AGE AND GENDER DIFFERENCES IN PRESCHOOLER'S SOCIAL-COGNITIVE PLAY: A COMPARISON OF TWO TIME SAMPLING PROCEDURES

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B.Ed. (Honours), Jordanhill College of Education, Glasgow, 1983

A THESIS SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in the Department

of

Physical Education

ACCEPTED
FACULTY OF GRADUATE STUDIES
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DEAN
DATE 1986-09-30

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June 1986

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ABSTRACT

The purpose of this study was to examine age and gender differences in children's play and to investigate whether two different time sampling observation procedures yielded different results with regards play preferences. Thirty three preschool children (18 males, 15 females) ranging in age from 3 years 1 month to 5 years 1 month, participated in the study. Subjects were filmed in the preschool setting over an 11 week filming period Play preferences were coded using the Play Observation Scale (Rubin, 1984), a play scale combining the social play categories defined by Parten (1932), and the cognitive play categories defined by Smilansky (1968) A series of three multivariate analyses of variance (Manova's) were performed on the data. Age differences were observed for both the one minute ($F=17.61$, $p<0.001$) and the five minute ($F=5.48$, $p<0.01$) time sampling procedures. Results for the one minute procedure indicated that the three year olds exhibited significantly more solitary-functional play ($p=.032$), parallel-functional play ($p<.001$), and non-play ($p=.048$) behaviours than the four year olds. The older group exhibited significantly more solitary-dramatic play ($p= 024$), group-functional play ($p=.045$), group-constructive play ($p< 001$), and group-dramatic play ($p< 001$). Results for the five minute procedure indicated that the three year olds engaged in significantly more solitary-functional play ($p=.031$), and parallel-functional play ($p< 001$), while the four year olds engaged in

significantly more group-constructive play (p= 002). Differences in male and female play preferences were observed only for the one minute time sampling procedure (F=3.55, p=.008). Results indicated that males engaged in significantly more solitary-dramatic play (p= 042) than females. Differences between the two time sampling procedures (F=21 54, p< 001), were observed for five of the twelve dependent variables unoccupied behaviour (p= 030), parallel-functional play (p= 012), parallel-dramatic play (p=.003), group-functional play (p= 027), and group-dramatic play (p= 005) It was concluded that the results of the present study supported the contention of Rubin, Maioni, and Hornung (1976) that the higher cognitive forms of solitary play are more mature than the lower cognitive forms of parallel play It was also noted that, while gender differences were not observed for either time sampling procedure (with the exception of solitary dramatic play) males and females did appear to differ with regard to the area of the room in which they played It was recommended that this factor be taken into account when investigating gender differences in children's play preferences Finally, it was also recommended that future research attempting to determine the relative accuracy of either time sampling procedure should focus on the five social-cognitive play categories which yielded significant differences between the two procedures in the present study.

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ACKNOWELEDGEMENTS

I would like to thank my supervisor Dr Bruce L Howe for his guidance and encouragement. My gratitude also to the other committee members, Dr. Robert D Bell and Dr Ronald A. Hoppe, for their insightful suggestions and support Thanks also to Dr Penny A. Parry for acting as external examiner. My gratitude to Ian Maynard for his assistance in establishing interobserver reliability. Finally, a special thanks to the children, staff, and parents of Lakehill preschool for their cooperation, help, and encouragement during the data collection period.

DEDICATION

To Mum and Dad

Chapter I

INTRODUCTION

Although some theorists have argued that play is trivial and developmentally irrelevant (Montessori, 1964; Schlosberg, 1947), others have taken the view that play is instrumental in facilitating the development of a number of social and intellectual skills Authorities have argued that play contributes to the development of language forms (Vygotsky, 1976), coping with anxiety and personal conflicts (Erickson, 1950), the acquisition of tool use (Bruner, 1972), and behaviour conservation and novelty of response (Sutton-Smith, 1984a)

Despite the importance attributed to play in the social and intellectual development of the individual, Rubin, Maioni, and Hornung (1976) have noted that suprisingly few studies since the 1930's have attempted a normative assessment of children's play Rubin, Fein, and Vandenberg (1982) contended that contributing to this dearth in research has been the difficulty in adequately defining play This difficulty led Berlyne (1969) to suggest that it may be more parsimonious to dismiss play as a reasonable behaviour on which to base scientific investigation, however, Vandenberg (1978) argued that confusion surrounding play is not an ipso facto reason for dismissing the activity as an important psychological construct.

The most important of the early work in the normative description of play was carried out by Parten (1932) who investigated the play preferences of young children. This led to the development of a play coding system based on social

participation which influenced most of the subsequent researchers. Later work in the area investigated the cognitive component of children's play using Piaget's (1962) classification system which assessed the degree to which play remains purely sensorimotor or has bearing on thought itself (Rubin, 1984) The Piaget classifications were elaborated into a cognitive play scale by Smilansky (1968)

A combined, two-dimensional classification system, using both the Parten (1932) and Smilansky (1968) play scales was devised by Rubin, Maioni, and Hornung (1976), and was recently revised by Rubin (1984). This scale has been used extensively in recent studies of children's play (Iliya, 1977, Vandenberg, 1981; Pellegrini, 1982, Cheyne & Rubin, 1983; and Rubin & Borwick, 1984).

One area of concern regarding the use of the Rubin (1984) play classification system has been the time sampling procedure adopted. Studies using this scale have tended to adopt a one minute time sampling observation procedure Iliya (1977) criticised this method of data collection stating that the one minute time sampling observation procedure " . failed to capture the real essence of children's play " (p 42). She also stated that it was difficult to assess the overall quality of play using this method since play sequences are usually longer than one minute in duration Similarly, Henniger (1978), using a 30 second time sampling procedure, suggested that when adopting such a procedure, "It was often difficult to observe all the necessary components of the higher levels of play during such a short time interval" (p 62) Iliya (1977) suggested that by lengthening the period of observation future studies could provide a more accurate description of children's play behaviours

Two factors generally recognised as influencing the play preferences of young children are age and gender Studies investigating the social and cognitive dimensions of children's play (Barnes, 1971, Iwanga 1973, Tizard, Philps and Plewis, 1976, and Pellegrini, 1982), have shown age to be an influencing factor with regard to children's play preferences. Similarly, studies by Shure (1963), Sharpe (1973), and Johnson, Ershler and Bell (1980) have shown that there are significant differences in male and female play preferences.

1.1 Purpose

The purpose of this study was twofold to investigate age and gender differences in children's play preferences, and to investigate whether two different time sampling procedures yield different results with regard to play preferences

Specifically, the study focused on the following research questions:

1. Are differences in play preference exhibited between preschool children of differing ages?

2. Are differences in play preference exhibited between male and female preschool children?

3 Do the two time sampling procedures adopted yield different results with regard to children's play preferences?

1.2 Definition of Play

As was previously mentioned a major problem in much of the research investigating the phenomenon of play has been that play has evaded precise definition. Play has been defined as the endless expenditure of exuberant energy (Schiller, 1875), insistent practice without serious intent (Gross, 1901), and as

activities not consciously performed for the sake of any result beyond themselves (Dewey, 1913) More recently, definitions have tended to fall into two categories (Ellis, 1976) Play has been defined in terms of its content (play looks like this), or has been defined in terms of individual's motives for engaging in the activity (people play because of this).

For the purposes of this study, play will be defined in terms of its content Two types of play are defined social and cognitive.

The social components of play emerged from Parten's (1932) study which investigated the age differences in the interactive play behaviour of preschool children Parten (1932) defined the level of social play as the degree to which a child is aware of others while engaged in play

The cognitive components of play are based on Piaget's (1962) classifications Smilansky (1968) elaborated upon these classifications identifying four types of cognitive play.

a) Functional Play·	the child engages in sensory stimulation through simple, repetitive muscular movements.
b) Constructive Play	the child attempts to create or construct something
c) Dramatic Play.	the child dramatises life situations or brings life to inanimate objects
d) Games With Rules	the child accepts prearranged rules and adjusts to them

Chapter II

REVIEW OF RELATED LITERATURE

The following five areas will be covered in the review of literature: the theories attempting to explain the nature of play, the studies emerging from these theories which have attempted to empirically assess the role of play in the social and intellectual development of the child, age and gender differences in children's play behaviours, the development of play coding systems, and finally, the time sampling procedures adopted to investigate children's play preferences.

2.1 Theories of Play

The predominant theories explaining the nature of play have emerged from the developmental/psychoanalytical theories prevalent during the early part of this century Freud, although not writing directly on the topic, did make references to it at various points in his writings and influenced the work of other psychoanalytic theorists such as Waedler (1933) and Erickson (1950), who extended Freud's theories explaining play.

Freud proposed that play enabled the child to re-enact traumatic events and to master them by transposing the individual's predominantly passive role to that of an active one. In normal life, things are done to children over which they exhibit no control or mastery From this situation a desire is created to be grown up and exert control. This accounts for the fact that much of children's play is

characterised by the imitation of adult roles In addition to this, Freud postulated that play allows for the re-enactment of unpleasant and excessive experiences which diminishes their impact on the individual and allows the child to assimilate and come to terms with them Freud (1955) noted;

> It is clear that in their play children repeat everything that has made a great impression on them in real life, and that in doing so they abreact the strength of the impression and, as one might put it, make themselves masters of the situation. (p 16)

Freud then, saw play as an aid to the development of emotional stability and maturity.

Piaget (1962) proposed a developmental sequence of play and argued that the child goes through a series of identifiable stages. In the Piagetian scheme, play is categorised into three general forms sensory motor practice, pretense, and games with rules. This pattern mirrors that of the child's intellectual and emotional development from the egocentric child to the objective adult.

Piaget considered play to be pure assimilation the process of taking in a new experience or new information and adjusting it to fit existing structures (Bee, 1985). Piaget argued that in childhood, assimilation and, therefore, play, has primacy over the process of accommodation Piagetian accommodation is viewed as the modification and adjustment of concepts as a result of assimilation of new experiences or information (Bee, 1985).

This view is not shared by all cognitive psychologists. Vygotsky (1976) argued that play is an active process promoting cognitive development during the preschool years. He considered play to be a direct facilitator of the abstraction process which the child uses later to 'emancipate' means from the constraints of concrete social reality Vygotsky claimed that when children first begin to use

words, the word is perceived as the property of the object rather than as a representation of that object. Symbolic play, claimed Vygotsky, allows for objects to be perceived as symbols and thus facilitates the development of abstraction.

> In play a child deals with things as having meaning. Word meanings replace objects, and thus an emancipation of word from object occurs. (p.547)

Vygotsky claimed that although initially the substitute object e.g., a stick, must resemble the real object, e.g., a horse, the requirement of resemblance is reduced as 'meaning' becomes detached from immediate external stimulation (Fein, 1981).

Berlyne (1960) interpreted play using a model of motivation based on arousal control. The model suggests that behaviour is motivated by aversive states that need to be alleviated and that the individual attempts to maintain an optimal level of arousal. When confronted with novelty or incongruity, an individual responds with curiosity; that is, the individual explores the environment to gather information to be able to assimilate or comprehend the novelty. In doing so the individual reduces the uncertainty. When arousal falls below the optimal level, the organism engages in stimulus seeking activity which Berlyne labelled diversive. Berlyne viewed diversive behaviour as having a stimulus input in that the individual produces a novel event (e.g., by acting on the object), thereby increasing arousal.

Bruner (1972) considered the non-serious nature of play as crucial to development. Bruner saw play as a means of minimising the concern for the consequences of one's behaviour and therefore providing the opportunity to try combinations of behaviour that would, under functional pressure, never be tried.

Bruner claimed that this feature of play is essential in the development of tool use

Sutton-Smith (1984a) suggests that there is a bi-polarity evident in the above mentioned theories of play The Freudian process of abreaction and wish fulfillment, the paradoxical nature of metacommunication (Bateson, 1955), the primacy of assimilation over accommodation (Piaget, 1962), and the interpretation of play according to the arousal control model (Berlyne, 1960) are cited by Sutton-Smith to support this contention. Sutton-Smith (1984b) also argues that theorists have tended to emphasise the positive nature of play to the exclusion of its negative dimension By ignoring the cruelty, violence and aggression evident in play, theorists have tended to 'idealise' it

That theorists have attached an importance to play as a facilitator of social and intellectual development is evident from the above review The next section will critically review studies investigating this premise

2.2 The Role of Play in Social and Intellectual Development

The literature investigating the role of play in the social and intellectual development of the child is extensive Early work by Kohler (1925), Jackson (1942), Birch (1945), and Schiller (1957), investigating the relationship between play and problem solving behaviour in primates, indicated that play did facilitate problem solving For example, Schiller (1957) found that chimpanzees, when allowed to play with sticks, are much more successful later in using those sticks to obtain an out of reach prize.

A similar methodology to that used in the primate research was adopted by Sylva, Bruner and Genoa (1976) to determine the relationship between play and problem solving in preschool children They obtained results consistent with the earlier primate work. Those children allowed to play with materials used in the problem solving task prior to the task being set did as well as children previously shown the solution to the problem and better than children not shown the solution and not allowed to play with the materials

Similar results were obtained by Smith and Dutton (1979) who modified several aspects of the Sylva et al. (1976) study. Specifically, the duration of the treatment conditions were the same and all the subjects were allowed initial familiarisation time with the materials Vandenberg (1981) extended the above studies by examining the effect of age on the relationship between play and problem solving. Subjects were randomly assigned to either a play group or a non-play group. The subjects were then presented with two tasks The first task required the child to clamp together two sticks to obtain a prize. This was the technique adopted in the previous studies The second task involved tying pipe cleaners together to dislodge a sponge stuck in a pipe Results on the first task were consistent with previous research The children in the play group performed better than the non-play group On the second task no differences between the two groups were recorded Vandenberg (1981) hypothesised that both groups of children already had extensive play experiences with pipe cleaners and that this accounted for the lack of differences (Christie and Johnsen, 1984).

Several studies have investigated the relationship between play and I Q scores Johnson (1976), investigating the relationship between play and I Q in low SES

(socioeconomic status) preschoolers, found a low positive correlation between the incidence of dramatic play and several I.Q. measures. Johnson also found that children below the average mental age rarely engaged in dramatic play.

A number of experimental studies have adopted a play training technique to investigate the relationship betwen I.Q. and play (Saltz and Johnson, 1974; Fink, 1976, and Saltz, Dixon and Johnson, 1977). However, it should be noted that play training involves the researcher actively engaging the child in different types of play, therefore, these studies fail to meet the criteria that play should be voluntary, spontaneous, and not subject to coercion (Huizinga, 1955; Piaget, 1962).

Saltz and Johnson (1974) adopting a thematic-fantasy play training technique found that children subject to this type of training showed significant improvements on several measures of intellectual performance when compared to a control group. Similar results were obtained in a follow up study (Saltz, Dixon and Johnson, 1977), which revealed that play training groups showed significant gains in I Q. compared with a story-discussion group and a non-fantasy tutoring group

Fink (1976) investigated the effect of sociodramatic play training on conservation Conservation is the Piagetian term referring to the child's understanding that objects remain the same in fundamental ways, such as weight and number, even when there are external changes in their shape and arrangement (Bee, 1985) Fink (1976) found that no significant gains in either conservation of quantity or conservation of number were found between the group receiving play training and two non-play control groups.

Several studies have investigated the relationship between play and language acquisition. Naturalistic observations by Garvey (1974, 1979) have revealed that to perpetuate sociodramatic play episodes, children have to be able to switch between pretend communications (communications appropriate for their chosen roles), and what Bateson (1955) termed metacommunications (vocalisations and actions communicating behaviour as play). Garvey claimed that children gain valuable language practice from this type of play

Similar claims for sociodramatic play were made by Smilansky (1968) In a study, again involving play training, two groups received sociodramatic play training and another two served as controls Smilansky (1968) reported that the play training groups showed significant gains in several measures of language development including verbal fluency and mean length of utterance compared to the non-play training groups. A replication by Lovinger (1974) of the Smilansky study obtained similar results Children subject to sociodramatic play training showed significant gains in the number of words used during free play and scored higher on the Verbal Expression subtest of the Illinios Test of Psycholinguistic Ability than children in the non-play training condition

Several studies have investigated the relationship between play and empathy (role taking) and social cognition Rubin and Maioni (1975) found a positive correlation between the frequency of children's dramatic play and scores measuring the ability to take the visual perspective of another Similarly, Fink (1976) and Saltz, Dixon and Johnson (1977) reported that children engaging in sociodramatic play increased their cognitive perspective-taking significantly, and scored higher on empathy, as measured by the Borke (1973) test, compared to other non-play groups

In a study by Burns and Brainerd (1979) results revealed that two types of play, constructive and dramatic, resulted in gains in empathy and cognitive perspective-taking Subjects were randomly assigned to two treatment conditions a constructive play condition which involved building structures in cooperation with others, and a dramatic play condition which involved role playing Both groups showed significant gains in the three measures of perspective-taking used to assess empathy and social cognition In interpreting the results Burns and Brainerd (1979) suggested that the adult guidance occuring during all play training procedures acted as a confounding variable and accounted for the gains in the group engaged in constructive play

Research investigating the effects and correlates of play indicate that unstructured activity with objects can lead to gains in divergent thinking and problem solving The research also suggests, though it is far from conclusive, that play can lead to gains in I.Q., measures of logical development (e.g , conservation), language acquisition, and empathy. However, these results have to be viewed with several limitations in mind For example, the problem of adequately defining play as a psychological construct, as well as defining it operationally, has still to be resolved Related to the definitional problem is the difficulty of distinguishing play from other types of behaviour (Rubin, Fein, and Vandenberg, 1982) Nevertheless, the results of the research reviewed above suggest that play, as operationally defined in these studies, does have a positive impact on the social and intellectual development of the child

2.3 Age Differences in Children's Social and Cognitive Play

Research has indicated that age affects children's social and cognitive play Early work by Bott (1928) found that the two year old engages primarily in solitary play, and that cooperative play rarely occurs among 2 to 5 year olds (Iliya, 1977) Parten (1932) found that three year olds play was predominantly solitary while the four year old engaged in primarily parallel play. Parten also observed that the five year olds' play was more interactive and cooperative than the younger group's. In a replication of Parten's study Barnes (1971) obtained similar results. The level of social play was found to correlate positively with age. However, Barnes (1971) also found that children engaged in significantly less associative and cooperative play than Parten observed in her sample Barnes concluded that the Parten study may be too outdated to be considered normative.

More recent studies have indicated that children's social play may not be so clearly hierarchical as the Parten (1932) investigation suggested For example, Rubin, Maioni, and Hornung (1976) proposed that certain types of parallel, rather than solitary play, may be the least mature form of play Rubin et al found that the majority of their sample's solitary play was educative and goal directed in nature. A similar finding was reported by Rubin, Watson and Jambor (1978) This is contrary to Parten's (1932) view that solitary play represents the least mature form of play Rubin and his associates hypothesised that the child playing alone may purposely wish to 'get away from it all' while the child engaged in parallel play may desire the company of others but may not have the neccessary skills to engage in an associative or cooperative manner (Rubin et al , 1976).

A longitudinal study of preschooler's play behaviours by Rubin and Krasnor (1980) supported this hypothesis No significant age differences or changes in the total amount of parallel play (with the exception of parallel-dramatic play) were observed. This finding was consistent with a previous study by Smith (1978). Though both studies reported an increase in group play with age and a decrease in solitary play, no differences or changes were reported for parallel play. Johnson, Ershler and Bell (1980) reported results consistent with the Rubin et al (1976) hypothesis Johnson et al observed that parallel and not solitary play was negatively correlated with age In a follow up study, Johnson and Ershler (1981) investigated preschool children's play preferences over a sixteen month period. An analysis of overall time effects over six half-semester time blocks revealed that social play increased significantly during the sixteen month period. Finally, Pellegrini (1982) observed that play became more social with age, with the exception that older preschoolers tended to engage in more solitary-dramatic play than young children

Age has also been shown to be an influencing factor in several studies analysing the cognitive play of preschool children In all of the studies which have investigated this variable, results have supported Piaget's view that play follows a developmental pattern which mirrors that of the child's cognitive development. children engage in increasingly higher forms of cognitive play with age

Sanders and Harper (1976) and Tizard, Philps and Plewis (1976) observed that 4 year olds engaged in significantly more symbolic (dramatic) play than 3 year olds Rubin, Maioni and Hornung (1976) reported that 4 year olds' play was predominantly functional and constructive in orientation, and that games with

rules were rarely exhibited In a comparison of preschoolers and kindergartners, Rubin, Watson and Jambor (1978) observed that the kindergartners' play was less functional but more dramatic than the preschool group

Johnson, Ershler and Bell (1980) reported age related findings for symbolic play. Results, consistent with previous research, revealed that the older children in a sample of 3 and 4 year olds engaged in more dramatic play than younger children A similar trend was observed in the longitudinal study by Johnson and Ershler (1981). Over a sixteen month period the investigators reported a decrease in constructive play and an increase in dramatic play. Finally, Pellegrini (1982) reported that 4 year olds engaged in significantly more dramatic play than 3 year olds in a cross sectional study of 3 and 4 year olds' play behaviours

2.4 Gender Differences in Children's Social and Cognitive Play

No general trend has emerged from the research investigating gender differences in children's social play. Gender differences were not examined by either Parten (1932) or by Barnes (1971) Shure (1963) observed that gender differences were exhibited with respect to the area of the room in which children played Shure found that females tended to be more cooperative in the doll corner but engaged in more solitary play while at the blocks Boys tended to engage in more associative play in the doll corner. Differences in area preference between males and females were also observed by Sears (1977) and Iliya (1977).

Sharpe (1973), using a social play scale similar to that devised by Parten, observed that during free play, girls engaged in more non-social forms of play

while boys tended to engage in more mature levels of social play These findings are contrary to those of Tizard, Philps and Plewis (1976) who observed a higher level of social play among girls Rubin et al (1976) and Johnson, Ershler and Bell (1980) did not find gender differences in social play. However, Pellegrini (1982) did observe that 3 and 4 year old girls exhibited more non-social play while engaged in functional activities Boys exhibited more non-social play when engaged in dramatic play

Research investigating gender differences in the cognitive play of children has also yielded equivocal results Iwanga (1973) found no significant differences between males and females for the higher forms of cognitive play Although slight differences were reported for the lower levels of cognitive play none reached statistical significance.

In a study of kindergartners' play preferences, Moore, Everston and Brophy (1974) reported that girls engaged in more play which they labelled 'educational' than did boys.

No differences were reported for Smilansky's four cognitive categories by Rubin, and Maioni (1975). Contrary to this, Rubin, Maioni and Hornung (1976) reported that 4 year old girls engaged in significantly more constructive play than boys Finally, no differences between males' and females' social-cognitive play were reported by Ershler and Bell (1980)

2.5 Development of Play Behaviour Scales

Several studies have attempted to develop ways of categorising and coding play. Studies by Parten (1932), Manwell and Mengert (1934), and Smilansky (1968) adopted a procedure which defined criteria distinguishing particular types or aspects of play. Manwell and Mengert, for example, distinguished constructive play, in which materials are rearranged to make a product, from manipulative play, in which there is no finished product

Parten (1932) after preliminary observations of nursery school children, defined six sequential social participation categories·

Unoccupied behaviour· The child is apparently not playing, but occupies himself with watching anything that happens to be of momentary interest. When there is nothing exciting taking place, he plays with his own body, gets on and off chairs, just stands around, follows the teacher, or sits in one spot glancing around the room.

Onlooker. the child spends most of his time watching the other children playing He often talks to the children whom he is observing, asks questions, or gives suggestions, but does not overtly enter into the play himself This type of play differs from the unoccupied in that the onlooker is definately observing particular groups of children rather than anything that happens to be exciting The child stands or sits within speaking distance of the group so that he can hear and see everything that takes place

Solitary independent play the child plays alone and independently with toys that are different from those used by the children within speaking distance and makes no effort to get close to other children. He pursues his own activity without reference to what others are doing

Parallel activity. the child plays independently, but the activity he chooses naturally brings him among other children He plays with toys that are like those which the children around him are using, but he plays with the toy as he sees fit, and does not try to influence or modify the activity of the children near him He plays beside rather than with the other children. There is no attempt to control the coming or going of children in the group

Associative play· the child plays with other children The conversation concerns the common activity, there is a borrowing and loaning of play material, following one another with trains or wagons, mild attempts to control which children may or may not play in the group All the members engage in similar if not identical activity, there is no division of labour, and no organisation of the activity of

several individuals around any material goal or product The children do not subordinate their individual interests to that of the group, instead each individual acts as he wishes By his conversation with the other children one can tell that his interest is primarily in his associations, not in the activity Occasionally, two or three children are engaged in no activity of any duration, but are merely doing whatever happens to draw the attention of any of them

Cooperative or organised supplementary play the child plays in a group that is organised for the purpose of making some material product, or striving to attain some competitive goal, or of dramatising situations of adult and group life, or playing formal games There is a marked sense of belonging or of not belonging to the group The control of the group situation is in the hands of one or two of the members who direct the activity of the others The goal as well as the method of attaining it necessitates a division of labour, taking of different roles by the various group members and organisation of the activity so that the efforts of one child are supplemented by those of another. (Parten, 1932; pp 249-251)

A number of studies have revised Parten's (1932) original classifications (Shure, 1963; Tizard et al. 1976; Rubin, Watson and Jambor, 1976). Shure (1963) added the classification of 'solitary same' to the original Parten scale The addition of this category was an attempt to clarify further the distinction between solitary and parallel play. According to Shure's definition of parallel play, the child is aware of another child's presence by periodically looking at the other child However, a child engaged in solitary-same play behaviour is unaware of another child's presence even though he or she is engaged in the same activity. Shure (1963) defined solitary-same behaviour as follows

> Physically, the children are separate units and they give no overt indication of awareness of another child's presence (p 982)

Tizard et al (1976) conducted a more extensive revision of Parten's social play categories Parten's categories of solitary, parallel, and associative play were retained while the onlooker and unoccupied behaviours were coded as non-play. Parten's highest form of social play was divided into four new categories attempting cooperative play; cooperative play with no division of labour, simple

cooperation with with division of labour; and advanced cooperative play (Tizard, Philps and Plewis, 1976) Rubin, Maioni, and Hornung (1976) suggested that future studies using Parten's (1932) social play scale should label both associative and cooperative play as group play Rubin and his associates had observed that certain activities labelled associative with a preschool sample, were coded as cooperative when kindergartners were observed. The problem of distinguishing between these two types of play behaviours had been noted previously by other researchers (Factor and Frankie, 1975, cited in Rubin, 1977).

As discussed earlier, the classification of play behaviours according to their cognitive structure emanates from the work of Piaget (1962) Smilansky (1968) elaborated on Piaget's original classifications defining four stages of cognitive play.

Functional play. at first the play of the child consists of simple muscular activities based on his need to activate his physical organism He repeats his actions and manipulations, imitates himself, tries new actions, imitates them, repeats them, and so on

Constructive play this form of play introduces the child to creative activity and thereby to the personal joy of creation He moves from functional activity to activity that results in a 'creation' From the sporadic handling of sand or bricks the child moves to building something from these materials that will remain after he has finished playing

Dramatic play the child takes on a role, he pretends to be somebody else While doing this he draws from his first or seconhand experience with the other in different situations He imitates the person, in action and speech, with the aid of real or imagined objects

Games-with-rules here the child has to accept prearranged rules and adjust to them. More important, he learns to control his behaviour, actions and reactions within given limits (Smilansky, 1968, pp 5-7)

The Parten social participation play scale and the Smilansky (1968) cognitive play scale were combined by Rubin, Maioni and Hornung (1976) Rubin and his

associates conducted a series of studies investigating the relationship between the two play scales. Rubin et al found that certain differences observed between the two age groups sampled would have remained hidden had the two scales not been combined. For example, preschool and kindergarten children were found to differ in their overall amounts of solitary and group play. However, the only differences found were for the solitary-functional and group-dramatic categories. Rubin et al observed that preschool children engaged in significantly more of the former behaviour (the least mature form of social play) while kindergartners were more likely to engage in the latter form of behaviour (the more mature form of play) All other forms of solitary and group play were equally represented in the two age groups Finally, the two groups were not found to differ in their overall amount of parallel play. However, preschool children engaged in significantly more parallel-functional and in less parallel-constructive and parallel-dramatic play than the older children. Rubin et al. (1977) conluded that taken together:

> .. the data reveal age differences only for particular forms of solitary, parallel, and group play - a finding which would have remained hidden without the use of a more fine-grained observational scale (p.20)

As already mentioned in the previous section, the combined Parten-Smilansky play scale has been extensively used by researchers investigating the effects and correlates of play

sampling procedure to investigate the impact of divorce on children's play behaviours Similarly, Pellegrini (1980) used twenty minute time samples to assess the relationship between kindergartners play and achievement in prereading, language and writing

Enslein and Fein (1981) assessed the temporal and cross-situational stability of the combined Parten-Smilansky play scale A 6 X 10 minute time sampling procedure was adopted. Cross-situational coefficients were found to be significant at the 01 level for all behaviours Enslein and Fein also reported that temporal coefficients were high (ranging from 70 to 90), when sufficiently large time periods were sampled Enslein and Fein noted that.

> According to the requirements of classical psychometric theory .. . the Parten-Smilansky instrument is reliable when administered in the same situation on more than one occasion, provided that sufficiently large periods are sampled (p 761)

2.7 Summary

A number of studies have attempted a normative assessment of children's play preferences despite difficulties in defining play Specifically, the studies reviewed above have focused on both the social and cognitive dimensions of children's play The results of these studies are summarised as follows.

1 Generally, a developmental sequence in children's social play has emerged from the research Play becomes progressively more social with age, though solitary-constructive and solitary-dramatic play appear to be exceptions to this general rule.

2. The relationship between gender and social play is more equivocal While a number of studies have shown boys to be more social in their play than girls, others have indicated that the opposite is true Studies have also shown no gender differences for social play

3. Studies investigating the relationship between age and the cognitive dimension of children's play have also shown that play follows a developmental pattern. Results indicate that children engage in increasingly higher forms of cognitive play with age

4 Research investigating gender differences in children's cognitive play has yielded equivocal results

Finally, studies investigating the social-cognitive dimensions of children's play have tended to adopt a one minute time sampling observation procedure. However, critics have expressed concern that adoption of this procedure has resulted in an inaccurate assessment of children's play preferences The present study attempts to investigate this concern by adopting two different time sampling procedures to assess the play behaviours of preschool children

Chapter III

METHODOLOGY

3.1 Subjects

Thirty three children (18 males, 15 females) enrolled in morning classes at Lakehill Preschool Centre, Victoria, B C , participated in the study. All of the children enrolled in the two classes, with the exception of one female in the 3 year old group, participated as subjects Parental consent was obtained two weeks prior to the commencement of the study (see Appendix A) The older group consisted of 19 children (9 males, 10 females). The subjects in this group ranged in age from 4 years 2 months to 5 years 1 month, with a mean age of 4 years 5 months The second group of 14 subjects (9 males, 5 females), ranged in age from 3 years 1 month to 3 years 8 months, with a mean age of 3 years 5 months The children were predominantly Caucasian, and from middle-class families

3.2 Setting

The preschool was a co-operative funded by the parents Each group had one professionally trained preschool teacher and two assistants, usually mothers, who helped run the programme The school was run on 'free play' lines, the children having the option to choose the activity in which they engaged The teacher and helpers tended to supervise rather than direct the children's activities.

Equipment and facilities included a playhouse, a painting area, an aquarium, blocks, sandbox and waterbox, various toys, e g , lego, toy cars, aeroplanes, a toy cash register, and dolls. A dressing up area included such items as clothes, a mirror, shoes, hats and jewelry The school was equipped with a quiet reading area which was carpeted and had a number of soft chairs.

3.3 Data Collection

A VHS half inch camera was used to film the subjects during free play Biddle (1967) in discussing the advantages of videotaping stated, "Only the audiovisual recording preserves the richness of the classroom for subsequent behavioural coding" (p.341). Since the school operated on the free play principle, most of the time spent in the preschool was playful in orientation. The school schedule, therefore, was not changed to accommodate the research project.

Two time sampling procedures were adopted for data collection

Procedure 1. each subject was filmed during free play for 1 minute each day, on 15 consecutive schooldays

Procedure 2. each subject was filmed for five, 5 minute periods These periods were recorded every seventh schoolday over an 11 week period (The distribution of schooldays was such that filming took place on different days of the week)

Filming for both procedures commenced January 13th and finished March 27th. For both procedures the order of child observation was randomised daily.

If the child became aware of observation (i e by looking directly at the camera for more than five seconds), filming was stopped and the child was reassigned another filming period To avoid subject reactivity to the camera, a familiarisation period of two full days was adopted.

3.4 Coding Procedure

Rubin's (1984) Play Observation Scale was used to code the subjects' play behaviours (see Appendix B). This is a modified version of Parten's (1932) scale of social participation combined with the four cognitive categories used by Smilansky (1968)

During film playback the target child was observed for ten seconds. The next five seconds were spent coding the predominant activity observed in the previous ten seconds This was done by placing a checkmark in the appropriate column (see Appendix C). The procedure was repeated until the one or five minute play sequence had been coded.

3.5 Reliability of Observations

To calculate the reliability of the observations, a twenty minute play sequence was coded by a 'novice' observer and the researcher The sequence was edited to insure inclusion of all behaviours identified in the Play Observation Scale (Rubin, 1984), with the exception of the games category which was not observed during the eleven week filming period An acceptable agreement coefficient was considered to be 80 and above (Rubin, 1984).

Reliability coefficients were calculated by dividing the number of agreements by the number of observations (agreements plus disagreements) Separate reliabilities were calculated for social play, cognitive play, combined social-cognitive play, non-play, unoccupied, and onlooker behaviours (Henniger, 1977). The overall coefficient for the six categories was 87. The results of the reliability check are summarised in Table 1

Table 1: INTEROBSERVER RELIABILITY COEFFICIENTS

Play Category	Coefficient
OVERALL	.87
Social Play	.84
Cognitive Play	.94
Combined Social-Cognitive Play	.86
Non-Play	.92
Onlooker	.84
Unoccupied	.82

3.6 Dependent Variables

The dependent variables in the study were the social-cognitive dimensions of play identified by Parten (1932) and Smilansky (1968), and combined by Rubin (1984). The non-play categories of exploratory behaviour, reading, transition, conversation, and aggression identified by Rubin (1984) were collapsed under the heading of non-play behaviours. It was noted that coding aggression as non-play may have resulted in an under-representation of negative play behaviours. The problem of attending to positive play dimensions only has been previously noted by Sutton-Smith (1984b)

3.7 Independent Variables

Three independent variables were identified:

1. The age of the subject
2. The gender of the subject.
3. The time sampling procedure adopted.

3.8 Data Analysis

For the purposes of comparison the one and five minute time sampling procedure scores were prorated by dividing the one minute scores by 15 and the five minute scores by 25 Three multivariate analyses of variance (Manova's) were conducted to determine main and interaction effects for each dependent variable (the social-cognitive and non-play categories identified by Rubin, 1984).

Chapter IV

RESULTS

The results from the present study are reported and discussed according to the research questions outlined in Chapter 1 Because three Manovas were computed the possibility of finding significance by chance was positively biased. Caution should therefore be exercised when interpreting the reported alpha levels.

4.1 Age Differences

The Manova (see Table 2), performed on the one minute scores revealed significant multivariate effects for age ($F=17.61$, $p<0.001$), indicating that further analysis of the data was appropriate. Subsequent univariate analyses of variance (Anova's) indicated that the three and four year olds differed significantly with regards to solitary-functional play ($p=0.032$), solitary-dramatic play ($p=0.024$), parallel-functional play ($p<0.001$), group-functional play ($p=0.045$), group-constructive play ($p<0$ 001), group-dramatic play ($p<0$ 001), and non-play behaviours ($p=0$ 048).

The mean frequencies for the one minute time sampling procedure by age are presented in Table 3. The three year olds exhibited significantly more solitary-functional, parallel-functional, and non-play, and significantly less solitary dramatic, group-functional, group-constructive, and group-dramatic play, than the four year old group.

Table 2: MANOVA OF COMBINED SOCIAL-COGNITIVE PLAY BEHAVIOURS FOR THE ONE MINUTE TIME SAMPLING PROCEDURE BY AGE

Source	F	df	P
MANOVA	17 61	12,18	.000
Solitary-Functional	5.11	1,29	.032
Solitary-Dramatic	5.66	1,29	.024
Parallel-Functional	72.38	1,29	.000
Group-Functional	4.37	1,29	.045
Group-Constructive	26.63	1,29	.000
Group-Dramatic	15.62	1,29	.000
Non-Play	4.27	1,29	.048

Table 3: MEAN FREQUENCIES FOR THE COMBINED SOCIAL-COGNITIVE PLAY BEHAVIOURS BY AGE

	Three Year Olds (n=15)				Four Year Olds (n=18)			
	1 min		5 min		1 min		5 min	
PLAY CATEGORY	$\bar{X}$	SE	$\bar{X}$	SE	$\bar{X}$	SE	$\bar{X}$	SE
Sol-Func	.68	.19	.83	.13	.50	.10	.27	.06
Sol-Con	.24	.08	.27	.09	.28	.05	.26	.06
Sol-Dram	.03	.02	.02	.01	.09	.04	.13	.04
Par-Func	1.00	.17	1.43	.13	.28	.04	.12	.03
Par-Con	.41	.05	.34	.12	.31	.07	.46	.08
Par-Dram	.15	.05	.02	.01	.08	02	.04	.04
Group-Func	.31	.08	.52	.09	.59	.10	.76	.08
Group-Con	.03	.02	.03	.02	.56	.09	.32	.08
Group-Dram	.09	.03	.12	.05	.16	.05	.49	.09
Unoccupied	.11	.04	.05	.03	.04	.02	.02	.01
Onlooker	.31	.05	.28	.05	.26	.05	.20	.04
Non-Play	.77	.14	.86	.17	1.21	.14	.90	.07

The Manova (see Table 4), performed on the five minute scores also revealed significant multivariate effects for age (F=5 48, p<0 01) Subsequent univariate analyses of variance indicated that the three and the four year old groups differed significantly with regards to solitary-functional play (p<0 031), parallel-functional play (p<0.001), and group-constructive play (p=0 002)

Examination of the mean scores (see Table 3) reveals that the three year olds engaged in significantly more solitary-functional play and parallel-functional play, and significantly less group-constructive play than the four year old group.

4.2 Gender Differences

The Manova (see Table 5) performed on the one minute scores revealed significant multivariate effects for gender (F=3 55, p=0 008) Subsequent analysis revealed that males and females differed significantly with regard to solitary-dramatic play (p=0 042) Examination of the mean scores (see Table 6) reveals that the males engaged in significantly more solitary-dramatic play than the females

No significant differences between the male and female play behaviours were observed in the five minute time sampling procedure though the F- value was approaching significance (p=0.053).

4.3 Time Sampling Procedure Differences

To calculate differences between the one minute and five minute time sampling procedures, the five minute prorated mean scores were subtracted from the one minute scores for each dependent variable. A Manova was then performed on the obtained mean difference scores.

Table 4: MANOVA OF COMBINED SOCIAL-COGNITIVE PLAY BEHAVIOURS FOR THE FIVE MINUTE TIME SAMPLING PROCEDURE BY AGE

Source	F	df	p
MANOVA	5.48	12,18	.001
Solitary-Functional	5.13	1,29	.031
Parallel-Functional	25.58	1,29	.000
Group-Constructive	11.35	1,29	.002

Table 5: MANOVA OF COMBINED SOCIAL-COGNITIVE PLAY BEHAVIOURS FOR THE ONE MINUTE TIME SAMPLING PROCEDURE BY GENDER

Source	F	df	p
MANOVA	3.55	12,18	.008
Solitary-Dramatic	4.35	1,29	.042

Table 6· MEAN FREQUENCIES FOR THE COMBINED SOCIAL-COGNITIVE PLAY BEHAVIOURS BY GENDER

	Females (n=14)				Males (n=19)			
	1 min		5 min		1 min		5 min	
PLAY CATEGORY	$\bar{X}$	SE	$\bar{X}$	SE	$\bar{X}$	SE	$\bar{X}$	SE
Sol-Func	.52	.10	.71	.12	.37	.20	.57	.11
Sol-Con	.24	.07	.30	.08	.21	.07	.29	.05
Sol-Dram	.12	.04	.08	.03	.03	.02	.03	.02
Par-Func	.67	.15	.97	.17	.58	.14	.32	.15
Par-Con	.39	.06	.16	.04	.50	.08	.54	.12
Par-Dram	.10	.03	.06	.02	.12	.05	.00	.00
Group-Func	.48	.10	.73	.09	.43	.10	.56	.08
Group-Con	.24	.09	.11	.04	.30	.10	.43	.10
Group-Dram	.20	.06	.21	.05	.45	.12	.04	.02
Unoccupied	.08	.03	.04	.02	.06	.03	.02	.01
Onlooker	.29	.05	.24	.05	.27	.05	.23	.05
Non-Play	1.61	.17	1.94	.17	1.98	.17	1.97	.17

The Manova (see Table 7) revealed significant multivariate effects (F=21 54, p<0 001) indicating further analysis of the data was appropriate Subsequent univariate analysis of variance revealed that the one minute time sampling procedure scores were significant y different from the five minute time sampling scores on the following five dependent variables. unoccupied behaviour (p=0 03), parallel-functional play (p=0.012), parallel-dramatic play (p=0 003), group-functional play (p=0 027), and group-dramatic play (p=0 005). The differences between the one and five minute time sampling procedures by age and gender are represented graphically in Appendix D

Table 7: MANOVA OF DIFFERENCES BETWEEN THE ONE MINUTE AND FIVE MINUTE TIME SAMPLING PROCEDURES

Source	F	df	p
MANOVA	21.54	12,18	.000
Unoccupied Behaviour	5.23	1,29	.030
Parallel-Functional	7.16	1,29	.012
Parallel-Dramatic	10.89	1,29	.003
Group-Functional	5.42	1,29	.027
Group-Dramatic	9.17	1,29	.005

Chapter V

DISCUSSION

This chapter includes a discussion of the results as they relate to previous research in the area. The implications of the study are also discussed and recommendations for future research made

5.1 Age Differences

Age differences in play preferences were observed for both the one and the five minute time sampling procedures Results indicated that the three year olds tended to engage in the lower forms of social-cognitive play (for example, solitary-functional and parallel-functional play) while the four year old group engaged in significantly more of the higher forms of social-cognitive play (e.g., group-functional, group-constructive, and group-dramatic play). These results are consistent with previous research which has found a positive correlation between age and the level of social and cognitive play (Parten, 1932, Smilansky, 1968, Barnes, 1971; Rubin, Maioni, and Hornung, 1976; Johnson, Ershler, and Bell, 1980; and Pellegrini, 1982).

Evidence from the study did provide some support for Rubin, Maioni, and Hornung's (1976) contention that only certain types of solitary play (those involving the lower forms of cognitive play) are less mature than parallel play. Results indicated that for the one minute procedure, the four year old group

exhibited significanlty more solitary-dramatic play than did the three year olds. The younger group's play tended to be more functional in orientation. For both procedures the results also indicated that the three year olds engaged in significantly more parallel-functional play than the four year olds Similar findings for solitary and parallel play were reported by Rubin and Krasnor (1980) and Pellegrini (1982)

Specific examples of the differences in solitary and parallel play were frequently observed when the subjects played at the sand and water boxes The older group frequently exchanged toys, engaged in conversation, and generally cooperated during the play episode The younger group, while engaged in the same activity, would tend to exhibit more egocentric behaviour Though the three year olds tended to stay in close proximity to their classmates, they also played independently of each other and rarely engaged in conversation or in any overtly cooperative manner.

The above findings emphasise the advantages of combining the social and cognitive play categories as a nested scale The above age differences in solitary and parallel play would have remained hidden had the social and cognitive play categories been coded separately.

Finally, games-with-rules were not observed during the eleven week filming period. This finding is consistent with other studies investigating the play preferences of preschool children (Rubin and Maioni, 1975, Rubin, et al., 1976; and Iliya, 1977) This finding is also consistent with Piaget's (1962) contention that games with rules rarely appear before children reach school age.

5.2 Gender Differences

Results for both the one and the five minute time sampling procedures indicated that male and female preschoolers tend to be much more similar than dissimilar in their play preferences. Though research investigating gender differences in play preference has yielded equivocal results, the above conclusion is consistent with a number of previous studies (Iwanga, 1973, Rubin and Maioni, 1975; and Rubin and Krasnor, 1980)

A significant difference was observed for solitary-dramatic play, but only for the one minute time sampling procedure. Comparison of mean scores indicated that males engaged in significantly more of this type of play than females. It is difficult to suggest what accounted for this difference as it has not been observed in previous studies Further research is needed to establish whether this is a consistent finding

Although gender differences were not observed for the social and cognitive dimensions of play, males and females did appear to differ in regard to the area of the room in which they played. While engaged in constructive play the males tended to spend more of their time at the building blocks while the females tended to spend more time at the painting and drawing corner. This difference was particularly pronounced in the four year old group Similar findings in area preference were observed by Sears (1977) and Iliya (1977).

Examination of the research investigating 'sex-typed' behaviour in children's free play may help account for these differences Bott (1928), Benjamin (1932), Van Alstyne (1932), Parten (1933), Clark, Wyon, and Richards (1969), and Fagot (1978a, 1978b), all reported that females engage in more art orientated activities,

while males play more often with blocks and toy vehicles (Fein, 1981) Fagot (1973) has suggested that 'sex-typed' play is associated with reinforcement, encouragement, and, especially, parental approval.

The above observations suggest that gender differences in play preferences do exist but that the present social-cognitive play scale is not sensitive to these differences The sensitivity of the scale, when examining gender differences, may be enhanced if both the area in which the play episode occurs and the degree to which the play behaviour is 'sex-typed', are taken into account

5.3 Time Sampling Procedure Differences

Significant differences between the one and the five minute time sampling procedures were observed for five of the twelve dependent variables These results suggest that the criticisms of Iliya (1977) and Henniger (1977) regarding the accuracy of the one minute time sampling procedure in assessing children's free play behaviour, may have some validity However, it should be noted that the present study does not address the question of which time sampling procedure provides the most accurate assessment of free play behaviours.

Though significant differences were observed between the two procedures, the results also indicated that the procedures were not significantly different for seven of the twelve dependent variables In addition, a similar pattern for age and gender differences did emerge For example, for both procedures, four year olds exhibited significantly more of the higher levels of social-cognitive play than the three year olds, while the younger group engaged in significantly more of the lower forms of social cognitive play. Similarly, with the exception of

solitary-dramatic play, no differences were observed between males and females for either the one or the five minute procedures.

These results suggest that for the majority of play behaviours researchers can reasonably use either time sampling procedure with confidence Perhaps more importantly, this study indicates that research attempting to determine the relative accuracy of either procedure in assessing children's play preferences should focus on those variables which yielded significant differences in the present study

REFERENCES

Barnes, K (1971) Preschool play norms: A replication **Developmental Psychology,** 5, 99-103

Bateson, G (1955). A theory of play and fantasy. **Psychiatric Research Reports,** 2, 39-51

Bee, H. (1985). **The developing child (4th ed).** New York· Harper and Row

Benjamin, H (1932) Age and sex differences in toy preferences of young children **Journal of Genetic Psychology,** 41, 417-429

Berlyne, D (1960) **Conflict, arousal and curiosity.** New York: McGraw Hill.

Berlyne, D. (1969). Laughter, humour and play, In G Lindzey & E Aronson (Eds.), **The handbook of social psychology.** Reading Mass · Addison-Wesley.

Biddle, B J (1967) Methods and concepts in classroom research **Review of Education Research,** 37(3), 337-357

Birch, H G (1945) The relation of previous experience to insighful problem-solving **Journal of Comparative Psychology,** 38, 367-383

Borke,H. (1973). Interpersonal perception of young children: Egocentrism or empathy? **Developmental Psychology,** 9, 102-108

Bott, H. (1928). Observation of play activities in a nursery school **Genetic Psychology Monographs,** 4, 44-88

Bruner, J.S (1972) The nature and uses of immaturity. **American Psychologist,** 27, 687-708

Burns, S.M & Brainerd, C.J. (1979) Effects of constructive and dramatic play on perspective taking in very young children **Developmental Psychology,** 15, 512-521

Cheyne, J.A & Rubin, K H (1983) Playful precursors of problem-solving in preschoolers **Developmental Psychology,** 19(4), 577-584

Christie, J F & Johnsen, E P. (1983) The role of play in social intellectual development **Review of Educational Research,** 53(1), 93-115.

Henniger, M L (1978) Free play behaviors of nursery school children in an indoor and outdoor environment (Doctoral dissertation, University of Texas at Austin, 1977) **Dissertation Abstracts International,** 38, 4030A

Huizinga, J (1955). **Homo ludens: A study of the play element in culture.** Boston: Beacon Press

Iliya, R. (1977) **Age and sex differences in free play behaviours of preschool children.** Unpublished Dissertation, University of Texas at Austin

Iwanga, M (1973) Development of interpersonal play structures in three, four, and five year old children **Journal of Research and Development in Education,** 6, 71-82

Jackson, T.A (1942). Use of the stick as a tool by young chimpanzees. **Journal of Comparative Psychology,** 34, 223-235

Johnson, J E. (1976) Relations of divergent thinking and intelligence test scores with social and nonsocial make-believe play of preschool children. **Child Development,** 47, 1200-1203.

Johnson, J E., Ershler, J , & Bell, C (1980) Play behaviour in a discovery-based and a formal education preschool program. **Child Development,** 51, 271-274.

Johnson, J.E & Ershler, J (1981) Developmental trends in preschool play as a function of classroom program and child gender **Child Development,** 52, 995-1004

Kohler, W (1925) **The mentality of apes.** Routledge & Kegan Paul.

Lovinger, S.L (1974) Socio-dramatic play and language development in preschool disadvantaged children **Psychology in the Schools,** 11, 313-320

Manwell, E M & Mengert, I G (1934) A study of the development of two and three year old children with respect their play activities **Child Welfare,** 9, 69-111

Montessori, M. (1964). **The Montessori method.** New York: Shocken

Moore, N.V Everston, C M & Brophy, J E (1974) Solitary play. Some functional reconsiderations **Developmental Psychology,** 10, 830-834

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

Parten, M B. (1933) Social play among preschool children. **Journal of Abnormal Psychology,** 28, 136-147.

Pellegrini, A.D (1980). The relationship between kindergartners' play and achievement in prereading, language, and writing **Psychology in the Schools,** 17, 530-535.

Pellegrini, A D (1982) Development of Preschoolers' social-cognitive play behaviors **Perceptual and Motor skills,** 55, 1109-1110.

Piaget, J (1962) **Play, dreams, and imitation in childhood.** New York: Norton.

Rubin, K H & Maioni, T L (1975) Play preference and its relationship to egocentrism, popularity and classification skills in preschoolers **Merrill-Palmer Quarterly,** 21, 171-179

Rubin, K H , Maioni, T L. & Hornung, M (1976) Free play behaviours in middle and lower class preschoolers: Parten and Piaget revisited **Child Development,** 47, 414-419

Rubin, K H. (1977). Play behaviors of young children **Young Children,** 32, 16-24

Rubin, K H Watson, K S & Jambor, T W (1978). Free-play behaviors in preschool and kindergarten children. **Child Development,** 49, 534-536.

Rubin, K.H. & Krasnor, L R (1980) Changes in the play behaviours of preschoolers A short term longditudinal investigation **Canadian Journal of Behavioural Science,** 12, 278-282.

Rubin, K H., Fein, G G & Vandenberg, B (1982) Play In E M. Heatherington (Ed.), **Carmichael's manual of child psychology: Social development.** New York: John Wiley.

Rubin, K.H. Borwick, D (1984) The communicative skills of children differing with regard to social status. In H E Sypher & J Applegate (Eds), **Understanding interpersonal communication.** California: Sage Press.

Rubin, K H (1984). **The play observation scale (P.O.S.),** Waterloo: University of Waterloo.

Saltz, E., & Johnson, J (1974). Training for thematic-fantasy play in culturally disadvantaged children· Preliminary results **Journal of Experimental Psychology,** 66, 623-630.

Saltz, E , Dixon, D D., & Johnson, J. (1977). Training disadvantaged preschoolers on various fantasy activities Effects on cognitive functioning and impulse control **Child Development,** 48, 367-380.

Sanders, K M., & Harper, L V (1976) Free-play fantasy behaviour in preschool children Relations among gender, age, season, and location. **Child Development,** 47, 1182-1185

Schiller, F. (1875). **Essays, aesthetical and philosophical.** London: George Bell and Sons.

Schiller, P H. (1957) Innate motor action as a basis for learning In S.H Schiller (Ed), **Instinctive behavior.** New York International University Press.

Schlosberg, H (1947) The concept of play. **Psychological Review,** 54, 299-231

Sears, E (1977) **Free-play behavior in three areas of a preschool classroom.** Unpublished master's thesis, University of Texas at Austin.

Sharpe, E M (1973). **An analysis of activities of children during free play in nursery schools.** Unpublished Dissertation, University of Washington

Shure, M E (1963) Psychological ecology of the nursery school. **Child Development,** 34, 979-999.

Smilansky, S (1968) **The effects of sociodramatic play on disadvantaged preschool children.** New York John Wiley.

Smith, P K (1978) A longditudinal study of social participation in preschool children. Solitary and parallel play reexamined **Developmental psychology,** 14, 517-523

Smith, P.K. & Dutton, S. (1979). Play and training in direct and innovative problem solving **Child Development,** 50, 830-836.

Sutton-Smith, B. (1984a). The phenomenon of the bi-polarity in play theories In M L Howell & J McKay (Eds), **Proceedings of the VII commonwealth and international conference on sport, physical education, recreation, and dance (conference 1982).** Brisbane· University of Queensland

Sutton-Smith, B (1984b) The idealisation of play In M L. Howell & J McKay (Eds), **Proceedings of the VII commonwealth and international conference on sport, physical education, recreation, and dance (conference 1982).** Brisbane University of Queensland.

Sylva, K , Bruner, J S , & Genoa, P (1976) The role of play in the problem-solving of children 3-5 years old In J S Bruner, A Jolly, and K. Sylva (Eds), **Play - its role in development and evolution.** New York Basic Books

Tizard, B , Philps, J , & Plewis, I. (1976). Play in pre-school centres - I. Play measures and their relation to age, sex, and I.Q . **Journal of Child Psychology and Psychiatry,** 17, 251-264.

Van Alstyne, D. (1932). **Play behaviour and choice of play materials of preschool children.** Chicago University of Chicago Press

Vandenberg, B. (1978). Play and development from an ethological perspective. **American Psychologist,** 33, 724-738

Vandenberg, B (1981). The role of play in the development of insightful tool using strategies. **Merrill-Palmer Quarterly,** 27, 97-109

Vygotsky, L S. (1976) Play and its role in the mental development of the child In J Bruner, A Jolly, and K Sylva (Eds.), **Play - its role in development and evolution.** New York Basic Books

Waedler, R (1933) The psychoanalytic theory of play **Psychoanalytic Quarterly,** 2, 204-208

Wall, S M & Pickert, S M. (1982). Language and play of preschool children learning English as a second language and native English speakers **Psychological Reports,** 50, 119-124.

Appendix A

PARENTAL CONSENT FORMS

January 7th, 1986

Dear Parent/Guardian

Your son/daughter's preschool has been selected to participate in a research study investigating the play behaviour of preschool children This study has the approval of the Head Teacher of Lakehill Preschool Cooperative and the University of Victoria Human Subjects Committee

The study involves videotaping your child during the school's free play period It is expected that each child participating in the study will be videotaped for a total of 40 minutes, this being spread over a period of eleven weeks. The tapes will only be seen by the researchers for the purpose of analysis, and will be erased immediately afterwards

I would greatly appreciate permission to film your child If you agree to my request, I would be grateful if you could confirm this by completing the form attached.

Should you wish further details concerning this project, please contact myself (721-8388) or my project supervisor, Dr Bruce Howe (721-8383) at the University of Victoria

Yours sincerely,

Ken Murphy

KM/gw
Att

CONSENT FORM

Study Title *Age and Gender Differences in the Play Preferences of Preschool Children*

I understand that the research protocol will involve the videotaping of approximately 40 minutes of free play over an eleven week period

I understand that my son's/daughter's participation as a subject is entirely voluntary

I understand that I may withdraw my consent and terminate my son's/daughter's participation at any time during the investigation

I give consent for my child to participate in this study

_____

Signature of Parent/Guardian

Appendix B

PLAY OBSERVATION SCALE

Behaviour	Goal or Intent
Solitary	to engage in an activity entirely alone at a distance from other children of greater than three feet.
Parallel	to engage in an activity beside (but not with) other children, at a distance of three feet or less
Group	to engage in an activity with another child or children, in which the cognitive goal or purpose is shared amongst all group members
Functional	to experience sensory stimulation through simple, repetitive muscular movements.
Constructive	to create or construct something
Dramatic	to dramatise life situations or bring life to an inanimate object.
Games-With-Rules	to engage in a competitive game-type activity following pre-established rules and limits
Unoccupied	there is a complete lack of goal or focus during this behaviour
Onlooker	to recieve visual information regarding the behaviours and activities of other children
Non-Play Behaviours	these include reading, exploratory behaviour, transition of one activity to another, communicating verbally with others, and aggressive behaviour

Appendix C

PLAY BEHAVIOUR CHECKLIST

Child. _____ Gender. _____ Age. _____

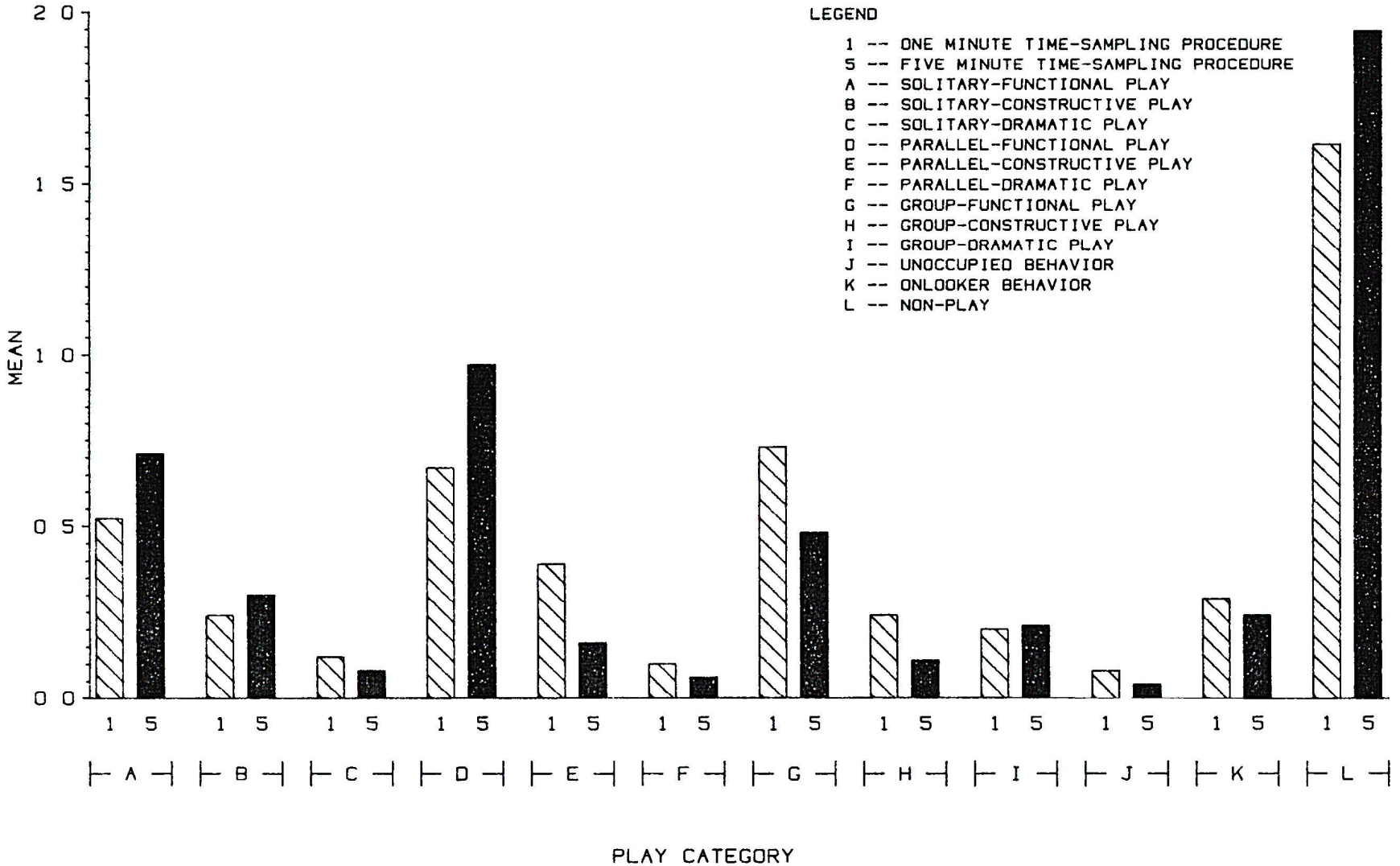
Coun. _____

Play Category	Seconds 10	15	30	45	60
Unoccupied					
Onlooker					
Non-Play					
SOLITARY					
Functional					
Constructive					
Dramatic					
Games					
PARALLEL					
Functional					
Constructive					
Dramatic					
Games					
GROUP					
Functional					
Constructive					
Dramatic					
Games					

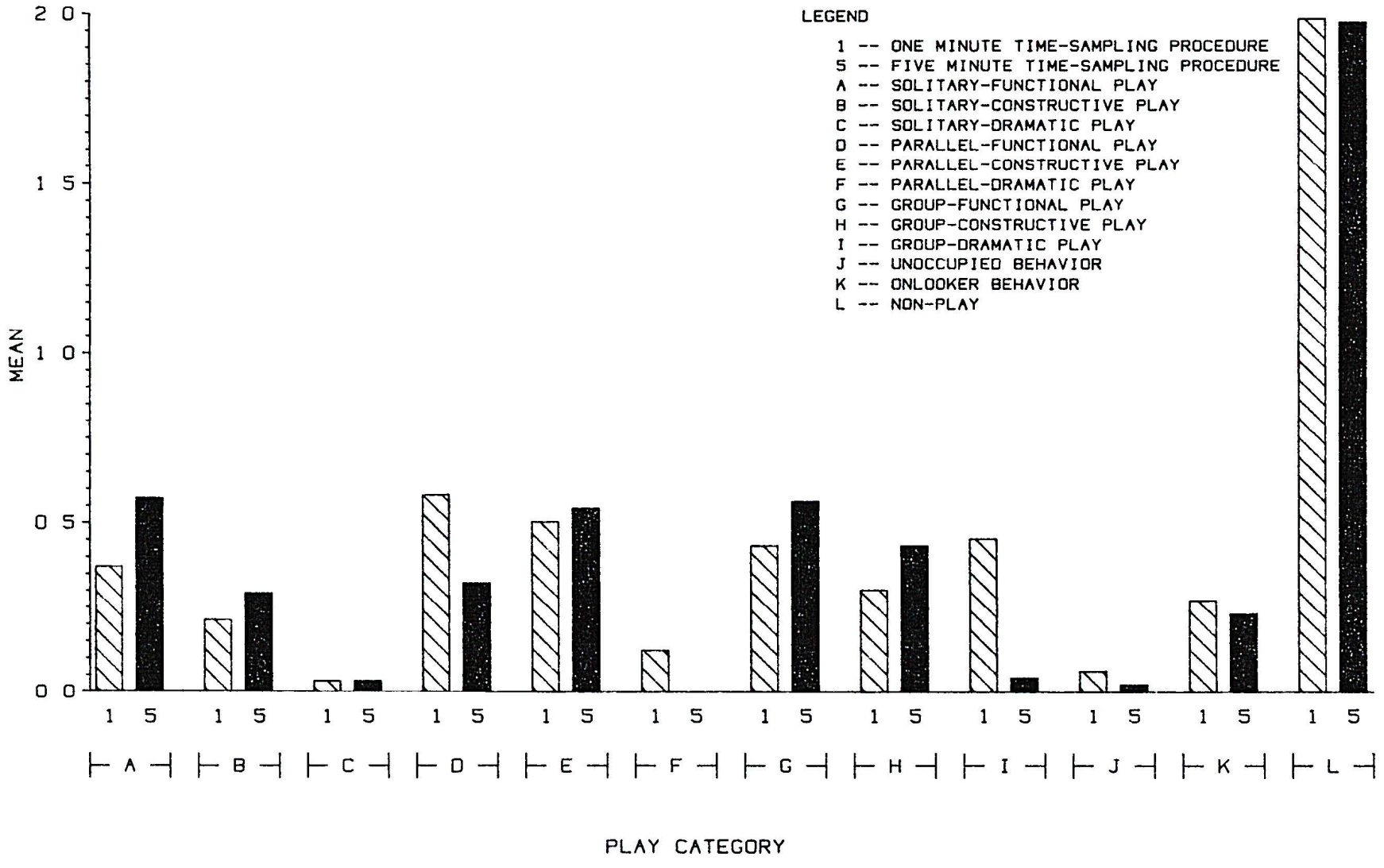
Appendix D

BAR GRAPHS: MEAN PLAY BEHAVIOUR SCORES

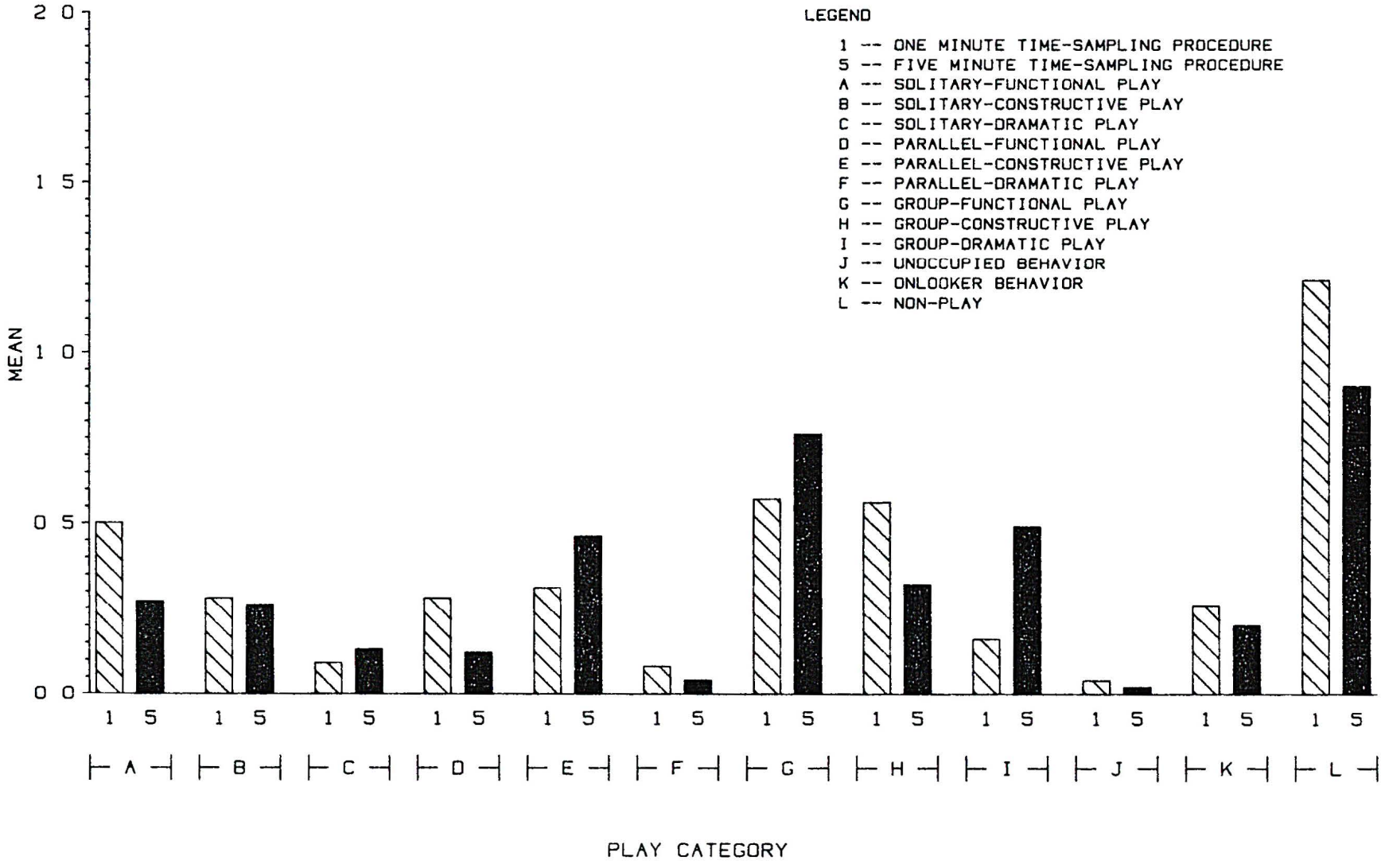
MEAN PLAY BEHAVIOR SCORES FOR MALES



MEAN PLAY BEHAVIOR SCORES FOR FEMALES



MEAN PLAY BEHAVIOR SCORES FOR FOUR YEAR OLD GROUP



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AGE AND GENDER DIFFERENCES IN PRESCHOOLERS SOCIAL COGNITIVE PLAY

A COMPARISON OF TWO TIME SAMPLING PROCEDURES

Author: [redacted]

Kenneth Murphy

June 19th 1986