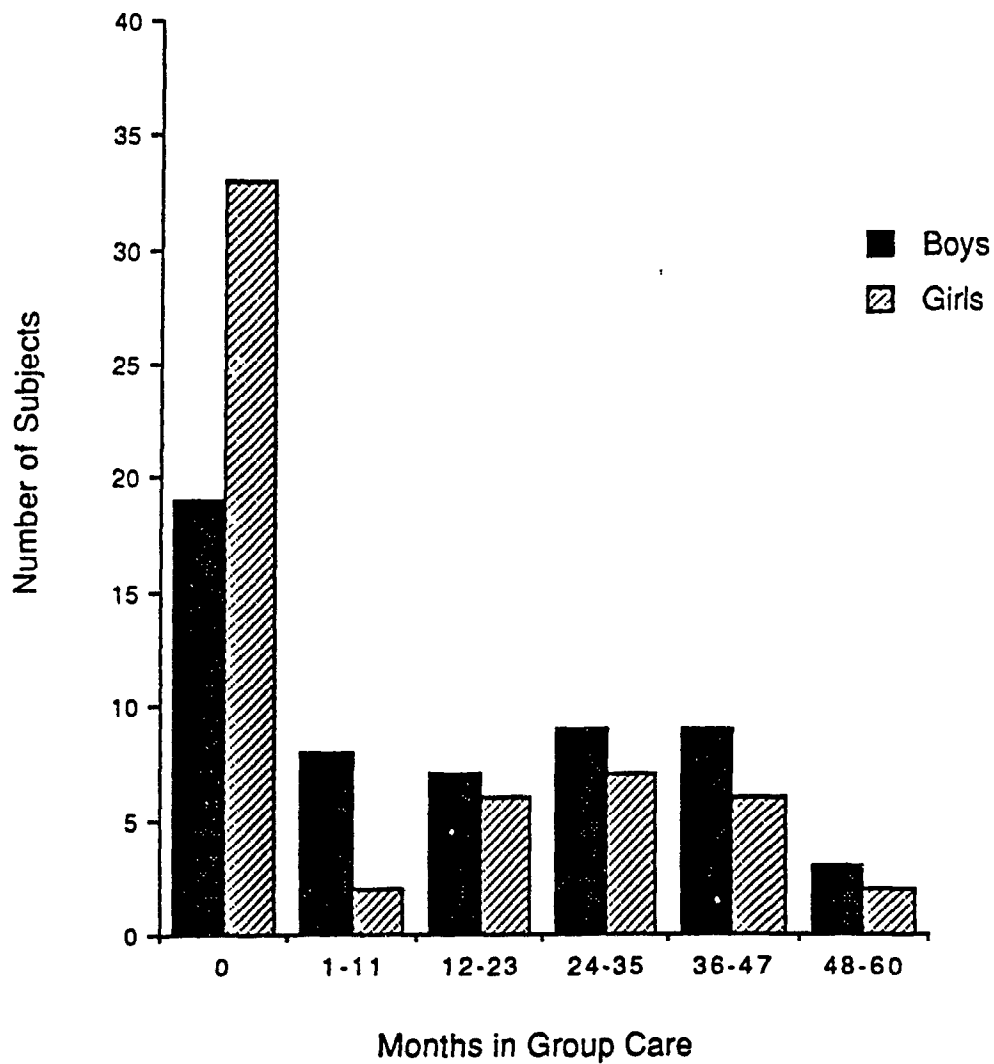
study entered their first group from the ages of 5 months to almost 6 years. The average age of entry was 42.7 months (SD=15.6).

Total months in group care is the total number of months that the children spent in group day care during their preschool years (0-5 years). This variable includes children who have no group care experience as well as those who have one or more months of group care experience. The range for this variable was 0 to 60 months. The average amount of time spent in group care was 14.1 (SD=16.9) months. Figure 2 depicts the number of months in group care for boys and girls separately. Since approximately half the sample ( $n=52$ , 35% of the boys and 59% of the girls) had no formal group experience, they received a score of 0 on this variable. In this sample, a significantly greater proportion of girls than boys had no group experience,  $\chi^2=6.7$ ,  $p<.01$ . If children who never attended group care are omitted from the analyses, the mean number of months of group care for the 36 boys with group care experience is 25.7 months (SD=15.0). The mean for the 23 girls with group care experience is 28.0 months (SD=13.3).

Number of changes in child care is the number of times a child changed his or her child care arrangements from age 0 to age 5. The different types of arrangements included in this variable are homecare, center day care, family day care, and sitter inside or outside of the home. Changes may

Figure 2

Number of Months in Group Care Graphed by One Year Periods for Boys and Girls



have been within one type of arrangement (e.g. changed from one day care center to another) or between types (e.g. changed from home care to family day care). The range was 0 to 5 changes and the average number of changes was 1.5 ( $SD=1.3$ ) times for the whole sample.

Number of types of child care is defined as the total number of different child care arrangements the child has used between birth and five years. The recognized types of child care are homecare with father or mother, group day care, family day care, and sitter in or out of the home. This variable ranges from one type to three types. The mean for the sample was 2.1 ( $SD=.77$ ) different types of care.

#### Variable Selection and Tests of Assumptions

This study hypothesized that several variables, including sex, SES, language ability, and day care history, may predict teacher ratings of aggression of kindergarten children. To examine this hypothesis, zero-order correlations between family background variables and preschool care variables were calculated. If variables were highly related, one of them was selected for further analyses. The variables selected to be examined in a multivariate framework were examined for outliers, violations of multivariate assumptions, and skewness. Finally, multiple regression analyses were conducted to determine the multivariate relationships among the variables in predicting teacher ratings of aggression.



To examine the relationship among the variables, Pearson product-moment correlation coefficients were calculated initially to assess the zero-order associations among these variables. Correlations among SES, vocabulary scores, total number of months in group care, number of changes in care, number of types of care arrangements, age of first group experience, and teacher ratings of aggression are reported in Table 3 for the entire sample, with the Bonferonni correction for inflated alpha levels.

These results indicate that all four of the day care experience variables are significantly correlated with each other. According to Tabachnick and Fidell (1989), variables that are very highly correlated ( $>.70$ ) suggest redundancy. Since age of first group experience and total number of months in group care were highly correlated,  $r(111) = -.75$ ,  $p < .00$ , one of these variables, number of months in group care was selected as representative for use in the multiple regression analyses. The number of changes in care and the number of types of care arrangements were highly correlated as well,  $r(111) = .74$ ,  $p < .00$ . The number of types of care was selected as representative of the two variables for use in the multiple regression analyses.

Both of the day care variables selected for use in the multiple regression were related to the teacher ratings of aggression, whereas the two variables not chosen were not related to the dependent variable. Number of months in day

Table 3

Bivariate Correlations Between Teacher Ratings of  
Aggression, Family Background Variables, and Preschool  
Variables.

(N = 111)

	Vocab score	No. Month	No. Change	No. Type	Age of 1st Grp.	Teacher Ratings
SES	.21*	.18	.24*	.26*	-.18	-.06
Vocab		.12	.20*	.02	-.15	-.14
No. Months			.50**	.59**	-.75**	.22*
No. Changes				.74**	-.45**	.08
No. Types					-.41*	.24*
Age of 1st Group Exper.						.09

\*p &lt; .05

\*\*p &lt; .002 after Bonferroni correction

care was positively correlated with teacher ratings of aggression,  $r(111) = .22$ ,  $p < .02$ . The number of different care arrangements was also positively correlated with aggression ratings,  $r(111) = .24$ ,  $p < .01$ . These two variables were moderately correlated with each other,  $r(111) = .59$ ,  $p < .00$ .

Before conducting the multiple regression analyses, the data were evaluated to ensure that all assumptions regarding multivariate statistical analyses were met. To test for outliers, Z-score transformations and inspection of Mahalanobis distance revealed two univariate outliers for the number of different child care arrangements, and one univariate outlier for the teacher rating of aggression variable. No multivariate outliers were detected. The univariate outliers were brought in to three standard deviations from their respective means.

In order to verify the assumptions of univariate and multivariate linearity and homoscedasticity, a scatterplot of residuals was plotted against the teacher ratings of aggression scores. Examination of the residuals indicated no serious departures from linearity or homoscedasticity.

Tests of skewness coefficients were run on all the variables. Results revealed that the teacher ratings of aggression variable was positively skewed. As previously described (see Figure 1), teachers rated the majority of the children as low on aggression, and used a wide range of scores to represent the remaining children on the aggression

scale.

The number of months in group care was positively skewed. A greater number of children from this sample had no group care than those who had at least one month of group care. Number of changes in child care was positively skewed. Most children had few changes while a few children had several changes. SES was negatively skewed in this sample.

The analyses were run using the skewed variables despite the fact that they violated the assumption of normality. Stevens (1986) reports that the use of skewed variables in an analysis has only a small effect on type I error.

#### Prediction of Aggression Ratings

In order to determine if the addition of information about children's preschool care experience improves prediction of their teacher ratings of aggression above and beyond what can be accounted for by gender, socioeconomic status and vocabulary scores, a four-step hierarchical multiple regression was employed. Sex was entered on the first step of the regression. SES and vocabulary were entered as control variables on the second step. The intercorrelations among the preschool variables suggest that they should be considered in combination in order to permit accurate prediction of teacher ratings of aggression. Day care history variables were entered on the third step of the

regression. Finally, the interactions between sex and all the other variables were entered on the fourth step of the regression.

Results indicate a significant main effect for sex (Adjusted R<sup>2</sup>=.04, F(1, 108)=6.0, p<.02). The negative direction of the correlation r(111)= -.23 suggest that boys are rated as significantly more aggressive than girls. A t-test comparing boys (M=19.0, SD=7.6) and girls (M=15.6, SD=7.4) on aggression ratings, confirm these findings t(109)=2.4, p<.02. Neither of the other demographic variables, SES nor vocabulary, significantly contributed to the overall variance (Adjusted R<sup>2</sup>=.06, F(3, 106)=3.2, p<.17).

The day care variables, number of months in group care and number of different types of group care, significantly predicted teacher ratings of aggression (Adjusted R<sup>2</sup>=.10, F(5, 104)=3.5, p<.03). This finding indicates that the more time spent in group care and the greater the number of types of care, the higher are the teachers' ratings of aggression.

The interaction terms, when entered all on one step did not indicate any significant effects (Adjusted R<sup>2</sup>=.13, F(10, 99)=2.6, p<.15). However, when each interaction was examined separately, the sex by number of preschool months was significant (Adjusted R<sup>2</sup>=.15, F(6, 103)=4.3, p<.01). To examine this interaction more fully, separate multiple regressions were run for boys and girls.

Prior to running the separate regressions, the boys'

and girls' data were examined for violations of assumptions. Analyses revealed that number of months in group care and teacher ratings of aggression were skewed in the positive direction, however, SES was no longer skewed in the negative direction. Bivariate correlations, between the teacher ratings, family background variables, and preschool variables run separately for boys and girls are reported in Appendix G.

Results of the separate regressions, as reported in Table 4, indicate that SES and vocabulary did not significantly predict teacher rating of aggression in either boys (Adjusted  $R^2$ =.04,  $F(2,52)=2.14$ ,  $p<.13$ ) or girls (Adjusted  $R^2$ =.00,  $F(2,53)=.36$ ,  $p<.70$ ). The second step of the regression reveals that the preschool variables, did not significantly increase the proportion of predictive variance in boys (Adjusted  $R^2$ =.03,  $F(4,50)=1.5$ ,  $p<.23$ ) but they did account for more than 15% of the explained variance for girls (Adjusted  $R^2$ =.16,  $F(4,51)=3.6$ ,  $p<.01$ ).

Examination of the standardized regression coefficients (Beta) and the squared semi-partial correlation coefficients ( $Sr^2$ ), shown in Table 4, reveals the unique variance contribution of each of the variables in predicting teacher ratings of aggression. A comparison of the squared semi-partial correlations of the preschool variables for girls indicates that the number of months in child care experience accounted for 11% of the unique variance and the number of

Table 4

Staged-hierarchical Regression Predicting Teacher Rating of  
Aggression from SES, Vocabulary Scores and Preschool  
Variables for Boys and Girls Separately.

BOYS (n=55)

Variable	Beta	Sr <sup>2</sup>
<u>Step 1</u>		
SES	-.11	.01
Vocabulary Scores	-.24	.06
<u>Step 2</u>		
Number of types of child care	.21	.03
Number of months in group care	-.10	.01
		Adjusted R <sup>2</sup> = .03

Table 4 continued

GIRLS ( $n=56$ )

Variable	<u>Beta</u>	<u>Sr<sup>2</sup></u>
<u>Step 1</u>		
SES	.003	.00
Vocabulary Scores	.12	.01
<u>Step 2</u>		
Number of types of child care	.12	.01
Number of months in group care	.42	.11
		Adjusted R <sup>2</sup> = .16*

\*  $p < .01$



different types of arrangements accounted for 1% of the unique variance. Similarly, when comparing the standardized regression coefficients, it appears that number of months in preschool is weighted more heavily than the number of different types of care arrangements.

Preschool variables, more specifically, the number of months spent in group day care before entering kindergarten, are good predictors of teacher ratings of aggression for girls but not for boys.

## Discussion

The purpose of the present study was to examine the relationship between preschool child care, sex, SES, language ability and teacher ratings of aggression in kindergarten children. The most interesting finding to emerge from this investigation was that preschool child care history, in particular, the number of months spent in group care, was a significant predictor of teacher ratings of aggression in girls, but not boys. Within the multivariate context, none of the other variables, SES, vocabulary, or number of different types of child care, were significantly related to aggression ratings in either girls or boys.

Direct comparisons between the current finding of increased aggression among girls with extensive group experience and other studies relating aggression and day care experience is difficult since most investigations do not report analyses by sex, and those studies that do, found no differences. Some support for the current findings is offered by Larner et al. (1989) who found that teachers described grade 1 girls with day care experience as "too active, willful, and dominating". One recent study for which only preliminary results are available (Bates, Marvinney, Bennett, Dodge, Kelly, Petit, 1991), found that extensive day care was associated with higher levels of aggressive behavior in kindergarten boys and girls. More specifically, day care experience significantly predicted teacher ratings of aggression and peer nominations for

aggressive behavior in boys, and predicted observed aggressive behavior and teacher ratings of internalizing behavior on the Achenbach Child Behavior Checklist for girls. These findings also differ from the current study in that SES was the most consistent and substantial predictor of aggression noted.

Since a detailed report of the Bates et al. (1991) study is not yet available, hypotheses concerning the reasons for differences in findings must be speculative. However, the failure of the current study to find a relation between SES and aggression may be due to the predominantly middle to upper-middle class sample used. Bates et al. (1991) stipulate that they made a special effort to recruit children from lower SES as well as middle SES backgrounds as participants in their study. Also, in the current project, SES was positively correlated with the number of months that girls spent in day care, but was uncorrelated with day care experience for boys. Girls from higher SES families spent more time in group care than girls from lower SES families. Finally, significantly more girls than boys had no group experience or were raised in maternal home care. Such relations may differentiate the current sample from that of Bates et al. (1991), and may be related to the selection of group care for girls by a specific subgroup of Canadian families.

Higher SES families selecting group care for their

daughters may espouse less traditional sex role values. Many of these families are dual income families in which both parents work, and both mother and father's work is valued. These families may be more tolerant of aggressive or assertive behavior and less inclined to make girls anxious about the expression of aggression. Such families may choose group care because they wish to encourage social competence, including assertion in their daughters. Parents who keep their daughters at home may encourage more compliant, less aggressive behavior in them.

Another selection factor may also operate. Parents who select group care for their daughters may see them as more "outgoing" or "aggressive" initially and thus, may feel that these girls will be better able to handle themselves in a group situation.

A second set of hypotheses as to why more group care predicts aggression ratings in girls and not boys may be related to the group experience itself. Bandura (1973), proposed a social learning model of aggression which postulates that aggression is an acquired instrumental behavior. Boys in this sample were rated on the average as more aggressive than the girls. Girls who have attended group day care probably have more frequent interactions with boys. Research in this area has focused on the sex of the target to determine whether boys or girls aggress differently with respect to the sex of their peer. It has

been found that aggression is higher in boy-boy and boy-girl dyads than in girl-girl dyads (Barrett, 1979; Fagot & Hagan, 1985, Smith & Green, 1974). Girls with group care experience may also observe and imitate their male counterpart's aggressive behavior. Both the greater opportunity to observe boys and more frequent interactions with boys may be related to the findings in the current study of increased aggression in day care girls.

Further explanations as to why girls who attend group day care are seen by their teachers as being more aggressive include the possibility that girls may have to behave in a more aggressive manner in order to obtain their fair share of attention or materials. When placed in an environment where toys must be shared by many others, and adults are not available at all times, little girls may quickly learn that sitting quietly and waiting for their turn may be an ineffective strategy for getting what they want. Grabbing toys and yelling for the teacher may be "wrong", but may prove to be quite effective. It is possible that, in the more structured kindergarten classrooms, such behavior on the part of the girls is seen as inappropriate and thus, rated as aggressive, whereas in boys it is viewed as typical and accepted behavior. In other words, day care girls may be rated as more aggressive than their home-reared peers, whereas boys are just "boys".

One drawback of this study was the fact that both

children with no day care experience and children with varying amounts of experience were combined, that is "no group care" was scored as zero months of experience. The small sample size did not allow for testing differences between children with no group care, small and large amounts of care.

Another problem of this research was its reliance on teacher ratings as the primary measure of aggression. Although a good source of information, teacher ratings correlate only modestly with one another for girls and poorly for boys. A possible reason for the modest correlation between the classroom teachers' and day care teachers' ratings of aggression may be due to the fact that the children are being rated in two different environments. Day care teachers see the children in a more permissive environment where children interact more with their peers. Classroom teachers view the children in a more structured environment where excessive interaction may not be tolerated. The higher agreement between the day care and classroom teachers' ratings of aggression for girls may be a function of the saliency of aggressive behavior in girls. It is possible that when a girl hits another girl it is rated as aggressive, whereas when a boy hits another boy it may be seen as "typical" behavior.

In order to ensure that such ratings reflect unbiased accounts of behavior, a social problem solving task (SPST-R)

was administered to the children in this study. Although aggressive responses were rarely given to the task (18%), it was found that children rated as highly aggressive by their teachers gave significantly more aggressive solutions than the children rated as low in aggression. This finding suggests that the teacher ratings are consistent with another measure of aggression in children. This result is consistent with Rubin et al.'s, (1983, 1987) findings that the SPST correlates with teacher's rating of aggression on the Hostile/ Aggressive subscale of the Preschool Behavior Questionnaire. Finally, Montpetit (1991), using the same rating scale that was employed in the present study found that teacher ratings of aggression were correlated to classroom observations of negative behavior in kindergarten children. Nonetheless, these measures of aggression correlate only modestly with one another, and conclusions based on teacher ratings may not be replicated when other measures are used.

#### Directions for Future Research

The present study's finding that group day care experience predicts teacher ratings of aggression in girls but not boys has some distinct advantages over past research in this area. It illustrates the importance of a quantitative historical analysis of past day care experience, as opposed to simply comparing children who presently attend day care to a home reared control group.

It also highlights the issue of sex differences in day care experience. Few studies have adequately accounted for sex differences. Future research examining the effects of day care on aggression would benefit from multivariate designs.

Despite the significance of the finding of increased aggression in girls with day care experience, number of months in day care only accounted for a small amount of the predicted aggression ratings. Specifically, only 14% of the variance of aggression ratings was accounted for by day care experience. While this does not minimize the important role that day care history plays in predicting aggression in children, it points to the need to discover variables that may predict aggression in children. Future research might include such variables as child temperament, family stress, and disciplinary practices in their analyses in an attempt to predict a greater amount of the variance in aggression.

In addition to more precise family and child measures, an index of day care quality should be added to the independent variables. As a result of the retrospective nature of the day care history data, a measure of quality could not be obtained. However, several researchers (Howes, 1990; McCartney, 1984; Vandell et al., 1988; Volling et al., 1990) have made an excellent case for the importance of quality in predicting developmental outcomes. White, Jacobs, and Schliecker (1988) found that negative interactions (behaviors including physical and verbal



aggression) on the part of day care children were related to poor quality care. Knowledge of quality of previous care might provide additional information on the prediction of aggression ratings in the present study. Poor quality centers, as well as amount of time spent in care may account for a large proportion of variance in the adjustment outcome measure.

Future research may focus on verifying the possible explanations for the findings offered earlier. Studies are needed to examine the selection factors involved in this sort of research. The idea of increased aggression in girls as a result of imitation or observation of the boys in the group needs further verification. Follow-up studies are required to determine the long-term effects of day care experience on children. Aggressiveness in girls in kindergarten is not a sufficient index of later adjustment. As well, the effects of day care experience in boys may emerge at a later age. A great deal has been written about the effects of aggressive behavior in children. Behaviors that some researchers see as pathological, others see as positive. In the present study, boys were rated as significantly more aggressive than girls. Girls who attend group care are not, on average, more aggressive than boys. Therefore, even though day care experience may be related to higher aggression ratings in girls, at this point, it is premature to conclude that this is a "harmful" effect.

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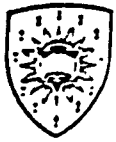
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Appendix A  
Letter of Explanation



Le 10 janvier 1990

Cher(s) parent(s),

Nous vous écrivons dans le but d'obtenir votre collaboration et la participation de votre enfant dans une étude ayant pour but d'examiner la relation entre l'environnement du service de garde en milieu scolaire et le développement des enfants en classe.

Nous nécessitons la participation d'enfants qui sont à la fois à l'école et au service de garde en milieu scolaire ainsi que de certains qui ne sont pas inscrits au service de garde. Toutes les données recueillies sur votre enfant resteront strictement confidentielles.

Nous incluons un feuillet d'information qui vous expliquera plus clairement en quoi consisterait la participation de votre enfant. Si vous avez des questions au sujet de ce projet de recherche, n'hésitez pas à communiquer avec Louise Chartrand, coordinatrice du projet, au 848-2256 ou Dr. Donna White, directrice du projet, au 848-7542. Pour satisfaire aux délais de la recherche, nous apprécierions si vous retourniez le formulaire de participation dans la semaine qui vient en utilisant l'enveloppe pré-affranchie.

Veillez agréer l'expression de nos sentiments les meilleurs.

Louise Chartrand  
Attachée de recherche

Dr. Donna White  
Professeur agrégée

## Feuillelet d'information aux parents

Chaque enfant qui participera au projet rencontrera individuellement une assistante de recherche pour une ou deux sessions de 20 minutes. *Ces sessions prendront place à l'école de votre enfant pendant les heures de classe ou de service de garde.* Pendant ces rencontres, nous étudierons l'expression orale de l'enfant ainsi que son développement social. De plus, nous souhaitons faire des observations pendant les périodes de service de garde. Ces observations de l'enfant ne requièrent que la présence discrète d'une observatrice et sera fixée selon les exigences des éducatrices. Enfin, nous demanderons à l'enseignante et à l'éducatrice, si cela s'applique, de remplir le questionnaire concernant le développement social des enfants de leur groupe qui participent au projet. L'enseignante de la classe de votre enfant et l'éducatrice du service de garde de l'école ont déjà accepté de remplir ce questionnaire si vous le permettez. Toutes les données recueillies resteront strictement confidentielles.

Nous réalisons que la participation d'une école à un tel projet est une charge supplémentaire pour les enseignantes et les éducatrices qui sont déjà très occupées. Toutefois, nous entendons faire tout ce qui est possible pour ne pas déranger leur horaire et faire notre travail sans les importuner. En ce qui concerne votre enfant, notre expérience a toujours été que les enfants appréciaient beaucoup les rencontres avec les chercheuses et se sentaient même privilégiés d'être parmi ceux qui avaient la possibilité de participer au projet. De plus, nous croyons que c'est souvent grâce à ces occasions d'échange entre le milieu scolaire et les chercheurs que des meilleures conditions de vie sont créées et permettent une amélioration des pratiques éducatives.

Ce projet est l'une des parties d'un vaste projet conjoint de recherche dirigé par les chercheuses suivantes: Dr. Raquel Presser de l'Université de Montréal, Dr. Madeleine Baillargeon de l'Université Laval ainsi que Dr. Donna White et Prof. Ellen Jacobs toutes deux de l'Université Concordia. Cette recherche est subventionnée par le Ministère de Santé et Bien-être social du Canada et par le Ministère de l'Éducation du Québec.



**Appendix B**  
**Consent Form**

## Formulaire de participation

J'ai pris connaissance de la description du projet de recherche et j'en comprends les objectifs et la méthodologie. J'accepte que mon enfant \_\_\_\_\_ (nom de l'enfant) participe à ce projet de recherche. J'accepte aussi que vous communiquiez avec son enseignante et/ou son éducatrice pour lui demander de remplir un questionnaire portant sur le développement de mon enfant.

Nom de l'école de l'enfant: \_\_\_\_\_  
 Année: Maternelle \_\_\_ 1<sup>e</sup> \_\_\_ 2<sup>e</sup> \_\_\_  
 Nom de son enseignante: \_\_\_\_\_

Votre enfant fréquente-t-il/elle le service de garde?  
 Oui \_\_\_ Non \_\_\_

Votre nom: \_\_\_\_\_  
 Lien de parenté avec l'enfant: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Nous aimerions pouvoir entrer en contact avec vous pour compléter nos données sur votre famille, les services de garde que vous avez utilisés auparavant et, si cela s'applique, votre choix présent de service de garde. Veuillez, s'il vous plaît, indiquer votre adresse et numéro de téléphone. Nous communiquerons avec vous d'ici peu. Merci.

Adresse: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Téléphone: \_\_\_\_\_

Désirez-vous une copie des résultats lorsqu'ils seront publiés?    oui \_\_\_\_\_    non \_\_\_\_\_

Appendix C  
Teacher Rating Scale

## Echelle Vandell--Classe

**Nom de l'enfant:** \_\_\_\_\_ **Sexe:** \_\_\_\_\_

**Ecole:** \_\_\_\_\_

**Classe:** \_\_\_\_\_

**date:** \_\_\_\_\_

### Instructions:

Les items suivants concernent le comportement de l'enfant en classe. Veuillez faire une croix sur le chiffre qui représente le mieux vos observations et impressions de cet enfant pendant le mois qui vient de s'écouler.

### **Exemple:**

Joue seul	1	2	3	4	5	Joue avec d'autres enfants
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Si cet enfant joue presque toujours seul, faites une croix sur le 1. S'il joue *habituellement* seul, faites une croix sur le 2. S'il joue à peu près la moitié du temps seul et la moitié du temps avec les autres, faites une croix sur le 3. Faites une croix sur le 4, s'il joue *habituellement* avec les autres. Faites une croix sur le 5 s'il joue presque toujours avec d'autres enfants.

### **Veillez compléter les items suivants**

1. taquine les autres enfants	1	2	3	4	5	ne taquine pas les autres enfants
2. attend que ses compagnes/compagnons de classe l'approchent.	1	2	3	4	5	fait elle/lui-même les premiers contacts avec ses compagnons/compagnes de classe.
3. est facilement distraite de son travail.	1	2	3	4	5	se concentre durant les classes.
4. est cachottier/ère en ce qui concerne ses activités.	1	2	3	4	5	est ouverte et honnête avec les autres.
5. est rebelle en classe.	1	2	3	4	5	coopère en classe et est obéissant/e.
6. sourit.	1	2	3	4	5	fait la moue et des grimaces.
7. ne partage pas jeux, jouets et matériaux.	1	2	3	4	5	partage jeux, jouets et matériaux.
8. joue avec les autres enfants	1	2	3	4	5	joue seul/e
9. ne menace pas verbalement les enfants.	1	2	3	4	5	menace verbalement les enfants.
10. est alerte.	1	2	3	4	5	est "dans la lune."
11. n'aide pas les autres enfants.	1	2	3	4	5	aide les autres enfants.
12. résoud lui/elle-même ses conflits.	1	2	3	4	5	demande l'aide de l'enseignante pour résoudre ses conflits.
13. n'écoute pas quand d'autres enfants lui parlent.	1	2	3	4	5	écoute quand les autres enfants lui parlent.
14. est craintif/ve et a peur du nouveau.	1	2	3	4	5	n'est pas craintif/ve et n'a pas peur du nouveau.

15. montre de l'intérêt et participe.	1	2	3	4	5	est apathique et renfermé/e.
16. ne donne pas de coups de poings, de coups de pieds et ne mord pas les autres enfants.	1	2	3	4	5	donne des coups de poings et des coups de pieds et mord les autres enfants.
17. ignore les invitations à jouer des autres enfants.	1	2	3	4	5	accepte les invitations à jouer des autres enfants.
18. est indépendant/e de l'enseignante.	1	2	3	4	5	cherche à être près de l'enseignante.
19. respecte la propriété des autres.	1	2	3	4	5	détruit la propriété des autres.
20. parle aux autres enfants.	1	2	3	4	5	ne parle pas aux autres enfants
21. ne persiste pas lorsqu'il/elle joue des jeux.	1	2	3	4	5	persiste lorsqu'il/elle joue des jeux.
22. est malheureux/se et mécontent/e.	1	2	3	4	5	est content/e et heureux/se.
23. attend son tour pour utiliser du matériel ou des jouets.	1	2	3	4	5	n'attend pas son tour pour utiliser du matériel ou des jouets.
24. se bagarre avec les autres enfants.	1	2	3	4	5	ne se bagarre pas avec les autres enfants
25. ne respecte pas les règlements.	1	2	3	4	5	respecte les règlements.
26. est "porte-panier".	1	2	3	4	5	n'est pas "porte-panier".
27. est extraverti/e	1	2	3	4	5	est introverti/e
28. maîtrise rapidement de nouveaux sujets.	1	2	3	4	5	est lent/e à maîtriser de nouveaux sujets.
29. persiste jusqu'à ce que son travail soit terminé.	1	2	3	4	5	abandonne son travail aussitôt qu'un problème se présente.
30. est très désorganisé/e.	1	2	3	4	5	est très organisé/e.
31. résiste aux changements d'activités.	1	2	3	4	5	passé facilement d'une activité à une autre.
32. est difficile à discipliner.	1	2	3	4	5	est facile à discipliner.
33. déplaît aux autres enfants.	1	2	3	4	5	ne déplaît pas aux autres.
34. a confiance en lui/elle.	1	2	3	4	5	est facilement blessé/e par les remarques des autres.
35. ne dérange pas les autres.	1	2	3	4	5	dérange les autres.
36. se fâche facilement.	1	2	3	4	5	ne se fâche pas facilement.
37. a plusieurs amis/es	1	2	3	4	5	a peu d'amis/es
38. est aimé/e des autres.	1	2	3	4	5	n'est pas aimé/e des autres enfants.
39. n'est pas beaucoup remarqué/e	1	2	3	4	5	est remarqué.
40. les autres l'évitent.	1	2	3	4	5	les autres ne l'évitent pas.
41. accepte les suggestions de l'enseignante.	1	2	3	4	5	rejete les suggestions de l'enseignante.
42. est rejeté des autres enfants.	1	2	3	4	5	est accepté.
43. n'est pas choisi/e comme compagne/compagnon de jeux.	1	2	3	4	5	est souvent choisi/e comme compagne/compagnon de jeux.
44. est invité/e à jouer avec les autres.	1	2	3	4	5	n'est pas invité/e à jouer.

Appendix D  
Social Problem Solving Test - Revised

PROTOCOLE D'ENTREVUE

PROJET: UNE ETUDE DES CONTRAINTES SOCIALES DANS LE  
DEVELOPPEMENT DES HABILETES LUDIQUES SYMBOLIQUES  
ODILE TESSIER & ANNA-BETH DOYLE  
UNIVERSITE CONCORDIA 1989

Adaptation du Social Problem-Solving Test Revised  
Kenneth H. Rubin

The Social Problem-Solving Test Revised (SPST-R) est une adaptation du test de Spivack et Shure (1974): The Preschool Interpersonal Problem Solving (PIPS) test. Il a été conçu pour évaluer à la fois les dimensions quantitatives et qualitatives de solutions destinées à résoudre des problèmes sociaux.

On présente individuellement à chaque enfant une série de situations problématiques dans lesquelles un personnage de l'histoire désire avoir accès à un jouet ou à quelque chose qu'un autre enfant possède, ou rencontrer et devenir ami avec un enfant inconnu. On demande à l'enfant ce que le personnage de l'histoire pourrait faire ou dire dans chacune des situations pour atteindre le but désiré, par exemple, "Que penses-tu que Wayne pourrait faire ou dire pour qu'il puisse jouer sur la balançoire?"; "Qu'est-ce que Lily pourrait faire ou dire pour connaître Nina?" DEUX réponses sont requises pour chaque situation. Par la suite on demande à l'enfant ce qu'il/elle ferait dans une telle situation.

Des dessins présentés sur des cartes 8" par 10" sont employés pour décrire les histoires. Dans chaque circonstance les personnages ont des noms différents pour maintenir l'intérêt de l'enfant tout en assurant une certaine variété. Le nom d'un personnage ne devrait pas être le même que celui de l'enfant qui est testé. L'âge et le sexe des enfants dans chaque histoire devrait être le même que celui de l'enfant testé.

La tâche est présentée comme ceci: "Nous voulons savoir ce que les enfants pensent à propos de certaines choses. J'ai des images et je vais te raconter des histoires à propos de certains enfants. Les histoires ne sont pas tout à fait finies et je voudrais que tu m'aides à les finir. Je veux que tu me dises ce que l'enfant pourrait faire ou dire dans chaque histoire. D'accord? Maintenant, écoute attentivement et regarde bien les dessins."

Présenter les histoires suivantes (au hasard, de préférence):

## HISTOIRES: FILLES

### 1.) Acquisition d'un objet: La balançoire

Le nom de cette FILLE est LAURA et celle-ci est CATHERINE. LAURA ET CATHERINE ont toutes les deux XXX ans, le même âge que toi. CATHERINE est sur la balançoire depuis très longtemps. LAURA voudrait vraiment jouer sur la balançoire.

Que penses-tu que LAURA pourrait dire ou faire pour qu'elle puisse jouer sur la balançoire ?

(S'il n'y a pas de réponse)-Qu'est-ce que LAURA pourrait FAIRE ou DIRE pour avoir la balançoire ?

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS: Qu'est-ce que LAURA pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour avoir la balançoire?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais jouer sur la balançoire?

\*NOTER la réponse\*

### 2.) Amitié: Ecole/garderie.

Le nom de cette FILLE est CAROLE et celle-ci est JULIE. CAROLE et JULIE ont toutes les deux XXX ans, le même âge que toi. CAROLE & JULIE sont dans le même groupe à l'école/garderie, mais c'est le premier jour d'école/garderie pour JULIE. JULIE est une nouvelle fille dans le groupe. CAROLE aimerait connaître JULIE.

Que penses-tu que CAROLE pourrait DIRE ou FAIRE pour connaître JULIE?

(S'il n'y a pas de réponse)-Répéter la question.

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS, Qu'est-ce que CAROLE pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour connaître JULIE?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS pour connaître JULIE?

\*NOTER la réponse\*

### 3.) Acquisition d'un objet: Le tricycle.



Le nom de cete FILLE est MARTINE et le nom de cette FILLE est HELENE. Elles ont toutes les deux XXX ans, le même âge que toi. MARTINE est sur le tricycle depuis très longtemps. HELENE aimerait rouler sur le tricycle.

Que penses-tu que HELENE pourrait dire ou faire pour qu'elle puisse rouler sur le tricycle?

(S'IL N'Y A PAS DE RÉPONSE)-Que penses-tu que HELENE pourrait FAIRE ou DIRE pour avoir le tricycle?

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS, Qu'est-ce qu'HELENE pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour avoir le tricycle?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais rouler sur le tricycle?

\*NOTER la réponse\*

4.) Amitié: Classe de danse.

Le nom de cette fille est FRANCE et celle-ci est CRISTEL. FRANCE et CRISTEL ont toutes les deux XXX ans, le même âge que toi. FRANCE & CRISTEL sont dans la même classe de danse, mais c'est le premier jour de classe de danse pour CRISTEL. CRISTEL est une nouvelle fille dans la classe. FRANCE aimerait mieux connaître CRISTEL.

Que penses-tu que FRANCE pourrait dire ou faire pour connaître CRISTEL?

(S'il n'y a pas de réponse)-Répéter la question.

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS, Qu'est-ce que FRANCE pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour connaître CRISTEL?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais connaître CRISTEL?

\*NOTER la réponse\*

5.) Acquisition d'un objet: Le livre.

Le nom de cette FILLE est FRANCINE et celle-ci est MONIQUE. Les deux filles ont XXX ans, le même âge que toi. FRANCINE a le livre depuis très longtemps. MONIQUE aimerait vraiment regarder le livre.

Que penses-tu que MONIQUE pourrait dire ou faire pour qu'elle puisse regarder le livre?

(S'il n'y a pas de réponse)-Répéter la question.

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS, Qu'est-ce que MONIQUE pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour avoir le livre?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais le livre?

\*NOTER la réponse\*

6.) Amitié: Le même quartier.

Le nom de cette FILLE est LILIANE et celle-ci est NICOLE. LILIANE et NICOLE ont toutes les deux XXX ans, le même âge que toi. LILIANE & NICOLE habitent dans le même quartier, mais c'est le premier jour de NICOLE dans le quartier. LILIANE aimerait mieux connaître NICOLE.

Que penses-tu que LILIANE pourrait dire ou faire pour connaître NICOLE?

(S'il n'y a pas de réponse)-Répéter la question.

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS, Qu'est-ce que LILIANE pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour connaître NICOLE?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais connaître NICOLE?

\*NOTER la réponse\*

## HISTOIRES: GARCONS

## 1.) Acquisition d'un objet: La balançoire.

Le nom de ce GARCON est RICHARD et celui-ci est DANIEL. RICHARD et DANIEL ont tous les deux XXX ans. DANIEL est sur la balançoire depuis très longtemps. RICHARD voudrait vraiment jouer sur la balançoire.

Que penses-tu que RICHARD pourrait dire ou faire pour qu'il puisse jouer sur la balançoire ?

(S'il n'y a pas de réponse)-Qu'est-ce que RICHARD pourrait FAIRE ou DIRE pour avoir la balançoire ?

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS: Qu'est-ce que RICHARD pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour avoir la balançoire?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais jouer sur la balançoire?

\*NOTER la réponse\*

## 2.) âge(même)/Amitié:

Le nom de ce GARCON est JEAN et celui-ci est ANDRE. JEAN et ANDRE ont tous les deux XXX ans, le même âge que toi. JEAN & ANDRE sont dans le même groupe à l'école/garderie, mais c'est le premier jour d'école/garderie pour ANDRE. ANDRE est un nouveau garçon dans le groupe. JEAN aimerait connaître ANDRE.

Que penses-tu que JEAN pourrait DIRE ou FAIRE pour connaître ANDRE?  
(S'il n'y a pas de réponse)-Répéter la question.

\*NOTER la première réponse\*

SI CELA N'A PAS MARCHE, Qu'est-ce que JEAN pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour connaître ANDRE?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS pour connaître ANDRE?

\*NOTER la réponse\*

## 3.) Acquisition d'un objet: Le tricycle.

Le nom de ce GARCON est ROBERT et le nom de cette GARCON est PAUL. ROBERT et PAUL ont tous les deux XXX ans. ROBERT est sur le tricycle depuis très

longtemps. PAUL aimerait rouler sur le tricycle.

Que penses-tu que PAUL pourrait dire ou faire pour qu'il puisse rouler sur le tricycle?

(S'IL N'Y A PAS DE RÉPONSE)-Que penses-tu que PAUL pourrait FAIRE ou DIRE pour avoir le tricycle?

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS: Qu'est-ce que PAUL pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour avoir le tricycle?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais rouler sur le tricycle?

\*NOTER la réponse\*

4.) Amitié: L'équipe.

Le nom de ce GARÇON est RENE et celui-ci est LOUIS. LOUIS et RENE ont tous les deux XXX ans, le même âge que toi. LOUIS & RENE sont dans la même équipe, mais c'est le premier jour dans l'équipe pour RENE. RENE est un nouveau garçon dans l'équipe. LOUIS aimerait mieux connaître RENE.

Que penses-tu que LOUIS pourrait dire ou faire pour connaître RENE?  
(S'il n'y a pas de réponse)-Répéter la question.

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS, Qu'est-ce que LOUIS pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour connaître RENE?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais connaître RENE?

\*NOTER la réponse\*

5.) Acquisition d'un objet: Le livre.

Le nom de ce GARÇON est GILLES et celui-ci est MICHEL. Les deux garçons ont CINQ ans, le même âge que toi. GILLES a le livre depuis très longtemps. MICHEL aimerait vraiment regarder le livre.

Que penses-tu que MICHEL pourrait dire ou faire pour qu'il puisse regarder le livre?

(S'il n'y a pas de réponse)-Répéter la question.

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS, Qu'est-ce que MICHEL pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour avoir le livre?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais le livre?

\*NOTER la réponse\*

6.) Amitié: Le même quartier.

Le nom de ce GARÇON est SIMON et celui-ci est CHRISTIAN. SIMON et CHRISTIAN ont tous les deux XXX ans. SIMON & CHRISTIAN habitent dans le même quartier, mais c'est le premier jour de CHRISTIAN dans le quartier. SIMON aimerait mieux connaître CHRISTIAN.

Que penses-tu que SIMON pourrait dire ou faire pour connaître CHRISTIAN?

(S'il n'y a pas de réponse)-Répéter la question.

\*NOTER la première réponse\*

SI CELA NE MARCHE PAS, Qu'est-ce que SIMON pourrait FAIRE D'AUTRE ou DIRE D'AUTRE pour connaître CHRISTIAN?

\*NOTER la deuxième réponse\*

Que penses-tu que TOI tu FERAIS ou DIRAIS si tu voulais connaître CHRISTIAN?

\*NOTER la réponse

\*\*\*Directives Générales\*\*

**Raconter l'histoire**

1.) -poser des questions pendant l'histoire "Qu'est-ce que (l'enfant dans l'histoire) fait/joue avec?" "Est-ce que (l'enfant dans l'histoire) joue avec (objet) depuis très longtemps?"

2.) Assurez-vous d'une première et deuxième réponse.

**3.) Questions exploratoires**

-questionner quand l'enfant dit "je ne sais pas", quand l'enfant donne une réponse sans solution. "Qu'est-ce que XXX peut faire s'il veut avoir la chance de jouer XXX ou de connaître XXX?" "Est-ce qu'il peut faire quelque chose pour avoir la chance de jouer avec XXX ou de connaître XXX?"

-s'il répète sa première réponse ou répète de façon constante le même type de réponses, expliquer à l'enfant votre raison pour demander une autre réponse. "Tu as dit ça la première fois. Pense à quelque chose de différent que cet enfant peut dire ou faire." ou "Dire à maman et dire au professeur sont tous les deux "dire à quelqu'un." Pense à quelque chose de différent que de "dire à quelqu'un" que (l'enfant dans l'histoire) peut dire ou faire."

-écrivez toutes les réponses de l'enfant, même si la réponse ne correspond pas à une solution ou s'il s'agit de "je ne sais pas."

**N.B.:**

-si l'enfant dit "je ne sais pas" au tout début du test (c'est-à-dire, après la présentation des deux premiers problèmes), il se peut qu'il/elle n'a pas encore pensé au problème hypothétique qui lui est présenté, ou qu'il/elle est timide. Relire l'histoire, en demandant des questions et essayer de faire parler l'enfant, puis répéter les questions. Dans ce cas-ci, ne tenez pas compte du "je ne sais pas", à moins que l'enfant ne puisse vraiment pas trouver une réponse.

-donner beaucoup d'encouragements, d'éloges, et de renforcements positifs.

Appendix E  
Evaluation de Vocabulaire Audio-Visuelle

**EVA I** Echelle de vocabulaire  
audio-visuelle

**FORME 1**  
ADMINISTRATION  
INDIVIDUELLE

Leona M. Dunn, Lyod M. Dunn et Claudia M. Whalen

-----  
**FEUILLE DE REPONSE**

Nom \_\_\_\_\_ Sexe: M F  
          nom de famille                      prénom                      initiale

Langue maternelle: Français Autre (spécifier) \_\_\_\_\_

Adresse des parents \_\_\_\_\_

Téléphone \_\_\_\_\_

Classe \_\_\_\_\_ Ecole \_\_\_\_\_

Enseignant(e) \_\_\_\_\_

Année      Mois      Jour

Date du test (aujourd'hui)      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

Date de naissance      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

Age chronologique      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_

(Ajouter un mois, si ce  
nombre est au delà de 15)

Motif de l'examen: \_\_\_\_\_

Remarques:

Appareil auditif      Lunettes      Droitier      Tremblement

Fait répéter      S'approche des images      Gaucher      Paralysie

Difficulté d'expression      Distraction durant le test      Réserve

Compréhension des consignes      Besoin de directives      Spontané

Autres observations: \_\_\_\_\_

Résultat: \_\_\_\_\_ Durée de l'administration: Début \_\_\_\_:\_\_\_\_ Fin \_\_\_\_:\_\_\_\_ = \_\_\_\_:\_\_\_\_

Examineur(trice) \_\_\_\_\_



## FORME 1 ADMINISTRATION INDIVIDUELLE

### Administration des items d'entraînement

*Pour les sujets de huit ans et moins:*

Utiliser les planches A, B et C, et ne faire passer que le nombre de séries nécessaire à l'obtention de trois bonnes réponses consécutives.

*Pour les sujets de huit ans et plus:*

Commencer à la planche D; n'utiliser que le nombre de séries nécessaire à l'obtention de deux bonnes réponses consécutives.

Planche	Série W	Série X	Série Y	Série Z
A	fourchette(1)	table(2)	poupée(4)	automobile(3)
B	bas(4)	peigne(3)	bouche(1)	homme(2)
C	grimper(2)	marcher(1)	se balancer(3)	boire(4)
D	fermeture(2)	roue(4)	rateau(3)	corde(1)
E	géant(1)	roi(2)	sorcière(4)	mariée(3)

### Règles à suivre pour l'administration individuelle

Commencer à l'item indiqué selon l'âge chronologique du sujet. La base du vocabulaire n'est atteinte que lorsque le sujet a passé six items consécutifs. L'examineur suppose alors que tous les mots qui précèdent sont connus, et tous ces mots reçoivent donc un crédit d'un point.

Terminer l'examen lorsque le sujet a obtenu six erreurs consécutives. On estime alors que le sujet a atteint le plafond de son vocabulaire et on ne crédite aucun item après une suite de six erreurs.

On notera la réponse donnée par le sujet (1, 2, 3 ou 4) sur la feuille de réponse à chacun des items administrés.

Pour chaque erreur, tracer une diagonale en travers du numéro de la planche où l'item a été mal solutionné, tel qu'indiqué ci-dessous:

1 bouteille (1) 3

N°	Mot	Code	Réponse	N°	Mot	Code	Réponse
1	bateau	(2)	_____	43	plonger	(2)	_____
2	autobus	(4)	_____	44	cadre	(1)	_____
3	main	(1)	_____	45	forêt	(3)	_____
4	genou	(4)	_____	46	robinet	(2)	_____
5	lit	(3)	_____	47	décoré	(3)	_____
6	vache	(1)	_____	48	hameçon	(3)	_____
7	tracteur	(2)	_____	49	tige	(3)	_____
8	accident	(2)	_____	50	pédale	(1)	_____
9	lampe	(4)	_____	51	groupe	(3)	_____
10	tambour	(3)	_____	52	vase	(3)	_____
11	hélicoptère	(2)	_____	53	mécanicien	(2)	_____
12	serpent	(4)	_____	54	pelucheux	(4)	_____
13	plume	(1)	_____	55	écorce	(2)	_____
14	clôture	(4)	_____	56	surpris	(4)	_____
15	mesurer	(2)	_____	57	signal	(1)	_____
16	bandage	(4)	_____	58	narine	(1)	_____
17	filet	(2)	_____	59	récompenser	(3)	_____
18	déchirer	(4)	_____	60	cérémonie	(4)	_____
19	flèche	(2)	_____	61	île	(1)	_____
20	coude	(4)	_____	62	balcon	(1)	_____
21	carré	(4)	_____	63	cylindrique	(1)	_____
22	outil	(4)	_____	64	gonflé	(3)	_____
23	pneu	(3)	_____	65	tir à l'arc	(2)	_____
24	enveloppe	(2)	_____	66	tambourin	(1)	_____
25	attacher	(2)	_____	67	déception	(4)	_____
26	penderie	(1)	_____	68	pot	(3)	_____
27	vide	(3)	_____	69	dispute	(1)	_____
28	nid	(1)	_____	70	casserole	(2)	_____
29	dégoutter	(2)	_____	71	isolement	(1)	_____
30	pingouin	(1)	_____	72	ajustable	(2)	_____
31	parachute	(3)	_____	73	repasseuse	(1)	_____
32	flatter	(1)	_____	74	anneau	(4)	_____
33	coudre	(2)	_____	75	ustensile	(2)	_____
34	griffe	(4)	_____	76	parallélogramme	(1)	_____
35	légume	(4)	_____	77	remplir	(1)	_____
36	épaule	(3)	_____	78	tronc	(2)	_____
37	coller	(4)	_____	79	véhicule	(4)	_____
38	voile	(1)	_____	80	reptile	(2)	_____
39	cage	(1)	_____	81	classer	(3)	_____
40	peler	(3)	_____	82	crâne	(4)	_____
41	s'étirer	(1)	_____	83	démolir	(4)	_____
42	livrer	(1)	_____	84	quatuor	(4)	_____

N°	Mot	Code	Réponse	N°	Mot	Code	Réponse
85	infirmes	(1)	_____	127	trajectoire	(1)	_____
86	humain	(2)	_____	128	cachet	(2)	_____
87	vigne	(4)	_____	129	contempler	(2)	_____
88	crampon	(2)	_____	130	vitriifié	(1)	_____
89	communication	(4)	_____	131	péninsule	(4)	_____
90	fragile	(3)	_____	132	arrogant	(2)	_____
91	pyramide	(4)	_____	133	confiance	(3)	_____
92	disséquer	(3)	_____	134	solennel	(3)	_____
93	fatigué	(3)	_____	135	ascension	(3)	_____
94	dromadaire	(2)	_____	136	filtration	(1)	_____
95	globe	(3)	_____	137	rembourrage	(2)	_____
96	enflammé	(1)	_____	138	charogne	(3)	_____
97	piéton	(2)	_____	139	constellation	(4)	_____
98	tranquilité	(3)	_____	140	serres	(3)	_____
99	nautique	(3)	_____	141	boulon	(3)	_____
100	moulinet	(1)	_____	142	côte	(3)	_____
101	transparent	(3)	_____	143	restreindre	(1)	_____
102	arche	(4)	_____	144	spectre	(4)	_____
103	expliquer	(4)	_____	145	belette	(2)	_____
104	félin	(2)	_____	146	abrasif	(1)	_____
105	colère	(3)	_____	147	indigent	(2)	_____
106	losange	(3)	_____	148	inclément	(4)	_____
107	incertitude	(2)	_____	149	incandescent	(4)	_____
108	aride	(4)	_____	150	enjoliver	(2)	_____
109	exténuée	(2)	_____	151	calice	(2)	_____
110	médailon	(1)	_____	152	cornée	(2)	_____
111	charpentier	(2)	_____	153	mercantile	(1)	_____
112	délabré	(4)	_____	154	défense	(1)	_____
113	agrumes	(3)	_____	155	convexe	(1)	_____
114	barricade	(4)	_____	156	brindille	(2)	_____
115	avachi	(2)	_____	157	émacié	(2)	_____
116	coopération	(4)	_____	158	divergence	(4)	_____
117	spatule	(3)	_____	159	larcin	(4)	_____
118	seringue	(2)	_____	160	obélisque	(1)	_____
119	extérieur	(1)	_____	161	tangente	(1)	_____
120	perpendiculaire	(3)	_____	162	émission	(3)	_____
121	sphérique	(2)	_____	163	jubilante	(2)	_____
122	consommer	(4)	_____	164	palan	(1)	_____
123	cascade	(4)	_____	165	entravé	(1)	_____
124	étonné	(3)	_____	166	entomologiste	(3)	_____
125	assailir	(1)	_____	167	déambulation	(2)	_____
126	sommeiller	(3)	_____	168	osculation	(3)	_____

N°	Mot	Code	Réponse
169	dénuement	(3)	_____
170	repoussé	(4)	_____
171	anthropoïde	(3)	_____
172	coupoie	(4)	_____
173	homoncule	(4)	_____
174	urne	(3)	_____
175	bogue	(2)	_____

**Appendix F**  
**Background Information Questionnaire**

**QUESTIONNAIRE D'INFORMATION GÉNÉRALE  
ÉTUDE SUR LES SERVICES DE GARDE**

NOM DE L'ENFANT: \_\_\_\_\_  
 NOM DU PARENT: \_\_\_\_\_  
 NOM DE L'ÉCOLE: \_\_\_\_\_  
 ANNÉE À L'ÉCOLE: \_\_\_\_\_ INTERVIEWER: \_\_\_\_\_  
 DURÉE DE L'ENTREVUE: \_\_\_\_\_ LA DATE: \_\_\_\_\_

*Arrangements de Garde Présents (Narrative account):*

*{lead-in to past experience}*

*est-ce que (l'enfant en question) semble aimer (nom de la garderie) ... Est-ce que vous pouvez me décrire les arrangements précédents ... Est-ce que vous voulez commencer au début ou ...*

*Arrangement de garde pour \_\_\_\_\_ (âge/année scolaire)*

*Arrangement de garde pour \_\_\_\_\_ (âge/année scolaire)*

*Arrangement de garde pour \_\_\_\_\_ (âge/année scolaire)*

*Arrangement de garde pour \_\_\_\_\_ (âge/année scolaire)*

*Arrangement de garde pour \_\_\_\_\_ (âge/année scolaire)*

*Arrangement de garde pour \_\_\_\_\_ (âge/année scolaire)*

Première expérience de groupe:

Age de l'enfant lors de son premier groupe \_\_\_\_\_

Date de naissance de l'enfant? (jour,mois,année) \_\_\_\_\_

La famille:

Maintenant, j'aimerais vous demander quelques questions concernant le reste de la famille.

a. qui d'autre que vous et (nom de l'enfant) habite chez-vous?

Votre conjoint? \_\_\_\_\_

Avez-vous d'autres enfants? \_\_\_\_\_

b. (Si oui) quels sont leur nom et leur âge?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

Autres \_\_\_\_\_

c. est-ce que certains d'entre eux fréquentent la même garderie ou une semblable à celle que (nom de l'enfant) fréquente?

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Information sur SES:

Je ne veux pas prendre beaucoup plus de votre temps, il ne me reste que quelques courtes questions à vous poser:

a. quel est votre emploi? \_\_\_\_\_

b. quelles sont vos tâches principales? \_\_\_\_\_

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c. quel est l'emploi de votre conjoint? \_\_\_\_\_

d. quelles sont ses tâches principales? \_\_\_\_\_

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e. Quel est votre niveau de scolarité (i.e. Quel a été le plus haut niveau que vous avez complété à l'école)?

Primaire?(spécifiez) \_\_\_\_\_

Secondaire?(spécifiez) \_\_\_\_\_

CEGEP/Ecole technique?(spécifiez) \_\_\_\_\_

Université?(spécifiez) \_\_\_\_\_

f. et votre conjoint?

Primaire?(spécifiez) \_\_\_\_\_

Secondaire?(spécifiez) \_\_\_\_\_

CEGEP/Ecole technique?(spécifiez) \_\_\_\_\_

Université?(spécifiez) \_\_\_\_\_

g. Est-ce que le français est la langue la plus souvent parlée à la maison? \_\_\_\_\_

si non, laquelle est-ce? \_\_\_\_\_

h. Quelle est votre langue maternelle? \_\_\_\_\_

i. Quelle est la langue maternelle de votre mari? \_\_\_\_\_

**MERCI ENCORE POUR VOTRE TEMPS. NOUS APPRECIONS BEAUCOUP VOTRE AIDE.**

Acceptez-vous à un autre moment de discuter de votre expérience et de votre satisfaction avec les garderies que vous avez utilisées? \_\_\_\_\_

**CHECKLIST:**

- \_\_\_ Situation en ce moment  
re. type, durée, endroit du groupe
- \_\_\_ Situation antérieure  
re. expériences en groupe et leur durée
- \_\_\_ AGE/ Durée du premier groupe
- \_\_\_ Information sur le reste de la famille
- \_\_\_ Famille de 1 ou 2 parents
- \_\_\_ Occupation/education de la mère
- \_\_\_ Occupation/education du père
- \_\_\_ Langue à la maison

Appendix G  
Bivariate Correlations Between Teacher Ratings of  
Aggression, Family Background, and Preschool  
Variables for Boys and Girls Separately

Bivariate Correlations Between Teacher Ratings of  
Aggression, Family Background Variables, and Preschool  
Variables, for Boys and Girls Separately.

## BOYS (n=55)

	Vocab score	No. Month	No. Change	No. Type	Age of 1st Grp.	Teacher Ratings
SES	.14	-.05	.08	.11	-.00	-.14
Vocab		.12	.26*	.08	-.25	-.25
No. Months			.58**	.57**	-.73**	-.00
No. Changes				.79**	-.47**	.01
No. Types					-.39*	.12
Age of 1st Group Exper.						.13

\*p &lt; .05

\*\*p &lt; .002 after Bonferroni correction

## GIRLS (n=56)

	Vocab score	No. Month	No. Change	No. Type	Age of 1st Grp.	Teacher Ratings
SES	.25	.38*	.37*	.37*	-.32*	-.03
Vocab		.07	.13	-.09	-.04	-.12
No. Months			.39*	.58**	-.76**	.40**
No. Changes				.68**	-.41**	.10
No. Types					-.41**	.29*
Age of 1st Group Exper.						-.25*

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\*p &lt; .05

\*\*p &lt; .002 after Bonferroni correction