Symbolic Play and Language: Its Relationship in Late Talkers

Devika, M.R

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MANASAGANGOTHRI

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Certificate

This is to certify that this dissertation entitled **"Symbolic Play and Language: Its Relationship in Late Talkers"** is a bonafide work in part fulfillment for the degree of Master of Science (Speech-Language Pathology) of the student (Registration No. 07SLP006). This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

Mysore

May 2009

Dr.Vijayalakshmi Basavaraj

Director

All India Institute of Speech and Hearing
Manasagangothri, Mysore -570006.

Certificate

This is to certify that this dissertation entitled **"Symbolic Play and Language: Its Relationship in Late Talkers"** has been prepared under my guidance and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

Mysore
May, 2009

Dr. Swapna .N
Guide
Lecturer in speech Pathology
Department of Speech-Language Pathology
All India Institute of Speech and Hearing
Manasagangothri, Mysore -570006.

Declaration

This Dissertation entitled **"Symbolic Play and Language: Its Relationship in Late Talkers"** is the result of my own study and has not been submitted earlier in any other University for the award of any Diploma or Degree.

Mysore

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Dedicated to

Papa, Mama and

Vikki

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The more I learn,

The Better I see how little I know

And how little I know about my own capacity to know

I see that each branch of knowledge is so rich, so complex

One can study a lifetime

And still be a beginner.

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CHAPTER 1

INTRODUCTION

"*What sets humans apart from the rest of the species is our ability to conceptualize symbolically"*

Deacon, (1977)

Human communication involves a rich tapestry of information conveyed through movement, emotional expression and vocalizations. Speech and language are the two components of communication that enables humans to convey information with specificity and detail. Language is the primary means people use to express ideas, learn new information and establish and maintain social relationships. Human language whether written, spoken or signed, is unique in being a symbolic communication system. It involves a system of symbols, which are sounds or things that convey meaning given to them by the users. Originally, the meaning is arbitrarily assigned. For instance, the English word "cat" does not in any way physically resemble the animal it stands for. All symbols have a material form but the meaning cannot be discovered by mere sensory examination of their forms. They are abstractions. Thus language is a social tool, described as a conventional system for representing concepts through the use of arbitrary symbols and rule governed combinations of those symbols.

The first few years of life are the crucial time in which a child acquires their native language. Young children are inherently capable of learning the necessary phonemes, morphemes, syntax and grammar as they mature. They also learn language through everyday interactions with their family and community members. One of the powerful tool or a prime medium for developing, learning language and practicing their new acquisition is play. Infants gain experience in both receptive and expressive language functioning by participating in play sequences. With each new area of play and each fresh activity or toy, a new set of words will be needed to describe the play that is taking place. All forms of play allow a child to practice language, and role play in particular allows children to try out new words and sentence structures. Thus play is the most important context for the development of social communication skills and the natural context for early language learning (Rivkin, 1986; Johnson, Christie & Yaekey, 1987; Rogers & Swayers, 1988; Norris & Hoffman, 1990).

Play typically follows a developmental progression in a sequential pattern from early sensorimotor–exploratory and adaptive interactions with objects to fairly elaborated symbolic play (Casby, 2003). Symbolic/pretend play involves the representational use of objects – pretending one object represents another, for example, using a hairbrush to represent a microphone; pretending to do something or acting out a concept as perceived by the performer (with or without the object present or with an object representing another object) or represent increasingly diverse roles in play (be someone or pretending through other inanimate objects, e.g., has a doll, pretend to feed another doll). Symbolic play skills are highly representational and abstract.

Symbolic play temporally corresponds to aspects of early language and contributes to language development. Children use conventionalized sounds for objects (e.g., sirens, telephones ringing, running water etc.) as a part of pretend play (Garvey, 1977). Children learn the language for problem solving by asking how, why and what as they explore. As they get older language use becomes more frequent during pretend activities (Bretherton, O'Connell, Shore, & Bates, 1984; Fenson, 1984; Sachs, Goldman, & Chaille, 1985). The way language is used during pretend play also changes over time, with increasing use of language for dialogue, for identifying substitute and imaginary props, to express their intentions for play and to negotiate organize, and narrate pretend settings, roles and events (Westby, 1988,1991). It provides children with the opportunity to learn vocabulary, complex language (Ervin-Tripp, 1991), story and an understanding of literal and nonliteral meaning (Garvey, 1977; Howes, Ungerer, & Matheson, 1992).

According to Piaget (1962, 1971) symbolic play and language are both aspects of the "semiotic" ability or symbolic function appearing at the end of the second year which includes imitation with a time lag, a system of gestural symbols, symbolic play, mental imagery, written or drawn picture, etc. Semiotic functioning is what makes it possible for a child to evoke mental images, defer imitations, represent nonpresent realities in pretend play, and use words symbolically. According to Vygotsky (1986), the ability to substitute one object for another in play is a prelude for the transition from 'things as objects of action' to 'things as objects of thought'. The manipulation of symbols seen in symbolic play and representational abilities is related to the development of language (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979).

Several researchers have conducted studies to investigate whether the co-occurrence of these developing abilities (play and language) is evidence of a reciprocal or a cause-effect relationship, that is, are pretense and language parts of an integrated, reciprocally developing system, or does children's experience with pretense have a causal effect on the development of language competencies. In addition, a number of investigators have explored the developmental relationship between symbolic play and language (Lowe, 1975; Bates, Benigni, Bretherton, Camaioni, & Volterra, 1977, 1979; Nicolich, 1977; Bates, Bretherton, Snyder, Shore, & Volterra, 1980; Westby, 1980; Whitakker, 1980; Belsky & Most, 1981; McCune-Nicolich, 1981; Veneziano, 1981; Casby & Ruder, 1983; Terrell, Schwartz, Prelock, & Messick, 1984; Shore, O'Connell, & Bates, 1984; Casby & Della Corte, 1987; Ogura, 1991; Bates, Bretherton, & Snyder, 1988; McCune, 1995; Lifter & Bloom, 1998; Lyytenin, Laakso, 1997 and Kitty, 2000). The general consensus of this line of research has been that early language developments and symbolic play are closely correlated developmentally. The trends in the development of play have their parallels in language. The two domains have been shown to be related in time, content, and structure.

Thus children who demonstrated specific symbolic play skills were more likely to show language milestones that were assumed to require the same underlying representational skills. Although not taken to be causally related, the parallel developments in play and language were explained as deriving from a common underlying capacity for cognitive representation. The findings were felt to support the

claim that language is a distributed system and is integrated with other areas of development.

But the findings concerning the strength of the language-play relations are not, however entirely consistent. Play correlated with certain aspects of language. For example, Largo and Howard (1979) found a significant relationship between young normal children's play and language comprehension, but not expressive language. Shore et al (1991) reported no significant relationship between symbolic play and language, particularly mean length of utterances (MLU) in normal children.

Some studies have also revealed that that the interdependencies between language and symbolic skills change over time. Many researchers found that language–play correlations were strongest in early language development, and that the domains did not develop in parallel as the child matured (Kennedy, Sheridan, Radlinski, & Beeghly, 1991; Ogura 1991; Doswell, Lewis, Boucher, & Sylva, 1994). Kelly & Dale (1989) found play skills to vary significantly among normally developing one and two year old children, depending on whether their language was at the level of no words, single words, non productive syntax, or productive syntax. In addition, however they found evidence that the attainment of particular skills might be relatively more advanced or delayed either in language or play.

Namy and Waxman (1998) found that infants use symbolic gestures and words in identical ways to perform a variety of speech acts early in communication, suggesting that similar symbolic processes may underlie early word acquisition and other symbolic forms such as gestures. However, word-learning was reported to diverge from symbolic abilities as infants begin to use features of language that distinguish it from general symbol use and use words as their primary means of communicating. While there are associations between play and language, words unlike many symbolic forms are fixed in a complex, generative linguistic system. Although they overlap, language advances from the basic symbol to referent mapping and ability to symbolize in a way that other symbolic forms do not.

Considering the close relationship between the processes underlying symbolic play and language, researchers have explored whether the same relationship exists in children with various communication disorders. Studies of children with various disabilities provided evidence of a relationship between language and play. They also investigated whether language deficits in children result from a general underlying cognitive deficit or from language-related problems including symbolic skills (Kennedy et al., 1991).

Research has shown that the children with autism (Tilton & Ottinger, 1964; Ungerer & Sigman, 1981; Doherty & Rosenfeld, 1984); mental retardation (Hulme & Lunzer, 1966; Casby & Ruder, 1983); hearing impairment (Casby & Mc-Cormack, 1985); and Down syndrome (Hill & McCune-Nicolich, 1981) have delays in symbolic play. There is considerable evidence supporting the relationship between play and

language, both expressive and receptive in this population (Lowe & Costello, 1976; Ogura, 1991; Toole & Chiat, 2006; Stanely & Konstantareas, 2007).

The symbolic play abilities of children with language impairment also have been studied by many investigators. These children also do not appear to develop complex imaginative symbolic play or, if they do, it happens very slowly. This reflects their inability to manipulate and sequence ideas and events (Cooper, Moodley, & Reynell, 1978). They may also have difficulty in manipulating materials in a constructive or meaningful way and to engage in high levels of socio-dramatic play because of difficulty in abstract thinking and responding to initiations by others (Brown, 1975).

In addition, a number of studies have also examined the relationship between language and play in slightly older children with language impairment. Lovell, Hoyle, and Siddal (1968) found that older children (4-year-olds) with Specific Language impairment (SLI) spent less time on symbolic play than their normal language peers, but this difference was not significant for younger children with SLI (3-year-olds). Brown, Redmond, Bass, Libergott, and Swope (1975) found that 3-to5-year old children with SLI were less adept at utilizing a collection of non-toy objects (sticks, straws etc.) to enact a scenario (e.g., a birthday party) than their normal language peers. Udwin and Yule (1983) found that 3-to 5 year-olds with SLI had lower scores on the Lowe Symbolic Play Test (Lowe & Costello 1976) and less sophisticated spontaneous play than children with normally expressive language. Terrell, Schwartz, Prelock, & Messick, (1984) found that the play preference of children with language impairment are superior to those of their linguistically matched (and thus younger) typically developing peers. The linguistic and

symbolic play abilities were impaired on a different scale in children with language impairment. In contrast, Roth and Clark (1987) found that play abilities of children with language impairments (5-to 7-year-olds) were less well developed than those of younger language-matched controls (3-year-olds).

The subgroup with an expressive language delay (late talkers) in the age range of 2-3 years is of particular interest in this study. These children have age-adequate receptive language and a significant delay in expressive speech (Rescorla & Schwarts, 1990). The relationship between play and language in this population has been investigated by a few investigators. Thal and Bates (1988) studied gestural imitation in a group of 9 late-talking toddlers. They reported that the language-delayed children performed like language-matched younger controls on single-scheme imitation, but like the normal age-matched controls on multi-scheme imitation. Skarakis-Doyle and Prutting (1988) found that toddlers with SLI-E tended to be delayed, restricted, and repetitive in their play, when compared with toddlers who are developing language normally. The third study was by Lombardino, Stein, Kricos, and Wolf (1986) found that the language impaired and the language-normal children in the age group of 27 and 39 months differed in their play language relationships when the structural metrics of mean length of utterance and mean length of gestures was used. The language impaired children exhibited less number of complex play behaviours and spontaneous play when compared to the language normal children. Finally Rescorla and Goossens (1992) found that the children with expressive SLI in the age group of 2-3 years displayed less decentered play (use of play schemes with a doll or another person), less well-developed sequential play,

and fewer occurrences of symbolic play transformations (use of a neutral object or an absent object to carry out pretending). They observed a parallel between the delayed symbolic play and delayed expressive language.

NEED FOR THE STUDY:

For many years, language pathologists, psychologists and other researchers have tried to discover evidence for the linkage between language and play both in typically developing children and the children with various developmental language disorders. In the west, many studies carried out on typically developing children evidenced mixed results, some which confirmed the fact that there is a correlation between symbolic play and language (McCune-Nicolich, 1981; Ogura 1991; Lyytinen & Laakso**,** 1997; & Kitty, 2000) some others which showed changing or no significant relationship between symbolic play and language, particularly the MLU (Shore O-Connell & Bates, 1991; Kelly & Dale, 1989; Namy & Waxman, 1998). Therefore, the exact nature of this relationship remains unclear. Moreover, the current understanding of the relationship of play and language do not permit a strong conclusion that play is a requisite of language or vice versa but these two abilities do seem to develop hand in hand. There also have been a number of studies that have reported on the symbolic play abilities and its relationship to the language development in children with developmental language disorders. Some of these studies suggest that symbolic play is delayed relative to play of age-mates, but may be more advanced than the play of younger children matched on expressive language, at least in some respects.

Moreover, there are only limited number of studies which investigated the symbolic play behaviours and its relationship to language especially in late talking children (expressive language delay) in the age group of 2-3 years. This is a crucial period in determining whether a child would develop normal speech & language skills or whether the child would be diagnosed as Specific Language Impairment (SLI). Moreover, it is in this period that symbolic play development emerges and flourishes and serves as a good foundation for the development of language skills. The subgroup of expressive language delay is of particular interest because of the sharp contrast they display between two aspects of the same symbolic function, namely receptive and expressive language. This raises the question of whether children with expressive language delay only have normal development of another symbolic function, namely symbolic play. Does the child with Expressive Language Delay (ELD) have symbolic play development commensurate with his/her normal receptive language, or is symbolic play development delayed in parallel with his/her expressive speech?

Further, it is known that manipulations of physical materials or social context can enhance or dampen the quality and quantity of play scripts exhibited by the child (Watson & Fischer, 1977; Largo & Howard, 1979; Jackowitz & Watson, 1980; Fenson & Ramsey, 1981; Bretherton, 1984; Bretherton, O'Connell, Shore, & Bates, 1984). Thus an attempt was made to determine whether the manipulation of the physical contexts (contrasting free play vs. structured play contexts, and varying the level of realism of the toys provided for play) as well as social context (examining spontaneous pretending vs.

pretend play following social mediation in the form of instruction and modeling) would maximize pretend behaviour in children.

Such studies examining the symbolic abilities and its relationship to language development are limited in the Indian context. Considering that play development and styles of play are different across culture, the reported correlation from western literature cannot not be applied directly to the Indian Kannada-speaking children without detailed examination of play and language abilities. Hence there is a pressing need to conduct such studies in such children to investigate their symbolic play patterns and their relationship with language.

Aims of the study

1) To Investigate the differences in symbolic play behaviors of typically developing normal children and late talkers.
2) To assess whether the symbolic play behaviours improve under social mediation strategies such as modeling and instruction.
3) To examine whether symbolic play development corresponds with the receptive and expressive language development in both the groups.

In addition, the age related changes in the symbolic behavior and the toy and play preference between genders in both the groups of children will be examined.

CHAPTER 2

REVIEW OF LITERATURE

'*All work and no play makes Jack a dull boy*' is an age-old and well known saying that has been used widely to highlight the importance of play in the life of any individual. This is true not only during the school going period but right from birth as an infant. Play is universal throughout the animal kingdom -- whether it's a puppy chasing its tail, or young birds swooping through the air or a child cuddling a doll. "A child's job - is to play". Play is considered to be one of the primary needs of the child - as vital as love, food, care and hope. As early as infancy, children immerse themselves in play activities with the purpose of exploring their environment and making sense of the world around them. It starts with sucking a toe or waving our legs and arms in the air and as children grow their play becomes more sophisticated. Thus play is a cherished part of our childhood and our brain's favourite way of learning. It is a human activity that blends cognitive, social, emotional, linguistic, and motor components and combines both action and thought (Tassoni & Hucker, 2005).

Play gives children the opportunity to learn and experience things themselves, which is vital for their development. It is an essential part of growing up and researchers believe it is critical to ensure children reach their full potential in life. It is important to healthy brain development (Shonkoff & Phillips, 2000; Frost, 2006). It is a "brain food" to help brains develop foundation for learning motor and cognitive skills, developing

self-esteem, social skills (e.g., learning to share, take turns, co-operating with each other and working together towards a goal, assert themselves, empathize with others, to negotiate, to resolve conflicts, and to learn self-advocacy skills), emotional skills, language and communication skills and stimulating creativity and imagination (e.g., making a castle in the sand or a car garage out of a shoe box). Play provides the platform for investigating and discovering, testing their theories, spatial relationships, exploring cause and effect, societal roles and family values. Play is integral to the academic environment enhancing children's learning readiness, learning behaviors, and problem-solving skills. The play is of so much importance that there's virtually no area of life about which it can't teach a child something. It is one of the most important ways that can nurture the child's development and learning; across all ages, domains, and cultures. As they master their world, play helps children develop new competencies that lead to enhanced confidence and the resiliency they will need to face future challenges (Erickson, 1985; Hurwitz, 2003).Thus the act of play extends far beyond the recreational factor.

A dictionary definition of the verb 'to play' describes it as 'occupying oneself or amusing oneself in an activity or a game'. It includes the competitive aspect often linked to team games or sport. It suggests an activity undertaken for pleasure especially by children. Piaget in 1962 defined play as any voluntary activity engaged for the enjoyment it gives without consideration of the end result. According to Wardle, 1987 "Play involves a free choice activity that is non-literal, self-motivated, enjoyable and process oriented. Critical to this definition is the non-literal, non-realistic aspect. This means

external aspects of time, use of materials, the environment, rules of the play activity, and roles of the participants are all made up by the children playing. They are based on the child's sense of reality".

Play has number of different features. It is enjoyable, natural, spontaneous, voluntary, initiated and designed by children themselves, and does not require any guidance coaching classes or lessons from adults. Children at play are happily lost in themselves; they are in their own realm of wonder, exploration, and adventure, pulling parents in at times with a frequent “Let’s play, mom!” as an open invitation into that world thus offering an ideal opportunity to the parents to fully engage with their children in play. When parents observe their children in play or join with them in child-driven play, they get a unique opportunity to see the world from their child’s vantage point as the child navigates a world perfectly created just to fit his or her needs which in turn helps in building enduring relationships and effective communication between the parent and the child (Cohn, 1990; Henry, 1990; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004).

Developmental framework of play

Play develops along ordinal levels that range from early sensorimotor–exploratory and adaptive interactions with objects to fairly elaborated scripted sequences of events. As children develop, their play becomes more complex and flexible as well as more generalized and symbolic. They become able to represent increasingly diverse roles in

play, and are capable of sustaining thematic play in the absence of concrete play materials/props. Play typically follows a developmental progression in a sequential pattern: simple to complex, self to others, concrete to abstract. When new types of play develop, ‘older’ types of play do not disappear, although they decrease in frequency.

Many researchers have proposed the development of play. Nicolich (1977) proposed the following stages in the development of play.

Table 1:

Stages of play development by Nicolich (1977) and Katz (2001)

Age range	Description and examples
6-8 months	Non meaningful manipulation of objects e.g., mouthing, banging, dropping
8-12 months	Purposeful exploration of objects: Child shows knowledge of appropriate use of objects (e.g., bangs toy drum)
12-18 months	Self-related symbolic play: Play behaviour mimics daily activities involving only the child and uses real objects (e.g., child uses spoon to feed a doll)
18-24 months	Other related play: Child's symbolic play behaviours begin to involve other recipients or actions, but still uses only real objects (e.g., child uses spoon to feed a doll) at the end of this child begins to combine action sequences, performing single action on variety of different recipients (feeding doll, feeding mommy finally feeding self) and a series of actions on a single recipient (feeding the doll, putting it to bed and kissing it goodnight)
24-30 months	Planned symbolic play: 1) child uses one object to represent others 2) evidence of planning prior to engaging in the play sequence (child verbalizes or searches for props before initiating play schemas) 3) use of a doll or other object as an agent of the play action (the doll feeds the baby)
3-5 years	Socio dramatic play: Pretend play sequence involve atleast two or more children who 1) select a theme e.g., going to a doctor 2) assign roles, e.g., nurse, patient, doctor and 3) use language appropriate to different roles (at this level language begins to become a integral part of symbolic play)

Patterson and Westby, (1998) delineated the various stages in the symbolic play development which are as follows:

Table 2:

Symbolic Play Development (Patterson and Westby, 1998)

Age	Props	Themes	Organization	Roles	Language during play
18 months	Uses one object at a time	Familiar activities in which child is active participant	Short, isolated pretend actions	Autosymbolic pretend	Language used to get and maintain toys and seek assistance
22 months	Uses two objects at a time	Familiar activities that care givers do	Combines two related toys or performs actions on two people	Acts on dolls and others	Occasional comment on toy or action
24 months	Uses several objects		Multischeme combinations of steps		Talks to doll briefly: describes doll's actions
30 months		Less frequently experienced or traumatic experiences		Emerging limited doll actions	Talks to doll and comments on doll's actions increases
3 years			Sequence of multischeme events, brief role play with peers	Talks to doll in response to doll's actions	Comment on what they have done or what they will do next
4years	Imaginary props	Familiar fantasy things	Planned play events.	Handles two or more dolls in complementary roles	Uses language to plan and narrate the story line

Casby (2003) proposed the following major stages in the development of play.

1. Sensorimotor-Exploratory play/Non functional play (2-4 mths): Sensorimotor–exploratory play consists of the physical manipulation and inspection of objects, such as grasping, holding, mouthing, licking, banging, and rubbing, by infants. This is the attempt of an infant to assimilate the objects into his or her existing cognitive structures while also attempting to adapt to the world by making accommodations to the objects. In further Piagetian terms, it can be viewed as the infant's demonstration of secondary circular reactions—that is, the repetition of interesting events without regard to the social– conventional function of the object. Sensorimotor–exploratory play emerges and is prevalent around the ages of 2 to 4 months, extending to the age of approximately 10 to 12 months (Sinclair, 1970; Lezine, 1973; Rosenblatt, 1977). Thereafter, it declines and is replaced by other, more advanced forms of play. Piaget (1951) noted that with the development of sensorimotor Stage IV—coordination of secondary circular reactions—the child's sensorimotor–exploratory actions develop into something else with the emergence of the child's relating of objects one to another. In the domain of play, that "something else" is relational–nonfunctional play.

2. Relational-Nonfunctional play (5-10 mths): In relational–nonfunctional play, infants and toddlers begin to relate objects one to another, albeit in a nonfunctional or nonconventional manner that is void of social–conventional knowledge or typical use of the objects. This is very similar to what Piaget observed as the coordination of secondary circular reactions during sensorimotor Stage IV. It consists of the child stacking, bumping, nesting, touching, and pushing objects together. During the earlier level of

sensorimotor– exploratory play, the child's actions were performed on single objects. A notable change with the emergence of relational– nonfunctional play is that now the child is actively engaging and acting on more than a single object at a time. A number of investigators have reliably identified such a level of play as emerging around the ages of 5 to 10 months and being prevalent during the age period of approximately 6 months through 12 months (Sinclair, 1970; Fenson, Kagan, Kearsley, & Zelazo, 1976; Rosenblatt, 1977).

3. Functional-Conventional/Instrumental play (10-12 mths): When children demonstrate functional–conventional play, they begin using objects in play in manner consistent with these objects' social–conventional typical uses (e.g., holding a doll, stirring a spoon in a bowl, pushing a car, kissing a teddy bear etc.). This is known as typical, conventional, social, and functional use of objects in context. Functional play relates to conceptual knowledge of the purpose of everyday objects (e.g., that a hat is for wearing). Piaget (1951) viewed this level of play as one in which the child defines objects by their use through ritualized–conventionalized schemes and through recognition of objects. At this level, the child reproduces typical actions with familiar objects; that is, the child reproduces functional, although fixed, recognized actions on objects with little sense of representation or pretense activity. This level of play is viewed as presymbolic and a demonstration of the child's knowledge of the social–conventional use of familiar objects rather than symbolic behavior per se (Rocissano, 1982, Casby, 1991a; McCune, 1993). According to Bates, Benigni, Bretherton, Camaioni, & Volterra, (1979), this level of play may be viewed as *presentational* rather than *representational* in that the child is

capable of “presenting” highly specific and contextually supported actions but is as yet incapable of “representing” such actions within less similar contexts. Zukow (1984) and Casby (1991b) also cautioned that there is little that is symbolic in the play of children at this level.

These three types are the non symbolic form of play which is followed by the symbolic type of play.

4. Symbolic play/pretend play/dramatic play (12-30 mths): Symbolic play also develops in an orderly and predictable manner (Piaget, 1962; McCune-Nicolich, 1977, Watson & Fischer, 1977; Bretherton, 1984). Reviews of research on the early development of symbolic play suggests that symbolic play begins to emerge near the beginning of the child's second year and continues to play an important role in his or her development throughout the preschool years (Gowen, 1995). Symbolic play represents a critical step in passing from the sensori-motor intelligence of infancy to the symbolic thinking of adulthood. The child has to learn that one thing is represented by another. Such learning can take place only when the child is capable of mental representation. Some researchers believe that symbolic play is an early demonstration of young children’s developing mental representation and symbolic capacity and functioning and as such, it is a positive developmental characteristic of the preoperational period of cognitive development, traditionally defined by its lack of concrete operational abilities on the part of the child (Piaget, 1951; Flavell, 1963; Werner & Kaplan, 1963; Sinclair, 1970; Nicolich, 1977; Brainerd, 1978; McCune-Nicolich, 1981; Casby, 2003).

For play to be considered symbolic, it must possess aspects of decontexualization, decentration, and symbolization (Casby, 1991a). The determination of the symbolic nature of a child's play is based upon the triangulation of these three aspects, which generally are missing from the previously specified level of functional–conventional play. *Decontextualization* is the dissociation of actions from typical settings and contexts. It is evident in the child's representation of actions removed in time and/or space from their routine environs. An example would be the child pretending to sleep when it is neither nap time nor nighttime.

Decentration is a child's moving of actions away from his or her self. In Piagetian psychology, it is viewed as the decrease in egocentrism as development proceeds (Brainerd, 1978). Decentration involves young children performing actions they do not typically perform by themselves (e.g., writing a cheque, feeding a baby, drinking tea etc.). Decentration is also apparent in children's engagement of other agents in their play. This is reflected in the change-in-agent aspect of the agent component of symbolic play, where children cause a doll or teddy bear to perform actions.

Symbolization involves the active, purposeful use of symbols—something standing in for and representing something else. There is a "signifier" representing a "signified." Nascent symbolization is apparent in children's use of other agents in their play schemes (e.g., pretending to have a teddy bear drink tea). It becomes more apparent as children attribute more animacy to another (i.e., surrogate) agent. It is clearly apparent when young children use substitute objects or instruments in

play schemes (e.g., using a block for a cup or for a comb, using a piece of paper for a doll blanket, using a hairbrush to represent a microphone).

These different types of symbolic play are related to the major functional components of symbolic play—the *agent*, the *instrument*, and the *scheme* components (Casby, 1991a, 1991b).

Components of Symbolic Play

In addition to the criterial aspects of symbolic play, three critical components can be distilled from the literature on play (Piaget, 1951; Sinclair, 1970; Lezine, 1973; Lowe, 1975; Fenson et al., 1976; Nicolich, 1977; Rosenblatt, 1977; Watson & Fischer, 1977, 1980; Casby & Ruder, 1983; Corrigan, 1987; Casby, 1991a, 1991b). As noted previously, they are the agent, the instrument, and the scheme. Each of these components is seen as important to symbolic play in that each is a readily identifiable and integral aspect of symbolic play that undergoes changes that are reflective of children's developmental progression in symbolic play.

The agent component: The agent component of symbolic play is the animate or pretend-animate being that is involved in the instigation of the play actions. It can be broken down into three ordinal levels—self-as-agent, passive-other-agent, and active-other-agent (Watson & Fischer, 1977, 1980; Casby, 1991b). In self-as-agent symbolic play, the child is the instigating agent of the play actions, as in pretending

to pour and drink juice in a pretend snack script or pretending to speak on a play telephone. In passive-other-agent symbolic play, the child uses a substitute agent but does not assign it animism. For example, the child might hold the play telephone to a doll's ear but not have the doll "pretend" to speak. With active-other-agent symbolic play, the child does assign animism to the substitute agent, such as having a doll pretend to walk, talk, and eat. Interestingly, the changing agent component of symbolic play emanates from the Piagetian preoperational cognitive content of animism—the attribution of life to inanimate objects (Brainerd, 1978).

The instrument component: The instrument in symbolic play is the object that the agent of the play uses in carrying out the play actions. It is integral to the play act. For example, instruments in a play snack-time script would be the cups, plates, and pitcher; those in a "clean and dress the baby" script would be the washcloth, comb/brush, and so forth. As with the agent component, research on the development of children's symbolic play has demonstrated that there are different ordinal levels of the instrument component in children's symbolic play other than the realistic instruments themselves (Overton & Jackson, 1973; Fein, 1975; Elder & Pederson, 1978; Jackowitz & Watson, 1980; Casby & Ruder, 1983 Casby & Della Corte, 1987; Casby, 1991b). They are the real or realistic toy objects, substitute objects that have no relationship to the real instrument, and imaginary objects that fill in for the absent real instrument. The changing instrument component of symbolic play is an aspect of the Piagetian preoperational cognitive content of

identity. The cognitive content of identity maintains the inherent, invariable, and defining properties of a concept in the face of transformations (Brainerd, 1978).

The scheme component: In Piagetian developmental psychology, the term *scheme* refers to observable actions that infants, toddlers, or children perform. For example, during the sensorimotor period of development, there are occurrences of the sensorimotor action schemes of reaching, grasping, holding, and so forth. When engaged in play, children perform various play schemes or play actions, for example, pretending to feed a doll, pretending to drink from a block, pretending to have a doll cry. The scheme component of symbolic play concerns: (a) children's production of single play schemes, (b) the combining/sequencing of multiple schemes, and (c) the relative degree of complexity and apparent planning involved in the sequencing of play schemes (Nicolich, 1977; McCune-Nicolich, 1981; Casby, 1991b; McCune, 1995)

Importance of symbolic play

Both Piaget (1962) and Vygotsky (1978) acknowledged the significance of symbolic play for normal development. According to Vygotsky, play is not parallel to development but rather a central driving force to its unfurling. It provides the children with a creative outlet, where they have the power to create a fantasy world or make decisions affecting what and whom they play with. It bridges the gap between real events in the changing world and imagination in one's head. It increases problem solving abilities, encourages spontaneity and promotes intellectual growth (Hirsch-Pasek & Golinkoff, 2003). Symbolic play also becomes a foundation for acquiring and practicing

joint attention skills (Tomasello, 1995) and provides evidence to a child's ability to organize their behavior using an internal set of rules and cognitive relationships.

Symbolic play also temporally corresponds to aspects of early language and contributes to language development. Children use conventionalized sounds for objects (e.g., sirens, telephones ringing, running water etc.) as a part of pretend play (Garvey, 1977). Children learn the language for problem solving by asking how, why and what as they explore. As children get older language use becomes more frequent during pretend activities (Bretherton, O'Connell, Shore, & Bates, 1984; Fenson, 1984; Sachs, Goldman, & Chaille, 1985). The way language is used during pretend play also changes over time, with increasing use of language for dialogue, for identifying substitute and imaginary props, to express their intentions for play and to negotiate organize, and narrate pretend settings, roles and events (Westby, 1988,1991). It provides children with the opportunity to learn vocabulary, complex language (Ervin-Tripp, 1991), story comprehension (Pellegrini, 1985) and an understanding of literal and nonliteral meaning (Garvey, 1977; Howes, Ungerer, & Matheson, 1992).

Thus the development of play demonstrates a strong relationship with the constructs of the sensorimotor and preoperational periods of cognitive development, as well as with early communication and language (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1977; Casby & Della Corte, 1987; McCune, 1995; Lifter & Bloom, 1998). Symbolic play therefore engages many areas of the brain because it involves cognition, language, and sensorimotor actions, and it may promote the development of dense synaptic connections (Bergen & Coscia, 2001).

Effect of social/physical context on symbolic play

The symbolic form of play provides a window on the child's developing knowledge of scripts or event representations. Scripts specify, the actors, actions, and props needed to enact ordered sequential scenarios. This suggests that 'pretenders' (children) have mental representational abilities. If event knowledge is uncertain, external support may be needed to sustain thematic play. This may take the form of objects as cues to call to a particular script structure, or social mediation to trigger enactment of a familiar but not fully accessible script.

It is known that manipulations of physical materials can enhance or dampen the quality and quantity of play scripts exhibited by the child. For example, McCune-Nicolich and Fenson (1984) demonstrated that the presentation of organized toy sets that suggest a particular script appears to facilitate the production of symbolic play sequences. In addition, prototypical objects are preferred by infants presented with a modeled play scheme; they are less willing and/or able to imitate schemes modeled with less realistic objects (Largo & Howard, 1979; Jackowitz & Watson, 1980; Bretherton, 1984; Bretherton, O'Connell, Shore, & Bates, 1984). Moreover when first, third, and fifth grade children played with representational objects such as cars and figures compared to children playing with transformational objects (a vehicle changes into a robot), those children who played with the representational objects displayed more social play and symbolic play (Bagley & Chaille, 1996). Low structured toys such as dress-up materials, toy doctor kits, blocks, stuffed animals, and puppets lead to more imaginative play than

structured objects such as crayon, chalk, and puzzles that are more conducive to nonpretend play (Singer & Singer, 2001).

Manipulating the social context also brings about a variation in symbolic play. Modeling consistently leads to an increase in maturity of play levels demonstrated when compared with premodeling performance (Watson & Fischer, 1977; Largo & Howard, 1979; Fenson & Ramsey, 1981). Using Feuerstein's (1980) terminology, modeling might be considered a form of social mediation by which the child attains a higher level of performance than he/she can attain independently.

Gender differences in symbolic play

Interesting gender differences have been found in the play behavior of preschool children. Lowe (1975) found that gender differences in symbolic play were minimal and inconsistent at 12-18 month range and becomes more marked after that. He found gender difference only at 21-30 month age range. Singer and Singer (2001) studied the gender difference with respect to play in typically developing children. Adventure themes, fantasy characters, superheroes, and spacemen were the favored pretend play of boys. Girls indicated a clear preference for family pretend roles (mother, father, baby), playing "house," and dress-up clothes and they performed more of such activities relating doll to bed blanket and bed, combing own hair, handling doll, blanket, pillow etc.

Children as young as eighteen months have shown preference for sex-stereotyped choices, and as they get older, this preference for same-sex-typed toys continues (Eisenberg, Tryon, & Cameron, 1984).

Toys for girls tend to be of a more passive nature—dolls, toy stoves, tea sets, carriages—whereas boys receive the cars, trucks, rocket ships, boats, mechanical sets, miniature tools, and toy weapons.

Interesting gender differences in the play behavior of preschool children with cognitive delays were reported by Malone and Langone (1995). They found that young boys engaged in more repetitive motor movements, whereas young girls demonstrated more actions of organization and arranging.

Bornstein, Haynes, O'Reilly, and Painter, (1996) have found that girls solitary play contains more symbolic features than that of boys. In the study by Duncan, Tamis-LeMonda, and Bornstein, (1990), 13-month-old girls had a tendency to engage in more symbolic play and to have greater symbolic diversity than boys.

Gender differences have been reported to emerge at 14 months of age according to study by Lyytinen, Laakso, Poikkeus, and Rita (1999). The young boys engaged in more of repetitive motor movements, whereas young girls demonstrated more actions of organization and arranging.

Relationship between symbolic play and language development

There is a critical link between the development of symbolic play and understanding and use of symbolic language. Symbolic play reflects both symbolizing ability and conceptual knowledge and therefore is considered to have closer links to

language (Lewis, Boucher, Lupton, & Watson, 2000). The infants' early knowledge about the world of objects is reflected in their symbolic play behavior which contributes to later language development.

Language, the most sophisticated human structure of symbols, has its roots in the early representational development (Piaget, 1962; Mandler, 1998). Therefore the parallel developments in play and language were explained as deriving from a common underlying capacity for cognitive representation (Bornstein & O'Reily, 1993; Tamis-LeMonda & Bornstein, 1996). Children who demonstrated specific symbolic play skills are more likely to show language milestones that were assumed to require the same underlying representational skills.

Receptive language and symbolic play are considered salient indicators of representational competence (Piaget, 1962; Werner & Kaplan, 1963). They are based on similar symbolic-conceptual processes: in vocabulary comprehension a set of sounds stands for an object, person, or activity, and in symbolic play an object or person stands for another object or person (McCathren, Yoder, & Warren, 1998). Empirical studies have confirmed this by presenting strong associations between receptive language skills and symbolic play in the first part of the second year of life (Bates, Thal, Fenson, Whitesell, & Oakes, 1989; Tamis-LeMonda & Bornstein, 1993; Beeghly, 1998).

Piaget (1955) considers the young child's approach to the world as governed by self-interest, controlled by the law of immediate satisfaction. Because of the young

child's idiosyncratic attitude, as shown in symbolic play, Piaget assumes that the child will have difficulty in acquiring language as a conventional sign system. In such a system, there is an arbitrary connection between a sign and the object the sign refers to. However, in symbolic play, the connection between symbol and the object the symbol refers is chosen by the child. According to Piaget, the child will be able to use language as a conventional sign system in a socially acceptable way only after the child has been capable of decentering.

The first signs of nonverbal symbolic activity in children's play are seen during the early part of the second year of life when the first simple pretense acts emerge (Bates, 1979). Symbolic play acts involve features of symbolic status (i.e., imitation, reference to specific classes of objects, and physical distance from the real objects that the gesture represents) offering theoretical justification for assuming links between them and language. Symbolic play acts are, however, not identical to linguistic symbols.

During the second year of child development, there is increasing use of language. For example a 2-year-old child who is given a set of toys first explores each toy separately and can give a name to it. Only at the end of sensori-motor stage, he/she uses the words detached from the context in which they were imitated. This use of words is possible only when the child is capable of interiorized imitation i.e., active use of mental images of perceived objects. The play of children at age two is dominated by the physical properties and functions of the materials being used, whereas children of between 3 and 4 years old adapt materials to generate language. For instance, in putting a doll to bed a 3-

year-old presents a real programme by saying, baby is going to bed while making the doll climb the staircase, walk into the bedroom and go to bed before saying 'Be good, sleep well' , 'Don't take your blanket off'. Most observations of 2-4-year-old children show that play activity is based on the child's ability to think and express verbally and non-verbally. Thus symbolic play competence is seen as being among the most influential predictors of early language development (McCathren, Warren, & Yoder, 1996; Thal & Katich, 1996).

Symbolic play is generally considered to be closely linked with language development, especially the "inner language" of symbolic thought (Piaget, 1951; Werner & Kaplan, 1963; Singer, 1973). Interest in this early period arose from the contention of Piaget (1951) and Werner and Kaplan (1963) that the child's idiosyncratic symbolic system, manifested for example in deferred imitation and symbolic play is a precursor of the shared symbolic function of language. Both Sinclair (1970) and Nicolich (1975) have confirmed Piaget's (1951) sequence of the emergence of symbolic representation. This begins with self-related representational play where as Nicolich (1977) pointed out the sensori-motor action *is* the symbol, for example the child eats from an empty spoon. A symbol is thought to have its origin as an action or vocalization in the presence of an object. Gradually, the symbol begins to be freed from the need for perceptual support—it can be used with a variety of exemplars of the object and to stand for the object even in its absence. Symbolism is then extended beyond his own actions to include doll or mother related play. Piaget (1951) suggests that these are the first *true* symbols because the action is now divorced from the child's own action. Symbolic acts become capable of

combination into longer sequences, and at a later stage these are planned in advance (Nicolich, 1977). The ability to use a symbol independent of particular object or situational support is believed to facilitate the recombination of these symbols into early sentences (Nelson, 1974).

A number of theorists have argued that the relationship between language and certain types of pretend play comes about because both pretence and language depend on the ability to use symbols i.e., to make one thing stand for another (Piaget 1962; Bates et al., 1979; McCune-Nicolich, 1981, 1986; Corrigan, 1987, Shore, O'Connell, & Bates, 1984; McCune, 1995). Leslie (1984), on the other hand, argued that the ability to play symbolically (e.g., pretending that a banana is a telephone) and intentional communication are both dependent on metarepresentational abilities, and that these are what underlie the relationship between pretense and language development. Leslie's theory has prompted much discussion but is generally thought to be incorrect. Harris, Kavanagh, and Meredith (1994) and Lillard (1994), for example, argue that symbolic pretend play only requires the child to behave 'as if' A was B (e.g. that a banana is a telephone), and that a meta-understanding of pretence is not required. Jarrold, Carruthers, Smith, and Boucher, (1994) suggested that Harris and Lillard are correct insofar as solitary pretend play only requires the child to behave 'as if ' A was B, but that Leslie is correct insofar as a meta-understanding of pretence is required for shared pretend play ('You pretend the banana is a telephone and I'll say ''Hello''). Thus, symbolizing ability may be a prerequisite for solitary symbolic play and the beginnings of language, whereas meta-representation may be a prerequisite for shared symbolic play and intentional

communication. There is, however, another very obvious but much less discussed prerequisite for both play and language, from their earliest beginnings. This is conceptual development. A child will not pretend to give Teddy a biscuit unless she has the concepts of Teddy, biscuits/things to eat and of eating. Similarly, he/she will not understand the words 'Teddy', 'eat', 'biscuit', much less learn to say these words, unless he/she has the relevant concepts.

Symbolic play and early language are related to one another in a local homologue manner (Bates et al., 1977, 1979). Casby (2003) proposed that the local homologue—the shared basis/structure/system from which different domains emerge—is the child's capacity for mental representation and symbolic functioning. In general, the findings were felt to support the claim that language is a distributed system and is integrated with other areas of development.

Relationship between symbolic play and language in typically developing children

Several studies have been carried out on typically developing children to investigate the relationship between play and language. Nicolich (1975) demonstrated that symbolic play development paralleled the transition from one to two-word utterances. Bates (1976) demonstrated that children begin to produce their first words at the same time that they begin to produce nonlinguistic symbols such as play gestures. Likewise Bates, Benigni, Bretherton, Camaioni, and Volterra, 1979; Bates, Bretherton, and Snyder, 1988 showed that at 20 and 28 months of age, the longest number of

different play schemes a child could produce correlated significantly with measures of syntactic development, thus suggesting that the link between language and symbolic play remains through the second year. Shimada, Sano, and Peng (1979) found that the developmental pace of language and play varied between individuals but followed the same pattern.

Westby (1980) stated that children's ability to use language in a functional or flexible manner coincides with the emergence of predictable symbolic play routines. He presented the information regarding the assessment of cognitive and communicative ability through play. His data linked play behaviours with concurrent communication skills that should be observed at various ages. A sample of the play activities and the concurrent communication behaviours expected at each age are presented in table 3. According to Westby numerous consistencies exist between play and communication performance. Changes in play complexity are generally accompanied by changes in the communication status. These changes form the basis for the assessment of play

Table 3:

Symbolic play checklist (Adapted from Westby, 1980)

Stage	Play activity	Communication activity
Stage I: 9-12 months	Awareness that objects exists when not seen, does not mouth or bang all toys	No true language; may have words associated with some actions. Exhibits some command and request behaviours
Stage II: 13-17 months	Purposeful exploration of toys; discovers operation of toys through trial and error.	Single words used (context dependent); communicative functions include request, command, response, greeting, protesting
Stage III: 17-19 months	Child pretends to go to sleep or drink from a cup	Beginning of true verbal communication
Stage IV: 19-22 months	Symbolic play extends beyond the child's self Child combines two toys in play, performs pretend activities	Beginning of word combinations with following semantic relations
Stage V: 24 months	Represents daily experiences, plays house, uses objects in a realistic manner	Uses increased phrases and short sentences, following appear: 'ing' endings, plurals, possessives
Stage VI: 30 months	Represents events less frequently experienced	Responds and asks 'Wh questions': who, what, whose, where
Stage VII: 36 months	Obvious sequence to play activities Associative play	Uses past tense Uses future aspects (particularly 'going to')

Mc Cune-Nicolich (1981) found preliminary support for the hypothesized correspondence between language and play in four areas. 1) Presymbolic behaviours in both domains (language and play) 2) Initial pretending and first referential words, 3) The emergence of combinatorial behaviours in both domains and 4) Hierarchically organized language and symbolic play. Thus they reported of parallel relationship between language and symbolic play, with transitions in a more advanced stage of development.

Ungerer and Sigman (1981) found that children who engaged in a greater number of doll-directed and other-directed play acts at 13.5 months, had higher language scores both concurrently and predictively at 22 months. At the latter age, the children's language abilities were related to symbolic play but not to the amount of relational play in which objects were simply combined by stacking or by putting one within the other.

A study conducted by LeNormand (1985) examined four levels of language accompanying symbolic play in 2-4-year-old normal children which explored the emergence, functioning and development of language production within a cognitive and pragmatic framework. The study aimed at devising a means of analyzing components of language in order to (i) trace action-based and linguistically-based play development in normal children over a 2-year period, beginning at the age of two years, and (ii) describe changes in the way language is used during play throughout this period, and also to gain an insight into the developmental process with regards to a clinical population. Twenty subjects were taken up for the study out of which a longitudinal study was conducted on ten subjects. Each subject was two years old at the onset of the study. The results were

analyzed in three different trends being developmental trends of play, cognitive trends of language and pragmatic trends of language. The results revealed that representational play had developed in all children by the age of 2.3 years. This development was completed before conceptual play which was first shown consistently by four children at 2.6 years. It was observed that in a first step, action precedes language while later language precedes action or sequences of action. These findings delineated the cognitive processes underlying language. Pragmatic trends of language showed that other than the one requesting information and initiating dialogues, all the categories had been demonstrated at the beginning of the follow-up study: naming from age 2 to 2.6, requesting actions from age 2 to 2.9 and responses from age 2 to 2.6. This study concluded that there appeared to be an orderly progression in symbolic play which provides the coding scheme for language accompanying play and the symbolic play may prove to be a useful tool for assessment of children with language disorders.

A study carried out by Shore (1986) explored the relations among combinatorial capacities in language and symbolic play, non-semantic action sequences, and block building as well as assessing the developmental level of a selected subset of concepts. This study aimed at finding if each of these tasks predicts different aspects of multiword use, or do they predict much the same variance in language. The subjects were children from 30 middle-class families, 15 boys and 15 girls between the age range of 18- to 24-months. Parent interview was carried out to acquire information regarding the language development. A video recording of various tasks viz., the non semantic task in which the experimenter gave the child a flat block, a dowel stick, and a plastic stacking ring and

allows him or her to play with them for several moments was done. Then the experimenter modeled a series of nonsense actions with the objects: "Bang the ring, spin the ring, stack the ring, then encouraged the child to imitate block building task in which the experimenter modeled four block structures for the child to copy: a two-block tower, a "train" of three blocks arranged to make a right angle, a simple arch of three blocks, and a "train" plus a fourth block placed in front of it. The four structures were always modeled in the same order. Play behaviour was carried out with various symbolic play tasks. Children's multiword performance was predicted by the number of exemplars to which the child extended the target words, the complexity of symbolic play with "counterconventional" toys, and the number of different block structures the child built, some of which were not modeled. The results indicated that there was a significant relation between the multiword usage and advances in combinatorial abilities in symbolic play.

A longitudinal study by Ogura (1991) also supported the temporal developmental relations between symbolic play and early language. He found that at different developmental stages, a child's symbolic play skills and language ability grows at a similar pace. Besides, the emergence of developmental milestones of play skill (e.g., from functional to symbolic) and language ability (e.g., from one-word to two-word stage) correlates significantly.

Doswell, Lewis, Boucher, and Sylva (1994) specifically looked at symbolic pretend play in their study of language and play in children aged between 3 and 6 years. They assessed symbolic play using the Warwick Symbolic Play Test (Lewis, 1991). They

reported significant relationships between symbolic play and various measures of language, including receptive vocabulary and expressive vocabulary and grammar, in children up to the age of 5 years. They also demonstrated statistically that the relationships were independent of chronological age.

The spontaneous play and language of children aged between 8 and 24 months was examined by McCune (1995) as they played with a selection of toys. She categorized the children's play in terms of a sequence of five levels of pretend play as the child showing an understanding of the relationship between a play act and what it stands for. The play sequence progressed from pre-symbolic (Level 1) to single pretend acts involving self (Level 2) and another (Level 3), to combinations of pretend acts (Level 4) and finally to hierarchical pretend, or planned pretend (Level 5). She also noted the number of different single words and word combinations produced by the children during the play sessions. She found relationships between vocabulary size and Level 2 (single pretend acts involving self), word combinations and Level 4 (combinations of pretend acts), and predominance of word combinations over single words with Level 5 (planned pretend). Interestingly, McCune also found that transitions from one play level to the next normally preceded the occurrence of the related language ability, although she argued that no causal relationship was implied.

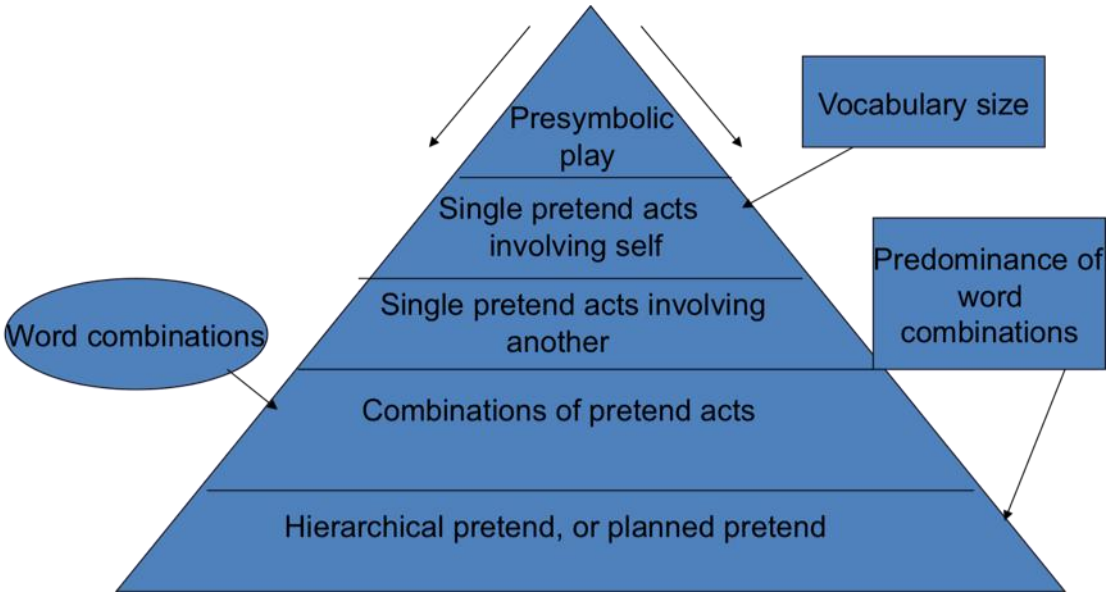

Figure 1: Hierarchy of symbolic play development and its relationship with language development.

Lyytinen, Laakso, Poikkeus, and Rita (1999) investigated the play and language development of 171 toddlers by observing their activities on the Symbolic Play Test (Lowe and Costello, 1976) and assessing their language skills. The aim of the study was to examine the developmental changes in children's nonsymbolic and symbolic play at the ages of 14 and 18 months. They also assessed how early play and language level predict children's language and cognitive skills at the age of 24 months. The results indicated that majority of 14 month old children were able to appropriately use the toys in the Symbolic Play Test. Significant difference as a function of age was found for total number of non symbolic and symbolic play activities. Trends increasing with increasing

age were also found for all subclasses of symbolic play, pretend self, pretend other and substitution pretense. The vocabulary production and speech of the 14 month old toddlers made a unique contribution to their language and cognitive skills at the age of 2 years, while at 18 months only language variables made a similar contribution. There was a concurrent significant correlation between symbolic play and language comprehension and production at 14 and 18 months of age. The intercorrelation of symbolic play and language was higher for comprehension than for production. The corresponding coefficient between nonsymbolic play, language comprehension and production also reached significance at 18 months. Only nonsymbolic play and language comprehension did not display a significant relation at 14 months. They also studied the gender difference which emerged for 14 months olds in symbolic and nonsymbolic play revealing that girls scored higher than boys and self directed pretense like brushing or combing own hair showed a significant sex difference. Girls performed more of such activities relating doll to bed blanket and bed, whereas boys seemed to be interested in playing with truck, loading truck, joining truck and moving them about.

Tomasello, Strinao, and Rochat (1999) found that typically developing children below two years performed above chance in understanding gestures and at 26 months they could comprehend miniatures as symbols for other objects, but had difficulty when substitute objects were used in an abstract way and had another conventional use (such as using an apple as a ball), which was only understood by children at 35 months. Although previous studies have found associations between general cognitive and symbolic abilities (Beeghly et al. 1990), the findings by Tomasello et al. (1999) suggested that

these links are due to associations between symbolic and verbal cognitive skills only. In the 2–3 year olds, there were strong correlations between symbolic play, symbolic comprehension, language and nonverbal measures (apart from symbolic comprehension and non-verbal functioning, which were unrelated).

A study conducted by Lewis, Boucher, Lupton, and Watson (2000) examined the relationships between functional play, symbolic play, non-verbal ability, and expressive and receptive language in normally developing children aged between 1 and 6 years using standardized assessment procedures. The sample consisted of 40 children, with two children in each 3-month age band between the ages of 1 and 6 years. The structured version of Test of Pretend Play (ToPP) (Lewis, Boucher, & Astell, 1992; Lewis & Boucher, 1997); Preschool Language Scale (PLS-3-UK) (Zimmerman, Steiner, Pond, Boucher, & Lewis, 1997); the Lowe and Costello Symbolic Play Test (Lowe & Costello 1976); the Leiter International Performance Test (Leiter, 1980) were administered. The results suggested that relationships between solitary pretend play and language development result at least partly from the fact that both pretend play and language involve conceptual knowledge and, in the case of symbolic play, symbolizing ability. These findings could not be accounted for simply by chronological age. Scores on ToPP (a test which requires the child to have both conceptual knowledge and symbolizing ability) correlated significantly with both receptive and expressive language scores. Symbolic play remained significantly correlated with both expressive and receptive language, but not with functional play or non-verbal ability; and functional play was only correlated significantly with expressive language indicating that conceptual knowledge is

not sufficient for language development but that symbolic skills are of prime importance. The scores on the Leiter (a test of non-verbal intelligence) showed no correlation with scores on tests of either conceptual ability (Lowe & Costello Test) or conceptual knowledge and symbolizing ability (ToPP), although scores on the Leiter did correlate significantly with scores on tests of receptive and expressive language. These findings suggest that conceptual and symbolizing abilities are specific to the acquisition of language, whereas some generalized factor of intelligence is involved in both verbal and non-verbal tasks.

There are studies which have focused upon the differences in symbolic play of monolinguals and bilinguals. A study carried out by Bornstein, Cote, and Andre (2000) examined two representational abilities, expressive language and symbolic play, in 28 infants reared in a monolingual Dutch environment and 34 infants reared in a simultaneous bilingual Dutch-French environment. Symbolic development was assessed when the children were 20 months old using maternal report and observation. Mothers also completed a questionnaire to assess their tendency to make socially desirable responses and a family socio demographic questionnaire. For play, infants were videotaped for two consecutive 10 play episodes, first alone and then with mother; play was coded using a mutually exclusive and exhaustive coding system. The results indicated that group differences emerged in language, but not symbolic play. Monolingual children said significantly more words than bilingual children, even when the bilingual children's words in both of their languages were counted. Monolingual children said significantly more nouns, verbs, and adjectives than bilingual children. Both

groups of children said significantly more nouns than verbs, suggesting a noun bias in early vocabularies. By contrast, monolingual and bilingual children did not differ in nonverbal symbolic play, either when they played alone or with their mothers. These authors also reported gender differences which emerged in symbolic development in both language and play: Girls said significantly more words than boys, and girls engaged in significantly more symbolic play than boys both when they played alone and when they played with their mothers.

A study carried out by Kitty (2000) aimed at finding out the correlation between symbolic play and language development in typically developing children. The research question focused upon investigating whether there was a cultural difference in scores in symbolic play measures between children in Hong Kong and children in Britain, to find if there is any relationship between symbolic play and language development in normal developing Cantonese-speaking children and if so, what is the relationship between them and whether there was a gender difference in symbolic play measures and language measures. The sample included 60 normally developing children, 33 female and 27 males. The subjects were divided into four groups according to their age. The four age groups were 18 months, 24 months, 30 months and 36 months. Each group consisted of 15 subjects, with close to equal number of males and females in each group. The Symbolic Play Test (SPT) (Lowe and Costello, 1976) involved evaluation of a child's spontaneous play with miniature toys. The Reynell Developmental Language Scale (RDLS) (Reynell, 1981) was administered as a language measure. The results indicated that the mean age-equivalent score of the SPT in the present study matched the subjects'

mean chronological age (CA) or was higher than the subjects' mean CA in the 18-month group and the 24-month group. The mean age-equivalent score of the SPT was lower than the mean chronological age in the 30-month age group and the 36-month age group. A significant positive correlation was found in the 24- month group. An insignificant negative correlation was found between chronological age and age-equivalent SPT scores in the 30-month age group. Analysis according to age groups revealed moderate positive correlation between all subjects' chronological age and their receptive and expressive language development. Language-play relations according to age revealed that the relationship between the subjects' CA, age-equivalent score of the SPT, and the age-equivalent scores of the RDLS was insignificant through correctional analysis. A significant correlation was found between subjects' chronological age and their age-equivalent score in the RDLS but not the SPT in the 18-month group. Data showed that at 18-month, relations between SPT and RDLS (both receptive and 15 expressive) were insignificant. For the 30-month group, a significant positive correlation was observed between chronological age and age-equivalent score of both receptive and expressive language measures. Yet, a negative correlation, though insignificant, was found between subjects' chronological age and age-equivalent score of the SPT while at 36 months, a significant positive correlation was observed between the SPT and the receptive part of the RDLS. Gender differences in raw scores of the SPT were insignificant, therefore, no gender difference was found.

Catherine, LeMonda, and Bornstein (1990) studied the relations among language production, language comprehension, play competence, and attention span in 43 of 13-month-old toddlers.

Language production and language comprehension covaried, and play competence covaried with language comprehension and with attention span. In contrast, neither language production nor language comprehension related positively to attention span. Relations between production and comprehension, between comprehension and play, and between play and attention were maintained even when concurrent level of maternal stimulation was partialled, suggesting that these associations are not solely mediated by mothers' didactics. Structural equation modeling showed that the common variance underlying language comprehension and play competence differed from variance underlying play competence and attention span. This suggested that a play-language factor and a play-attention factor reflect different underlying mental capacities in the young child, and that play can be partitioned into at least two independent components.

Language-play relations are specialized rather than global and only certain aspects of language relate to play (Tamis-LeMonda & Bornstein, 1993, 1994). Researchers have stated that relations between language and play largely depend on the pre-set definition of symbolic play in various experiments. Therefore, findings on the language-play relation were not always consistent. Many other researchers also supported this finding. Largo and Howard (1979) found a significant relationship between young normal children's play and language comprehension, but not expressive language.

The results of Lyytinen, Poikkeus, and Laasko (1997) showed significant concurrent associations between the language of 18 month olds and their symbolic play. On the symbolic play measures the relationships were higher between play and language

comprehension, than between play and language production. They examined language-play relations in one hundred and ten 18-month-old toddlers by observing their play actions in the Symbolic Play Test and assessing their language skills with the Reynell Developmental Language Scales. Significant associations between both language comprehension and production (vocabulary, use of suffixes, utterance length) and play were found when percentage of symbolic play was used as the measure of play competence. The total play score which included both functional-relational toy manipulation and symbolic play was not as strongly associated with the language measures. In both play measures relations were, however, higher between play and language comprehension than between play and language production. Out of the symbolic play categories other-directed pretence discriminated children's play best. The relation between language and play was also supported by a subgroup analysis which showed that early talkers displayed significantly more symbolic play than late talkers. Children belonging to the latter group had a small productive vocabulary and they did not yet exhibit any sentence combinations or grammatical suffixes. The total play score correlated significantly with language comprehension among late talkers, whereas a significant connection was found between language comprehension and percentage of symbolic play among early talkers.

A study was carried out by Laakso, Poikkeus, Eklund, and Lyytinen (2000) to investigate whether 14-month old children’s early social interactional behaviors and symbolic play competence predicted language development. In addition the frequencies of the mothers’ attention-directing strategies were also studied. The subjects were 111

mother-infant pairs, in which the categories of social interactional behaviors, joint visual attention, socially coordinated and object oriented interactions were assessed via observations of mother-infant joint play. The symbolic play was derived from the child's solitary play, which was assessed independently. The results revealed that symbolic play competence more strongly was associated with language comprehension, social interactional skills were associated more strongly with language production. They concluded that early social interactional skills and symbolic play competence can be considered as important predictors of children's later language abilities.

On the other hand, studies have also revealed that the interdependencies between language and symbolic skills change over time. Moreover, many researchers found that language-play correlations were strongest in early language development, and that the domains did not develop in parallel as the child matured (Kennedy, Sheridan Radlinski & Beeghly, 1991; Ogura 1991; Doswell, Lewis, Sylva, & Boucher, 1994). This could be because of the fact that early language is predominantly semantic and pragmatic in nature and emerges from domain general skills common to symbolic skills (Bretherton & Bates, 1984; Bates et al. 1989, Tamis-LeMonda & Bornstein, 1993), however the phonological and grammatical aspects of language, which emerge later in development, may have a modular status.

Kelly and Dale (1989) found play skills to vary significantly among normally developing one and two year old children, depending on whether their language was at the level of no words, single words, non productive syntax (gestalt two-word phrases produced as formulaic routines or stereotyped units), or productive syntax

(multiword utterances produced with evidence of rule-based creativity). In addition, however they found evidence that the attainment of particular skills might be relatively more advanced or delayed either in language or play.

According to Dixon and Shore (1991,1993), by the end of the second year children's play content, interests change and their play and language start to follow different developmental trajectories as a function of societal expectations. Shore, O-Connell and Bates (1991) reported no significant relationship between symbolic play and language, particularly mean length of utterances (MLU) in normal children. Tamis-LeMonda and Bornstein (1993, 1994) found that at 13 months language comprehension, rather than production, related to symbolic play and at 20 months, only semantic diversity (i.e., possession, agency and location) had associations with symbolic play.

Namy and Waxman (1998) found that infants use symbolic gestures and words in identical ways to perform a variety of speech acts early in communication, suggesting that similar symbolic processes may underlie early word acquisition and other symbolic forms such as gestures. However, word-learning was reported to diverge from symbolic abilities as infants begin to use features of language that distinguish it from general symbol use and use words as their primary means of communicating. While there are associations between play and language, words unlike many symbolic forms are fixed in a complex, generative linguistic system. Although they overlap, language advances from the basic symbol to referent mapping and ability to symbolize in a way that other symbolic forms do not. These findings also highlight that cognitive domains become

increasingly modular with development and may not be strictly 'innate' from birth, which is in line with the neuroconstructivist approach to development (Karmiloff-Smith, 1998).

Synchrony in symbolic play and language in children with developmental language disorders:

The vast majority of children develop speech, language and communication skills that are used over a lifetime with little apparent effort. For some children, however, this whole process of communication development breaks down. Such children have trouble acquiring and using the language code of their particular language culture. Some experience a language delay (i.e., slower development) or language disorder (i.e., atypical or uneven emergence of language systems). Both these cause difficulty in communicating and learning. For some children, the delayed onset of language may signal a developmental disability. For other children, failure to develop early language skills is not readily explained by sensory, motor, cognitive or other developmental disabilities. In general, language-disordered children are not adept at manipulating symbols.

Language delay, a very common developmental disability, is a major problem in the preschool years (Tallal, 1988). Children with a history of language delay are very likely to develop learning disabilities (Silva, McGee, & Williams, 1983). The preschool language-delayed population is heterogeneous, consisting of children with mentally retardation, autism, hearing impairment, learning disability and specific language impairment (SLI).

Play in this special population has also been widely investigated. Typically developing children can achieve infinite varieties of routines, experiences and emotions through play. But this level of sophistication is less-readily available to children with communication disorders. Research has shown that the children with autism (Tilton & Ottinger, 1964; Ungerer & Sigman, 1981; Doherty & Rosenfeld 1984); mental retardation (Hulme & Lunzer, 1966; Casby & Ruder, 1983); hearing impairment (Casby & McCormack, 1985; Spencer, 1996); developmental/specific language impairment (Lovell, Hoyle, & Siddal, 1968; Udwin & Yule, 1982; Terrell, Schwartz, Prelock, & Messick, 1984; Roth & Clark, 1987; Terrell & Schwartz, 1988; Rescorla & Goosens, 1992); and Down syndrome (Hill & McCune-Nicolich, 1981) have delays in symbolic play.

The type of developmental disability also has an effect on young children's development of symbolic play (Tilton & Ottinger, 1964; Wing, Gould, Yeates, & Brierley, 1977; Terrell et al., 1984). For example, research has shown that children with autism who are at equivalent cognitive levels demonstrate more restrictive play patterns, play less, and spend more time in off-task behaviors than do typically developing children or children with mental retardation or Down syndrome (Tilton & Ottinger, 1964; Wing et al., 1977).

Considering the close relationship between the processes underlying symbolic play and language, in typically developing children, researchers have explored the same in children with communication disorders. Studies of children with various disabilities

provided evidence of a relationship between language and play. Investigators also tried to examine whether language deficits in children result from a general underlying cognitive deficit or from language-related problems including symbolic skills (Kennedy, Sheridan, & Radlinski, 1991).

Kennedy, Sheridan, and Radlinski (1991) carried out a longitudinal study to determine the parallelness between symbolic play and normal language development. The subjects considered for the study were six preschool children, 3 boys and 3 girls with developmental delays of varying etiologies. A battery of language tests was administered and the free play behaviours and structured play with the teacher's intervention was of videotaped and analyzed. The mean length of utterances during the play activity was also taken into consideration. The results indicated in general that there was a correspondence between play and language in children with developmental delays but there was considerably more variability with regard to the two domains viz. play and language. The children who were at the single word stage of language development tended to produce single schemed play and children who produced multiword utterances had a multistaged play and therefore higher receptive language skill were related to more mature productive symbolic play and language. Modelling or adult intervention did not show any significant improvement in enhancing the child's play activity. The study also highlighted the importance and benefits of play assessment in children with special needs.

Play and language relationship in children with mental retardation:

Whittaker (1979) found that the emergence of doll-related behaviour was significantly associated with the advent of speech at the one word utterance level; the understanding of novel instructions; and the transition to simple relational play with non-symbolic toys, in the group of profoundly retarded children.

Whittaker (1980) aimed at comparing the performance of a group of 34 profoundly retarded children with the normative group on Lowe's Scale. Lowe's scale provided normative data on the development of symbolic play in young children and this incorporated a study, presenting data on 244 normal children aged between 12 and 36 months (Lowe and Costello, 1976). 34 children, 19 girls and 15 boys aged between 7.3 years and 18.6 years served as the subjects for the study. The Symbolic Play Test (Lowe and Costello, 1976) was administered by the author to each child individually. Comparisons were made on this basis with the subjects in the present study. The results indicated three main areas of difference between Lowe's sample and the subjects of the present group of profoundly retarded children which were as follows:

1. Self-feeding was predominant in the present sample and a greater delay between self-feeding and self-combing/brushing was apparent in the present group when compared with the normal children.

2. With the exception of putting the doll to bed, doll-related items occur throughout the test at a somewhat higher age equivalent level than in the normal sample.

3. The lack of transition from self-related to doll-related behaviour and the persistence of self related behaviour throughout the range is also particularly noticeable.

This study also analyzed the sex difference in play and as in Lowe's study, statistically significant differences were found for example, girls were ahead of boys in combing or brushing the doll's hair. Boys were more likely to join the truck and trailer. A similar analysis was made with the profoundly retarded children and a notable sex difference was shown on only four items and in each case girls were in advance of boys but none of the differences were statistically significant. This lack of significant sex differences could have been due to the small sample of children considered for the study. This study supports the view of Piaget (1951) that symbolic play is a precursor of language and not vice versa and he suggests that the ability to transfer actions to a doll is a crucial step from the symbolic schema of the sensori-motor period to true symbolic play. None of the subjects had reached the stage of using spontaneous two-word utterances and there had been no concomitant transfer to doll-centered activity.

Casby and Ruder (1983) found that the severity of language delay in children with mental retardation was associated with the severity of their symbolic play deficits. Cunningham, Glenn, Wilkinson, & Sloper, (1985) identified a significant relationship between expressive language scores from the Reynell Developmental Language Scales and pretend play scores from the Symbolic Play Test (SPT) in children with Down syndrome.

Beeghly, WeissPerry, and Cicchetti (1990) compared the play of young children with Down syndrome with that of young normal children of similar mental age. They found that children with Down syndrome made the transition from single-word utterances to word combinations at the same time that they began to produce sequential play schemes. Summarizing the findings of a number of studies, Beeghly *et al*. (1990) reported a relationship between mean length of utterance and symbolic play in both groups, although the relationship was stronger in children with Down's syndrome lesser than five years. Beyond this age the relationship was stronger in the normally developing children with whom they were compared. Many other studies also reported significant correlations between symbolic play and the early stages of language development in children with Down syndrome (Shimada, 1990; Sigman & Ruskin, 1999).

In one of the latest studies, Toole and Chiat (2006) investigated symbolic functioning and language in children with Down syndrome aged between 32 and 95 months. The study aimed at finding out whether the symbolic behaviours would be associated with each other and with language development or non-verbal cognition and to study the understanding of three types of symbols: gestures, miniatures and abstract symbols. They were assessed on the Test of Pretend Play (ToPP) and a novel symbolic comprehension task as well as on standardized language and nonverbal tests. The results showed that symbolic play and symbolic comprehension were significantly correlated with each other and with expressive and receptive language, but not with non-verbal ability. The association between language and symbolic functioning was significantly stronger in the younger children, but these measures started to dissociate with increasing

age and language development. The results from the symbolic comprehension experiment revealed that the children found gestures significantly easier to understand than miniatures or substitute objects used as abstract symbols to represent other objects.

Play and language relationship in children with hearing impairment:

Casby and McCormack (1985), studied children with hearing impairment and found that those with more developed communication skills displayed more symbolic play than those with minimal abilities to communicate.

Spencer (1996) studied three groups of 2-year-olds while they were playing with their mothers to identify the relationships between symbolic play and language development and also to investigate differences between play of the deaf children whose language was developing normally and play of hearing children, which would indicate effects of deafness on language development. The subjects included ten mother-child pairs in each of three groups: deaf children with hearing mothers, deaf children with deaf mothers, and hearing children with hearing mothers. The children were also divided into three language levels. The lower group consisted of children with knowledge of 50 or fewer expressive words or signs and rare use of two-word or two-sign utterances. The middle group was made up of children who used more than 50 words and occasionally produced multiword or multisign utterances. The high group had an excess of 200 words in their vocabulary and frequent expressions of more than one word or sign. The children were videotaped playing with various toys while mothers were interviewed. Mothers then

played with their children. The first 20 minutes of each tape were coded. "Measures were obtained of duration and frequency of symbolic play behaviors as well as the presence of prompting or demonstrating behaviors from the mother". The results of this study indicated that the frequency of maternal prompting and demonstrating did not differ significantly in the three hearing status groups, when the subjects were grouped according to hearing status, whereas, the duration of the activity varied. There were no significant effects for language level groups on total duration or total frequency of symbolic play. However, the analyses did show a consistent pattern of association between language level and several measures of symbolic play but not between hearing status and play. The study emphasizes that language plays an important role in developing and demonstrating higher levels of symbolic play.

Play and language relationship in children with Autism Spectrum Disorders (ASD):

Gould (1986) examined the relationships between language comprehension ages and spontaneous pretend play scores in socially impaired children, and compared the findings with those in sociable children retarded in language comprehension and use, using Lowe and Costello Symbolic Play Test. They also studied the patterns of pretend play revealed by the play test and by observations of spontaneous play. The subjects were 31 socially impaired and 29 sociable children retarded in language comprehension, with the same range of age (5 to 12 years) and intelligence (profoundly retarded to normal). Play test age and spontaneous pretend play were at a similar level in the sociable children, but, in the socially impaired, spontaneous pretend play was lower than the play

test age would predict. In some of the latter it was absent, and in the others it was narrow and repetitive in form. The results indicated that play age and spontaneous pretend play were at a similar level in the sociable children, but, in the socially impaired, spontaneous pretend play was lower than the play test age would predict. For subgroups of socially impaired and sociable children with similar play ages, there was no significant difference in language comprehension age.

Mundy, Sigman, Ungerer, and Sherman (1987) conducted a study to determine the social and cognitive correlates of language acquisition in children with autism. The purpose was to find whether measures of nonverbal communication skills provided information about the nature of the skills associated with language abilities in autistic children which is independent of the information provided by measures of object play. The subjects in this study were 16 autistic children (12 boys, 4 girls) between 38 and 75 months of age. Different testers assessed each child on the psychometric, language, play, and nonverbal communication measures. The results revealed significant correlations between symbolic play and both expressive and receptive language measures, although eight children did not produce any symbolic play and a similar number received the lowest language scores. The total number of different functional play acts was not significantly correlated with the language scores. Certain types of nonverbal communication skills were also shown to be significant correlates of language development. These involved the ability to use gestures and to coordinate visual attention between social partners with respect to objects or events. The play and nonverbal communication variables were not significantly correlated, suggesting that these variables

reflect independent psychological factors associated with language development in young autistic children.

Stanely and Konstantareas (2007) investigated the relationship between symbolic play and other domains, such as degree of autistic symptomatology, nonverbal cognitive ability, receptive language, expressive language, and social development in 101 children aged 24–26 months children who were diagnosed with Autism Spectrum Disorder (ASD). The study employed a within group design to determine which features of children with ASD were linked to competence in symbolic play. It was hypothesized that more advanced symbolic play skills would be related to lower autistic symptomatology, and better developed social skills. The Lowe and Costello Symbolic Play Test was a part of every child's assessment protocol. The results indicated that combined chronological age, symptom severity, nonverbal mental age, expressive language, receptive language, and social development significantly predicted 56% of the variance in symbolic play. Nonverbal cognitive ability was a significant unique predictor of symbolic play. Expressive language was also a significant unique predictor of symbolic play. Social development did not significantly predict unique variance in symbolic play. The findings of this study provide support for the inclusion of symbolic play measures in the rehabilitation of children with ASD.

Synchrony in symbolic play and language in children with language impairment:

For many children the delay in language is secondary to other conditions such as hearing impairment, mental retardation, autism spectrum disorders etc. When language delay is found in the absence of these conditions, the child is said to have a specific language impairment. Specific language impairment (SLI) is a developmental language disorder that can affect both expressive and receptive language. In the last decade, an important distinction has been made in the communication disorders literature between children with SLI and late talkers. Late talkers are young children who are delayed in their expressive language skills despite normal nonverbal cognitive ability, adequate hearing and typical personality development. Late talkers are classically defined as children at age two who present with age-appropriate cognition and receptive language with fewer than 50 words produced expressively and few or no word combinations (Rescorla, Alley, & Christine, 2001). The children below age three years with expressive language delay are identified as late talkers. Toddlers whose language delay is secondary to another condition such as mental retardation/general developmental delay, autism or hearing impairment are excluded as late talkers (Whitehurst & Fischel, 1994).

The criterion for labelling late talker varies among researchers. Thal & Bates (1988) identified toddlers ranging in age from 18-29 months as late talkers, if they produced no two-word combinations and scored in the lowest tenth percentile for expressive vocabulary for their age. Rescorla's (1989) criteria included less than a 50 word productive vocabulary at age two or no multiword combinations based on the

Language Development Survey (LDS) parent checklist. Paul (1991) using LDS considered children to have slow expressive language development if they produced fewer than 10 intelligible words at 18-23 months or they used less than 50 words or no two-word combinations at 24-34 months. Although late talkers are clearly distinguishable on the basis of their poor expressive language skills relative to other areas of development a number of late talkers also exhibited delays in receptive language abilities, and deficits in socialization (Thal & Bates, 1988; Paul, 1991; Thal, Tobias, & Morrison, 1991).

The late talkers are late in acquiring their first words and their first word combinations (Fischel, Whitehurst, Caulfield, & Debarysche, 1989; Rescorla & Schwarts, 1990; Rescorla, Roberts, & Dahlsgaard, 1997), have a poor vocabulary size (Rescorla, Roberts & Dahlsgaard, 1997), and have limited phonetic repertoires (Stoel-Gammon, 1989; Whitehurst, Smith, Fischel, Arnold, & Lonigan, 1991; Paul & Jennings, 1992; Rescorla & Ratner, 1996). They may or may not have poor receptive language.

Early studies on late talkers have referred to these children as having specific language delay (Rescorla & Schwarts, 1990; Paul, 1996), expressive language delay (Caultield, Fischel, DeBaryshe, & Whitehurst 1989) or specific language impairment-expressive type (Rescorla, Roberts & Dahlsgaard, 1997). Rescorla (2000) distinguished between children with specific language impairment (SLI) and late talkers. Specific language impairment is used to refer to children identified at around 4 years with language delays and toddlers with language delays between 2-3 years are identified as late talkers. The reason for this distinction is that late talkers manifest a better outcome

than children with specific language impairment (Whitehurst & Fischel, 1994; Paul, 1996; Rescorla & Lee, 2000). However, Rescorla (2000, 2002), considering the long term outcome data of late talkers and children with SLI, argued against a categorical distinction between these two groups of children. She postulated that late talkers are to be viewed as mild form of SLI and both have weak language systems but late talkers are severely impaired and hence constitute a subset of children with SLI.

Many toddlers diagnosed as late talkers were able to catch up to their peers when they enter preschool; such children are called late bloomers. However about 40% of children whose communicative development is delayed by age two continue to experience immature patterns of speech and language, demonstrate additional problems, and are at risk of later academic failure (Catts, Hu, Larivee, & Swank, 1994; Beitchman, Wilson, Browlie, Walters, & Lancee, 1996; Leonard, 1998).

Few studies have focused on determining the factors that would predict later expressive language development in toddlers who are late talkers. The factors include (a) socio-economic status (Paul, 1989), (b) the ratio of consonant babble to total babble during pre-linguistic stage (Whitehurst, Fischel, Arnold, & Lonlgan, 1992), (c) expressive language level related to age expectations at initial diagnosis (Rescorla & Schwarts, 1990), (d) reported vocabulary size at 24-38months (Fischel, Whitehurst, Canfield, & DeBaryshe, 1989), (e) language comprehension and symbolic gesture production at 18-28 months (Thal, Tobias & Morrison, 1991), and use of communication gestures (Thal & Tobias, 1992).

Also, slow early language development reflects a predisposition for slower acquisition and lower asymptotic performance in a wide range of language related skills in to middle childhood and adolescence (Rescorla, 2002). Thus late talking children are at high risk of developing higher language difficulties and reading problems in school age.

Play abilities in children with language impairment has been investigated by many researchers. Children with language-impairment often confine themselves to playing with the familiar toys. They may choose the same abstract/constructional toy each time. This may be because they have a poorly defined internal framework of reference with in which to develop new routines and ideas. Many factors may be involved in this tendency, including poorly developed symbolic, conceptual and cognitive skills (Griffiths, 1969: Leonard, 1979). Thus the child may perform the same stereotyped action carried out repeatedly with a few toys (e.g., lines things up, pushes things forward and backward) demonstrating an inability to develop a sequence of actions from the basic ability to manipulate the objects. A number of studies have also investigated the play-language relationship in children with language impairment.

One early investigation of the symbolic play of children with language impairments was conducted by Lovell, Hoyle, & Siddal (1968). Their clinical group consisted of 10 language-impaired (LI) children who "were otherwise normal in most relevant respects". The age range of the LI children was 3:4 to 4:8 (mean chronological age: 3:11) and the age range of the NL children was 3:2 to 4:9 (mean chronological age 3:10).

They administered an clinical version of a test designed to assess children's imitation, comprehension, and production of language. There were significant differences between the LI children and the NL control subjects for language imitation and production, but not for comprehension. The play assessment consisted of observation of subjects' free play in their preschool setting. The play taxonomy used by Lovell et al. (1968) consisted of practice play and symbolic play, with little further descriptive information or operational definitions. The subjects were partitioned into three age levels consisting of (a) the four youngest children, (b) three children in the middle of the age range, and (c) the three oldest subjects for each group of subjects. The results revealed that both the groups of children spent a similar amount, and the majority, of their time involved in symbolic play. There were no significant differences in the play performance of the LI and NL children in the second age group; and, like the youngest subjects, both groups of children spent the majority of their time in symbolic play activities.

Like the two younger groups of subjects, both the LI and the NL children at the oldest age level demonstrated more symbolic play than practice play. However, there was a significant difference in the amount of time spent in symbolic play between the NL children and the LI youngsters. Only for the oldest group of children studied, were the NL children observed to spend significantly more time in symbolic play than were the LI children. Regardless of this difference, it was reported that the LI children demonstrated symbolic play at all the age levels studied and, based on the amount of time spent in such play, they were similar to their CA-matched NL controls at all age levels studied except the oldest. For both groups of subjects, at all age levels, symbolic play was the most

frequently occurring form of play. Thus they found that older children with SLI (4-year-olds) spent less time on symbolic play than their normal language peers, although this difference was not significant for younger children with SLI (3-year-olds).

A closer inspection of Lovell et al.'s (1968) data showed that although symbolic play was the most frequently occurring type of play for both the LI and the NL children, its frequency of occurrence decreased across the three age levels for the LI children, but not for the NL youngsters. This decline in observed time spent in symbolic play by the LI children may be a phenomenon related to their continued delay in language. It was noted that, the possibility exists that language delay affected the symbolic play performance of the LI children.

A protocol for the assessment of language-impaired (LI) children's complexity of play was presented by Brown, Redmond, Bass, Liebergott, and Swope (1975). Their 10 LI and 10 normal (NL) children were matched for chronological age at 3, 4, and 5 years. They employed a play-suggestion methodology to elicit play performances from their subjects. It consisted of verbally presenting each child with six different play suggestions designed to elicit different levels of play ranging from performance of simple schemes (e.g., "Show me how you wash your hands") to simple identification of one object with another (e.g., "What can we make these things be?") and to simple combinations of symbolic items (e.g., "Let's play an animal game"). In comparing the degree of adaptation in the symbolic play performances of their NL and LI subjects, Brown et al. (1975) found significant differences only at the 5-year-old level, with the NL children demonstrating

significantly higher levels of adaptation. Consistent with Lovell et al. (1968), Brown et al. (1975) found no significant differences between the NL and LI children at younger ages. Similar findings for the variable of integration in the children's play were reported by Brown et al. (1975); significant differences in degree of integration in the suggested play schemes were found only with the oldest group of subjects. Only at the 5-year-old level did the NL children show a higher level of complexity in their play than did the LI children. They also found that 3-to5-year old children with SLI were less adept at utilizing a collection of non-toy objects (sticks, straws etc.) to enact a scenario (e.g., a birthday party) than their normal language peers.

Symbolic play complexity of language-impaired and CA-matched normal-language preschool children in the age group of 3-to 5 year-olds was studied through an examination of the degree of "imaginativeness" observed in their free play by Udwin and Yule (1983). The LI children (Mean chorological age: 4.4) were delayed in both receptive (Mean Receptive language age: 3.0) and expressive language (Mean Expressive Language Age: 2.8). The reported mean receptive and expressive language ages for the NL children were each 5.3. Udwin and Yule's assessment of the children's play consisted of observation of the children's free play activity, which was rated on a scale ranging from 1 to 5 for degree of imaginativeness. The LI children had a mean score of 2.07, which was significantly lower than the CA-matched NL children's mean score of 3.73. These children demonstrated less sophisticated spontaneous play than children with normally expressive language.

Terrell, Schwartz, Prelock, and Messick (1984) studied the symbolic play of 15 normally developing (chronological age: 16-22 months) and 15 children with language-impairment (chronological age: 32-49 months, mean age: 3 years) whose productive language skills were at the single-word utterance level. Symbolic play was assessed formally through the Symbolic Play Test and informally through the observation of spontaneous play. Relative to age matched norms, the children with language impairment evidenced deficits in symbolic play. However, the children with language impairment were found to be developmentally advanced when compared to the language-matched normal children in the level and direction of their symbolic play. They showed somewhat more schemes in free play with realistic objects than normal younger children with similar language skills. Thus, the linguistic and symbolic play abilities were impaired on a different scale in children with language impairment.

In contrast, Roth and Clark (1987) found that play abilities of children with language impairments were less well developed than those of language-matched controls. They compared the symbolic play and social participation behaviors of 6 language-impaired (5-to 7-year-olds) and 8 normal younger language-matched children (3-year-olds) on three measures of play: (a) the Symbolic Play Test (Lowe & Costello, 1976), (b) the Brown-Lunzer Scale (Brown, Redmond, Bass, Liebergott, & Swope, 1975), and (c) the Scale of Social Participation in Play (Tizard, Philps, & Plewis, 1976). Subject groups were equated for MLU (Brown, 1975), Developmental Sentence Scoring (Lee, 1974), and performance on the Test of Auditory Comprehension of Language (Carrow, 1973). Results indicated that the language-impaired subjects demonstrated significant deficits in

symbolic, adaptive, and integrative play behaviors in comparison with the linguistically equivalent normal subjects. The language-impaired group also evidenced significantly more nonplay and significantly less solitary and parallel play than their normal peers.

Terrell and Schwartz (1988) investigated the object-based symbolic play abilities of ten 3-4 year old language-impaired children. Their performances in play were compared to those of 10 normal-language children matched for chronological age as well as to those of 10 normal-language children matched for mean length of utterance. One measure of play consisted of observation of the subjects' free play with a standard set of toys. Another measure of play consisted of presenting each subject with a doll and selected objects that might lead to substitute-object symbolic play when used with other toys. For both measures the children's play actions were scored as (a) concrete-defined as any general action that could be applied to any number of objects (e.g., mouthing, rubbing, etc.); (b) representational-defined as functional or conventional use of objects without substituting one object for another (e.g., feeding a doll with a toy spoon); or (c) symbolic-actions involving the transformation of one object for another (e.g., using a stick to pretend to feed a doll). They found that children with language impairment engaged in more concrete, and less symbolic lay than age mates, but they did not differ from language-matched controls, i.e., the chronological age-matched normal subjects showed more object transformations in play than either the language-impaired or younger normal-language children. However, there were no significant differences across the groups in representational or symbolic play actions. Additionally, although object transformations were observed in both segments, all children performed more object transformations with objects than with toys**.** It was concluded that the observed level of

object play by all the children indicated that all had reached a level of development of symbolic activity.

Kushnir and Blake (1996) also investigated the symbolic play abilities in 3-to 5-year-olds with expressive language delay. They reported no significant differences between the children with a language delay and the typically developing age-mates, in number or variety of play schemes, in sequence length, or in object substitutions**.**

These studies were all carried out on the older children with language impairment. The subgroup with an expressive language delay (late talkers) in the age range of 2-3 years is of particular interest in this study. The relationship between play and language in this population has been investigated only by a few researchers.

Lombardino, Stein, Kricos, and Wolf (1986) aimed at comparing the structural play and language relationships and the diversity of play skills in age matched language impaired and normal children. The subjects in the study were 5 normal and 5 language impaired children between 27 and 39 months of age. The research intended to study two groups of language impaired subjects, those with expressive and receptive delays and those with expressive delays only. The play sessions were videotaped and further analyzed by segmenting and coding the symbolic play behaviours and the Mc cune-Nicolich symbolic play scale was used to code the behaviours exhibited. The mean length of gestural sequence and the mean length of utterance were chosen as a parallel metrics for comparing play and language sequence. The play behaviours were categorized into different levels of complexity and analyzed for each level. The results of the study

suggested that the language impaired and the language- normal children differed in their play-language relationships when the structural metrics of mean length of utterance and mean length of gestures was used. The symbolic play analysis revealed that the language impaired children exhibited less number of complex play behaviours when compared to the language normal children. Moreover it was found that the spontaneous play to be maximum in the language normal children and less percentage of spontaneous or unmodeled play was observed in language impaired group.

Thal and Bates (1988) studied gestural imitation in a group of 9 late-talking toddlers in the age group of 18-32 months. The children were asked to reproduce single gestures that had been modelled with toys and objects. They found that late talkers produced significantly fewer recognitory gestures (e.g., 'drinking' from a toy cup) then age-matched controls, but the same number as language-matched controls. They also reported that the language-delayed children performed like language-matched younger controls on single-scheme imitation, but like the normal age-matched controls on multi-scheme imitation. A follow up study of these late talkers one year later showed that gesture production correlated significantly with language comprehension and that performance on gesture tasks predicted which children remained language delayed at follow up and which children' caught up' (Thal, Tobias, & Morrison, 1991). A limitation of this study is that their 'late-talking' toddlers manifested a range of receptive language skills. Although some were receptively normal, others had delayed language comprehension.

Skarakis-Doyle and Prutting (1988) followed two toddlers with Expressive Specific Language Impairment (SLI-E) at monthly intervals from about 24 to 30 months of age. The results indicated that these toddlers with SLI followed Nicolich's developmental play sequence, but at a slower rate than found in normally developing toddlers. Additionally, play sequences tended to be short and lacking in variety; virtually no improvement in these dimensions occurred over the 6-month period, which is quite different from the development of play in the normal children. Thus these toddlers with SLI-E tended to be delayed, restricted, and repetitive in their play, when compared with toddlers who are developing language normally.

A study carried out by Rescorla and Goossens (1992) aimed at examining whether toddlers with SLI-E would have symbolic play commensurate with their receptive language and thus comparable to the play of their language playmates, or conversely whether their symbolic play would be delayed in parallel with their expressive language development. The subjects included 40 children between the ages of 2-3 years, 20 were with expressive specific language impairment and 20 were the control group. The language skills and play behaviours was assessed for each child. The procedure was to assess children in two play situations free play and structured play which was vedio recorded and later analyzed by various coding procedures. In general the results revealed that children with expressive SLI displayed less decentered play (use of play schemes with a doll or another person), less well-developed sequential play, and fewer occurrences of symbolic play transformations (use of a neutral object or an absent object to carry out pretending). The results of the free play analysis revealed that two year olds with SLI-E

engaged in a significantly higher frequency of manipulation and grouping behaviours than the normal language children. The children with expressive SLI tended to engage in more functional conventional play than the normals. The SLI-E group were most different in the play categories of sequences and symbolism that is normals demonstrated greater number of sequences and symbolism. In structured play both groups improved with instructions and modeling yet the normal language group scored significantly higher than the SLI-E. These children also used few intelligible words and no word combinations during play. Thus they observed a parallel between the delayed symbolic play and delayed expressive language.

Rescorla and Goosens (1992) also quoted three possible explanations for the delay in pretend play and its link to language in toddlers with SLI-E. A first possible explanation given is that children with expressive SLI are delayed in representational play for reasons that may be considered as "stylistic", that is as shown in their study the children with SLI-E more frequently engaged themselves in manipulations and handling of the toys and in grouping similar objects together than the other toddlers. They appeared to be inclined towards kinesthetic, patterned types of play, rather than dramatic play. Thus they appear to be more intrigued with physical affordance of the items and less responsive to the social, thematic, or representational qualities of the toys than the other children. That is SLI-E group had more functional conventional play and less functional to other and symbolic play than other children. These distinct styles of play viz. "patterners" and "dramatist" styles were also seen by Wolf and Gardner's (1978) in the older children. A second explanation given is that the play difference between the

toddlers with SLI-E and normal language is not so much stylistic as they are "developmental". The slower maturation in the SLI group would result in a smaller "lexicon" of play schemes and less richness, complexity, and flexibility in that play lexicon. According to Leonard's (1987) study the children with SLI-E simply fall at a lower end of the normal distribution of abilities in the language/symbolism faculty, rather than manifesting some pathological process or disorder. In addition to the "stylistic" hypothesis and the "developmental lag" hypothesis, a third possible explanation for the apparent link between expressive language delay and pretend play delay in children with expressive SLI is that a problem in access or retrieval exists for these children. According to this hypothesis, children with expressive SLI might have some deficiency in fluent, rapid and spontaneous retrieval and encoding of two forms of stored symbolic representations, namely lexical entries for semantic referents in the case of language and event representations, scripts or schemes in the case of play. Thus, according to this hypothesis children with expressive SLI find deliberate accessing and verbal encoding of stored language representations effortful because retrieval is difficult, some children with expressive SLI may also develop a secondary "motivational" deficits, resulting in their making relatively less effort to talk. This hypothesis is consistent with the present study where that many children with expressive language delay have conspicuous word retrieval and verbal formulation problem and they often appear to choose not to talk rather than bothering to put their ideas into speech.

Casby (1997) reviewed the play behaviour in children with language impairments and concluded that the actual differences in symbolic play abilities between children with

language disabilities and the typically developing children, appear to be quite small; they have "a symbolic *performance* deficit more so than a symbolic *competence* deficit". That is, their capabilities for using symbolic ideas in play may be similar to children without language disabilities. He concluded that research on the complexity of the symbolic play of children with language impairments has revealed differences between them and chronological age-matched normal-language children only at the older age levels examined (approximately 4.6 to 5.0 years). No significant differences in the complexity of symbolic play demonstrated by younger children (3-year-olds) had been reported. Further, he suggests that even when significant differences are found relative to age-matched controls, these differences tend to be frequency differences, not qualitative ones (i.e., children with language impairments do display symbolic and representational play behaviour, but less often than typically developing children). Many studies find no differences in play behaviour when children with language impairment are matched with typically developing children on language level. At times, they demonstrate more complexity in their symbolic play than do their consequently younger, normal controls. Similar results were also found in children who are late talkers, i.e., they do have deficits in symbolic play when matched with the age-mates, but performed on par when compared to the language-matched normal children. Most importantly, Casby (1997) argued that it is very difficult to avoid the confounding of language skill and play level in research of this kind. Specifically, late talkers and children with SLI who have receptive language deficits may fail to comprehend task instructions in play procedures, whereas youngsters with expressive language deficits may have difficulty narrating and explaining

their play behaviour in a way that allows observers to appreciate its complexity and are less able to make their pretense themes and roles explicit in their play.

In summary, the findings concerning the strength of the language-play relationships, are not however, entirely consistent in both the typically developing children and the children with language delays. This inconsistency may be partly due to different methods, materials, and aspects of pretend play examined in the studies. There are some indications that specific dimensions of pretend play may be affected differently. Relations that emerge in empirical studies also depend atleast partly on how and at what age play is defined, in what of context play and language have been measured and on what kind of assessment methods and scoring criteria are used (e.g., Dixon & Shore, 1991; Tamis-LeMonda & Bornstein, 1990, 1993, 1996; Casby, 1997; Lytinnen et al., 1997). Dixon and shore (1993) suggested that the importance of play content needs to be examined in symbolic play studies, because children may not demonstrate their highest level of play if they are not interested. Differences in frequencies with which children engage in various play activities and the variety of their play activities are other potential aspects of variability in play development that were observed clinically, although they have not been systematically explored (Westby, 1988, 1991). Yet another reason for inconsistency could be due to differences among the groups of language-delayed children who were considered for the studies.

Thus the existing literature suggests a mixed evidence of play-language differences in typically developing and children with language impairment. Since there is

lack of data with respect to the play-language relationships in individuals with expressive language delay (late talkers) especially in the Indian context, this study was planned with the aim of investigating the differences in symbolic play behaviors of typically developing normal children and late talkers and to examine whether symbolic play development corresponds with the receptive and expressive language development in late talking children.

CHAPTER 3

METHOD

The present study investigated the differences in symbolic play behaviour between typically developing normal children and late talkers and also examined whether symbolic play development corresponded with language development in both the groups. In addition, it was also assessed whether the symbolic play behaviours improve under social mediation strategies such as modeling and instruction. The age related changes in the symbolic behavior and the toy and play preference between genders in both the groups of children was also examined

Subjects: A total of twenty Kannada speaking children between the ages of 24 to 36 months served as subjects for the study. The clinical group consisted of ten children in two age groups (24-30 months and 30-36 months) diagnosed as Expressive Language Delay (late talkers) by a qualified team of professionals including speech-language pathologist and psychologist. The control group consisted of ten children matched for gender, age range, socio economic status and child care history. They were mainly recruited through nursery and kindergartens. Each group consisted of 5 subjects with close to equal number of males and females in each group.

Subject selection criteria:

Three-Dimensional Language Acquisition Test (3D-LAT) (Geetha Harlekhar, 1986), a test to assess their receptive, expressive and cognitive skills was administered to each child. The criteria used to identify late talkers was the results of 3D-LAT showing receptive age within 3 months of the chronological age and expressive age showing 6 months or more below the chronological age (expressive language delay). The criterion for inclusion of children in the control group was their expressive and receptive age which should be within 3 months of chronological age.

In addition all the children were informally screened to rule out any audiological problems. They were evaluated for their intellectual abilities by a clinical psychologist. All the children had average intelligence quotient. The children included in both the groups had no history of medical problems, emotional, behavioral or sensory disturbances. In addition the WHO Ten-question disability screening checklist (Singhi, Kumar, Malhi & Kumar, 2007) was used to rule out any disability for the children in the control group. All the children had attended speech-language therapy for an average duration of one week (demonstration therapy) and was advised to continue to train the child at home.

Ethical procedures were used to select the participants. The parents were explained the purpose and the procedures of the study and an informed verbal and /or written consent was taken.

Procedure: The procedure consisted of two phases: investigation of symbolic play behaviours and the administration of play checklist to assess the overall play development.

Phase I: Investigation of symbolic play behaviours

To study the symbolic play behavior, two sessions of play were organized in which all the children participated in two types of play situations viz. free play and structured play. Free play is an unobtrusive observation of a child' play in which the child has the opportunity to choose the focus of play without interference or involvement of an adult. In the free play format that was used for this study a specific set of toys and /or objects was provided to play with in a natural setting i.e., within their homes. Structured play is adult-led, guided and planned. Structured play can be viewed as the adult teaching the child to play. This procedure elicits behaviours through instruction and/or modeling.

First session:

a) Structured play with toy sets: Each child was presented with four sets of thematically related toys, one set at a time, and they were allowed to interact with them for approximately 5 minutes each. The sets included several standard toys which would facilitate symbolic play and either a stick or a block as an item to be transformed.

Set 1: Doll, baby bottle, blanket, stick

Set 2: Stuffed bear, comb, blanket, stick.

Set 3: Two small human figures, horse, soap, block

Set 4: Truck, human figure, toy screwdriver, two blocks, stick.

b) Free play with basket A: Each child was presented toys with basket A such as kitchen set, furniture set, doll, blanket, truck, two small human figures, a comb, small plastic animals, sticks and blocks as objects of transformation etc. which were spread in the vicinity of the child. The child was invited to play with the toys. The mother was seated in the room but was asked not to intervene in the child's play. This session lasted for approximately 10 minutes. The experimenter did not engage in the ongoing activities, but only redirected the child's focus to the toys if his/her attention wandered before the end of 10 minute period.

Second session: The second session was taken a week after the initial visit.

a) Free play with basket B: The child was presented with the basket B containing toys again as mentioned above. The same procedure as in session 1 was carried out. The two basket design was carried out in order to examine test to retest reliability of play behavior in free play situation.

b) Structured play with toy sets: Instruction and modeling conditions:

After playing with the basket B, the child was presented with the same four sets of toys as listed in session 1. The codable pretend behaviors at different levels were requested by specific instructions. If these behaviors did not occur on instructions alone, then the toys were presented once again and the remaining desired actions were demonstrated accompanied by verbal instructions. For e.g., on presenting the child with a doll and a bottle, the experimenter said, "Can you give the dolly a bottle?" If the child did not perform the action requested, a second instruction was given in the form of a command, "Give her some juice". In case the child did not perform the behavior with instruction,

the experimenter elicited them by demonstration. For e.g., the experimenter picked up the necessary toys, pretended to feed the doll with the bottle and handed over both items to the child with the instruction that, "Can you give the dolly a bottle like that? Now do it".

All these sessions mentioned above were videotaped.

These toys have been selected on the basis of literature support (Rescorla and Goosens, 1992) with suitable modifications for Indian context.

Phase II: Administration of play checklist:

In addition to the free and structured play session, the Assessment Checklist for Play Skills (Swapna, Jayaram, Prema, & Geetha, 2006) was administered to get their age-equivalent play scores. This is a checklist standardized on the Indian children to assess the overall development of play. The play behaviors observed during the free and structured play were used to rate the child's play skill on the assessment checklist for play skills. This was done in addition to the information obtained about the play behavior though parental interviews.

Analysis: The symbolic play behaviors such as presymbolic play (functional play and sequential play), symbolic play (symbolism and verbalized symbolism) were studied. The qualitative differences in frequency of symbolic play in the two different age groups were also analyzed.

Data coding for free play: Various types of play behaviors exhibited during free play with basket A & B was coded from the videotape for frequency of the specified play behaviors. For e.g., if the child puts a cup on the saucer, it was coded under 'functional conventional'. Thus each time a play behavior occurred (details provided in the appendix I), it was marked in the tally sheet and documented descriptively if required. The categories included three basic categories of presymbolic play (functional conventional, functional to self, and functional to other, sequences sub classified into four types), two types of symbolic play (sequences sub classified into three types and verbal symbolism) as well as a variety of other nonsymbolic behaviors such as grouping, manipulation, wandering and social interaction.

Data coding for structured play: The target behaviours for each of the four toy sets are listed in Appendix II. The following scoring pattern was used:

Spontaneous occurrence of a desired behavior in the first session - 3

Occurrence of a desired behavior in response to instruction in the second session - 2

Occurrence of a desired behavior following modeling in the second session - 1

Non occurrence of a desired behavior in the first or second session - 0

The maximum score that can be obtained by a child is 5 for each target behaviour with the toy sets (3 for spontaneous performance in the first session plus 2 for performance with instruction in the second session).

Statistical analysis: The raw data was tabulated and further subjected to both quantitative analyses. SPSS 16.0 version was used for the detailed analyses.

The statistical mean scores of the free play of basket A and B for both the groups was calculated. Also the mean scores of the play behaviour exhibited during the structured play sessions for both the groups were computed. A parametric test, i.e., independent t-test was used to find the overall differences in symbolic play behaviours of typically developing children and late talking children. MANOVA was done to check for the significant difference between groups for various targeted play behaviours in the structured play situation. Mann Whitney test was applied to look for significant difference between the control and the clinical group age group wise in the free play and structured play situation. Paired t-test was carried out to check for the difference across the groups with respect to different toy sets in the structured play situation. To investigate the correlation between the play age and language age in the control and the clinical group across both the age groups, Spearman's rank correlation coefficient was applied.

CHAPTER 4

RESULTS AND DISCUSSION

The aim of the study was to investigate the differences in symbolic play behaviors between Kannada speaking typically developing children and late talkers in the age group 2-3 years and to assess whether these symbolic play behaviours improved under social mediation strategies such as modeling and instruction. The relationship of symbolic play development to the receptive and expressive language development was also examined.

The play behavior of the subjects under two different conditions viz. free play and structured play were analyzed and tabulated. Three-Dimensional Language Acquisition Test (3D-LAT) (Geetha Harlekhar, 1986) and the Assessment Checklist for Play Skills (Swapna, Jayaram, Prema & Geetha, 2006) was administered to get their age-equivalent language and play scores respectively. The data obtained was subjected to statistical analysis. The following statistical procedures were carried out within and across each group of subjects.

- Descriptive statistics to obtain mean and standard deviation for the free play and structured play analysis.
- Cronbach's alpha value to check for the inter-rater reliability.
- Independent t-test to check for the significant difference
    - across the control and clinical group in the free play situation.

- across the age group within the control and clinical group in the free play situation.
- across the two groups for session 1 and session 2 of the structured play.
- between structured play session 1 and session 2 in each toy set for the two groups.
- across the two age groups within the control and clinical group.
- between the groups on two conditions viz. instruction and modeling in the structured play situation.

- MANOVA to check for the significant difference between groups for various targeted play behaviours in the structured play situation.
- Mann Whitney test to look for significant difference
  - between the control and the clinical group age group wise in the free play situation.
  - between the control and clinical group for the play behaviours with the each age group in the structured play situation.
- Paired t-test to check for the difference across the groups with respect to different toy sets in the structured play situation.
- Spearman's rank correlation coefficient to examine the correlation between play and language.

The results obtained on the play behaviours in typically developing children and late talkers from different statistical analyses have been presented and discussed as listed below:

a) Tester reliability for free play and structured play analysis
b) Performance in free play situation
c) Performance in structured play situation
d) Performance under social mediation strategies such as modeling and instruction
e) Relationship between play and language
f) Toy and play preference across genders

a) Tester reliability for free play and structured play analysis:

Two qualified speech-language pathologists scored the play behaviours seen during free and structured play. These ratings were compared to check for the inter-rater agreement. There was a high reliability between the two raters i.e., Cronbach's alpha value being (> 0.7 to 1) for both free and structured play. The second rater was blind to the control and clinical group. The alpha values indicating inter-rater reliability for play behaviour during free play situation and structured play situation for both the control and clinical group has been depicted in table 4 and 5 respectively. The nonsymbolic, presymbolic and symbolic play behaviours were considered and rated during both free play and structured play analysis. However the behaviours such as grouping, manipulation, social and unoccupied behaviours were not considered during the structured play analysis since structured play consisted of eliciting distinct presymbolic and symbolic behaviours using specific toy sets.

Table 4:

Inter-rater reliability (alpha value) for both the groups during free play session

Play behaviours		**Typically developing group (alpha value)**	**Late talking group (alpha value)**
Non symbolic play	Grouping	0.95	0.97
	Manipulation	0.96	0.95
	Social	0.94	0.87
	Unoccupied	0.92	0.93
Presymbolic play	Functional conventional	0.87	0.95
	Functional to self	0.88	0.94
	Functional to other	0.93	0.88
	Sequence A	*1.00	0.78
	Sequence B	0.89	0.81
	Sequence C	0.92	-
	Sequence D	0.94	-
Symbolic play	Symbolism A	0.95	*1.00
	Symbolism B	0.86	0.94
	Symbolism C	-	-
	Verbal symbolism	0.85	-

‘*’ indicates 100% agreement between raters

‘- ’ indicates that the play behavior was not exhibited by the children

Table 5:

Inter-rater reliability (alpha value) for both the groups during structured play session

Play behaviours		**Typically developing group (alpha value)**	**Late Talking group (alpha value)**
Presymbolic play	Functional conventional	0.79	0.95
	Functional to self	0.94	0.87
	Functional to other	0.96	0.95
	Sequence A	*1.00	*1.00
	Sequence B	0.75	*1.00
	Sequence C	0.89	-
	Sequence D	*1.00	-
Symbolic play	Symbolism A	0.97	0.93
	Symbolism B	*1.00	*1.00
	Symbolism C	-	-
	Verbal symbolism	-	-

'*' indicates 100% agreement between raters

'- ' indicates that the play behavior was not exhibited by the children

b) Performance of the groups in free play situation:

i) Comparison across control and clinical group:

The play behaviours observed during the free play sessions (session 1 and 2) were analyzed and coded for frequency from the vedio recordings. The free play data consisted of frequency tallies of nonsymbolic, presymbolic and symbolic play behaviours. The total

frequency of each play behaviour was aggregated across basket A and B thus obtaining larger samples of behaviours with enhanced reliability. The mean and standard deviation were calculated. It can be seen from table 6 that the mean frequency of different types of play behaviours observed in late talkers was relatively lesser than that observed in the control group. However the late talkers exhibited higher frequency of manipulation behaviours, i.e., physical manipulation and inspection (kinesthetic & visual exploration) of the toys when compared to the typically developing children.

Table 6:

Mean and standard deviation along with t-values for free play behaviours across both baskets for typically developing children and late talkers

Play behaviour		**Typically developing group**		**Late talking group**		**t-values** (18)
		Mean	SD	Mean	SD	
Non symbolic play	Grouping	5.00	3.16	4.50	4.06	0..31
	Manipulation	8.60	4.59	15.60	8.34	***2.32**
	Social	2.30	1.56	1.10	1.66	1.66
	Unoccupied	2.00	1.76	0.40	0.69	***2.66**
Pre-symbolic play	Functional conventional	10.30	6.53	5.40	3.37	***2.10**
	Functional to self	3.90	4.35	2.90	2.92	0.60
	Functional to other	8.50	6.11	5.80	5.18	1.06
	Sequence A	0.90	1.37	0.20	0.42	1.54
	Sequence B	2.70	3.71	0.30	0.67	2.01
	Sequence C	1.10	1.91	0	0	1.81
	Sequence D	0.40	1.26	0	0	1.00
Symbolic play	Symbolism A	3.10	2.46	1.40	1.64	1.81
	Symbolism B	0.70	.823	.30	.483	1.32
	Symbolism C	0	0	0	0	-
	Verbal symbolism	1.10	1.85	0	0	0.30

- Indicates both are equal, **[*p<0.05]**

The mean values obtained for the various play behaviours of both the groups were subjected to independent t-test to examine the significant difference between the groups. The results of the test (t-values) across both the groups have also been depicted in the table 6. The results indicated that there was a significant difference for manipulation ($t(18)=2.32$), unoccupied ($t(18)=2.66$) and functional conventional play behaviours ($t(18)=2.10$) between the groups at 0.05 level. However, the other play behaviours failed to show any significant difference though the late talkers showed lesser frequency of these play behaviours.

This can be attributed to the scatter in the age groups of the children considered for the study i.e., although they were within a particular age group the children were on the higher and lower end of that age group. Moreover, the late talkers had attended speech-language therapy sessions for an average duration of one week and their parents/caregivers were carrying out the home training programme to improve their speech and language skills which could have influenced their performance.

On closer examination of nonsymbolic type of play behaviours, it can be seen from the table 6 that the mean scores for grouping, social and unoccupied behaviours were more for the control group but the scores obtained for manipulation type of play behavior were lower. Moreover there was a significant difference between the two groups with respect to manipulation and unoccupied behaviours ($t(18) = 2.3$ and 2.6, $p<0.05$) as mentioned earlier. The unoccupied behaviours in the control group consisted of the children moving around the room, checking on with their mothers and later coming back

to the toys for playing. The late talkers, on the other hand, tended to have fewer occurrences of off-play behaviour, but these appeared to be interludes during which the child would sit but not be engaged with the toys. Instead of indulging in visual-kinesthetic meaningless physical exploration of the toys, the typically developing children related objects one to another and played with them by stacking, arranging, and pushing objects together and also engaged in social behaviours. The late talkers, on the other hand, appeared to be more intrigued with the physical structure and affordances of the items and were inclined toward repetitive, kinesthetic, patterned types of play. This could be because they have a poorly defined internal framework of reference with in which to develop new routines and ideas. Many factors may be involved in this tendency, including poorly developed symbolic, conceptual and cognitive skills (Griffiths, 1969: Leonard, 1979). Moreover, amongst these nonsymbolic play behaviours, the mean scores obtained for the unoccupied behaviours was the least, while the manipulation behaviour had the highest scores in both the groups. The social behaviours of the typically developing children consisted of interaction with the adult in the room in an active verbal manner such as posing questions, naming, or requesting, however, the social interaction was more of non verbal and gestural type in the late talkers.

The results obtained in the current study for the manipulation and unoccupied behaviours are in consonance with the results reported by Rescorla and Goosens (1992). However, the results obtained for grouping and social behaviours are not in agreement with their study. In their study the children with SLI-E displayed more grouping behaviours than the normal peers and both the groups engaged in similar frequencies of

social interactional play acts. This could be because of the narrow age group considered by Rescorla and Goosens (1992) which was 24-26 months.

On examination of presymbolic play behaviours across both the groups shown in table 6, the late talkers had lesser scores on all the functional and sequential play behaviours. There was only a significant difference between the two groups on the functional conventional type of play behaviour ($t(18) = 2.10$, $p < 0.05$) as mentioned earlier. The late talkers were less aware of the social-conventional use of the objects in context indicating that their conceptual knowledge was limited when compared to the typically developing group. Amongst these presymbolic play behaviours the control group obtained the highest mean scores for functional conventional play behavior, while the clinical group obtained highest scores for functional to other play behaviour. The least score obtained was for the functional to self type of play behavior in both the groups. Though both the groups of children used the objects in a functionally appropriate manner (late talkers to a lesser extent) and demonstrated some pretend actions using the objects on a recipient such as a doll or a bear, they were less inclined to depict these actions on self. This could be because of the fact that when the child sees many related objects in front of him/her, he/she tries to relate these objects in some manner or the other rather than doing the action on self. Thus the wide variety of toys they are exposed to at a time could have restricted them from performing the action on self. The results obtained in the present study are consistent with the results of Rescorla and Goosens (1992) for all the functional play behaviours except functional conventional play behaviour and with Brown (1975) who reported that these children have difficulty in manipulating materials

in a constructive or meaningful way. But these results appear to diverge from the findings of Lowe (1975), Nicolich (1977), Patterson & Westby (1998) and Casby (2003) who reported that the functional to self play behavior occurs before the functional to other kind of play behavior in the developmental hierarchy of play.

With respect to the functional sequential play behaviours, the late talkers exhibited lesser frequency of sequential play behaviours especially A & B and did not exhibit any sequential play behaviours such as C, D. Although the sequential behaviours were demonstrated by the control group and the clinical group, the mean scores of these were lesser when compared to the other varieties of functional play behaviour with the sequence D occurring the least number of times in the control group. This indicated that the children have also developed sequential play behaviour but to a lesser extent when compared to the other types of play behaviours. During the data analysis it was also observed that late talkers exhibited upto two consecutive sequences each with the same toy during sequential play, whereas the typically developing children exhibited greater number on an average of three transformations and different sequences involving different toys. These findings and observations are in consonance with the study by Rescorla and Goosens (1992) who found a similar trend in both the groups. Cooper et al., (1978) also reported that language impaired children do not appear to develop complex imaginative symbolic play or, if they do, it happens very slowly. This reflects their inability to manipulate and sequence ideas and trends.

The data with respect to symbolic play depicted in table 6 revealed that the mean scores between the control and clinical group were different in the play categories of symbolism and verbal symbolism. The control group exhibited higher frequencies of symbolic play behaviours (A and B) when compared to that of late talkers but these differences obtained were not significant. This could be because very few children in either group engaged in the advanced symbolic play behaviours. Moreover, symbolism C type of play behaviour was not exhibited by both the groups. It was also observed during the data analysis that the control group came up with a variety of symbolic play behaviours such as, using bucket as a cup, using spoon to push the truck, using screw driver as a bottle, using stick as spoon etc. This kind of variety in symbolic play activities was not observed in late talkers. Amongst advanced symbolic play behaviours in both the groups of children symbolic C play behaviour occurred the least followed by B and A type of symbolic play behaviour. This data revealed that the children have progressed into the symbolic representational form of a play where in they substitute one object for another but have not yet developed it entirely.

These results are in consonance with the study done by Rescorla and Goosens (1992). Support can be also be drawn from the study by LeNormand (1985) in which he found that that there appeared to be an orderly progression in symbolic play which provides the coding scheme for language accompanying play.

It is a known fact that proper development of symbolic play requires the perceptual and memory process and the ability to sustain and regulate attention (Ruff 1990; Tamis-Le Monda and Bornstein, 1990, 1996). In object based symbolic play a child has to divide his or her attention between toys, transformation, scheme sequencing and the signifier and signified relationship (Casby, 1997). Thus it would be possible that the late talkers had mild deficits in the higher level functions of the brain which could have resulted in their poor performance in symbolic play. Also research has shown that the children with autism (Tilton & Ottinger, 1964; Ungerer & Sigman, 1981; Doherty & Rosenfeld, 1984); mental retardation (Hulme & Lunzer, 1966; Casby & Ruder, 1983); hearing impairment (Casby & Mc-Cormack, 1985; Spencer, 1996); and Down syndrome (Hill & McCune-Nicolich, 1981) have delays in symbolic play. Several studies have also reported lesser number of spontaneous play, symbolic and sequential and other complex play behaviours in language impaired population (developmental/specific language impairment/expressive language delay) when compared to the language normal children (Lovell, Hoyle, & Siddal, 1968; Cooper, Moodley, & Reynell, 1978; Udwin & Yule, 1982; Terrell, Schwartz, Prelock, & Messick, 1984; Roth & Clark, 1987; Terrell & Schwartz, 1988; Skarakis-Doyle & Prutting, 1988; Rescorla & Goosens, 1992; Casby, 1997).

With respect to the verbal symbolic behaviour depicted in table 6 which involves verbally creating any action, absent person or verbally substituting one object for another, the typically developing group exhibited these behaviours to a greater extent than the late talkers who did not exhibit any verbal symbolism. These results are in consonance with

the study done by Rescorla and Goosens (1992). The typically developing children exhibited greater verbalization during play, however, the late talkers did not show such verbal play behaviours. The verbal interaction during their play was very sparse i.e., no verbal expression was observed and very few children spoke in single word utterances and mostly interacted with gestures and pointing and just looking at the adults' face in the room. The children in the control group tended to name every toy that was picked up and questioned the adult in the room regarding the toys e.g., "what is this?" They also tried to relate the toys with their past experience with it, for e.g., looking at animals the child said, "saw it in the zoo" and also described the action that was being done. Their mean length of utterances ranged from 3 to 4 word sentences and they were more verbose when compared to late talkers. Support for both verbal symbolism and social behaviours can be drawn from the retrieval hypothesis cited in Rescorla and Goosens (1992) which states that children with expressive SLI find deliberate accessing and verbal encoding of stored language representations effortful. Because retrieval is difficult, some children with expressive SLI may also develop a secondary "motivational" deficit, resulting in their making relatively little effort to talk. This hypothesis is consistent with our impression that many late talkers have conspicuous word retrieval and verbal formulation problems and that they often appear to choose not to talk rather than bothering to put their ideas into speech. Similarly, it can be argued that late talkers have some stored information about thematic scenarios, but that this might be less easily triggered than would be the case for toddlers developing language normally. Thus, perhaps because it is less effortful, the child's prepotent response to toys would be to deal with them as physical objects of

manipulation, rather than drawing on stored representations about how these objects can be used in narrative or thematic scenarios.

Thus, one might argue that the parallel deficits found in this study between expressive language and lower levels of symbolic play reflect slower maturation of a complex developmental system of symbol use. This slower maturation would result in a smaller "lexicon" of play schemes and less richness, complexity, and flexibility in that play lexicon. This explanation is compatible with Leonard's (1987) suggestion that children with SLI-E simply fall at the lower end of the normal distribution of abilities in the language/symbolism faculty, rather than manifesting some pathological process or disorder. Also the difference in the verbal play between the late talkers and control group can be explained by the support of (Piaget, 1971) who reported that the use of words is possible only when the child is capable of interiorized imitation i.e., active use of mental images of perceived objects which may be poor in late talkers. Moreover, according to Nelson (1974) the ability to use a symbol independent of particular object or situational support is believed to facilitate the recombination of these symbols into early sentences.

However, the results of the present study are not in agreement with the study done by Terrell and Schwartz (1988) and Kushnir and Blake (1996) who showed no significant differences across the language impaired and normal children in representational or symbolic play actions.

In addition, it was observed that the quality and type of play of the late talkers was different compared to that displayed by the control group. The late talkers involved less number of toys in the free play, i.e., they continued to play with one or two toys through out the session and repeated the same behaviours over time but were able to appropriately use the toys whereas, the typically developing group exhibited a wide variety of play behaviours incorporated more number of toys. Thus the late talkers appeared to be less responsive to the social, thematic, or representational qualities of the toys than the typically developing children. This has also been reported by Rescorla and Goosens (1992) in their study done on children with SLI-E.

b) ii) Comparison of performance between control and clinical group within each age group in free play situation:

The mean of the free play behaviours (nonsymbolic, presymbolic and symbolic) obtained for both the groups of children was analyzed age group wise to see whether any significant differences existed between the groups. The data was subjected to Mann Whitney U test and the results of the same are outlined in the tables 7 & 8 for each age group.

Table 7:

Mean and standard deviation along with $|z|$ *values for free play behaviours between both the groups in the age group of 2-2.6 years*

Play behaviour		**2- 2.6 years**				$\|z\|$
		Typically developing group		**Late talking group**		
		Mean	SD	Mean	SD	
Nonsymbolic play	Grouping	5.60	2.51	5.60	5.27	2.11
	Manipulation	10.40	5.02	19.20	9.93	1.15
	Social	3.00	0.70	1.20	1.78	1.61
	Unoccupied	1.60	0.89	5.00	1.41	2.50
Presymbolic play	Functional conventional	8.40	2.70	5.20	3.03	1.27
	Functional to self	5.00	5.95	3.80	3.70	1.05
	Functional to other	7.80	5.06	3.20	3.56	1.58
	Sequence A	0.60	0.89	0.20	0.44	0.77
	Sequence B	0.60	0.54	0.40	0.89	0.83
	Sequence C	0.20	0.44	0	0	1.00
	Sequence D	0.80	1.78	0	0	1.00
Symbolic play	Symbolism A	2.60	2.60	0.80	1.30	1.31
	Symbolism B	1.00	1.00	0	0	1.93
	Symbolism C	0	0	0	0	0
	Verbal symbolism	1.00	2.23	0	0	1.00

[*p< 0.05]

Table 8:

Mean and standard deviation along with $|z|$ *values for free play behaviours between both the groups in the age group of 2.6-3 years*

Play behaviour		**2.6-3 years**				$\|z\|$
		Typically developing group		**Late talking group**		
		Mean	SD	Mean	SD	
Nonsymbolic play	Grouping	4.40	3.91	3.40	2.51	0.10
	Manipulation	6.80	3.78	12.0	5.04	1.37
	Social	1.60	1.94	1.00	1.73	1.00
	Unoccupied	2.40	2.40	3.60	1.51	0.94
Presymbolic play	Functional conventional	12.20	8.92	5.60	4.03	1.36
	Functional to self	2.80	2.04	2.00	1.87	0.74
	Functional to other	9.20	7.56	8.40	5.54	0.31
	Sequence A	1.20	1.78	0.20	0.44	0.90
	Sequence B	4.80	4.43	0.20	0.44	2.01
	Sequence C	2.20	2.44	0	0	1.90
	Sequence D	0	0	0	0	0
Symbolic play	Symbolism A	3.60	2.51	2.00	1.87	1.17
	Symbolism B	0.60	0.54	0.40	0.54	0.60
	Symbolism C	0	0	0	0	0
	Verbal symbolism	1.20	1.64	0	0	1.50

[*p< 0.05]

It can be inferred from the tables 7 & 8 that there was no statistically significant difference among the groups within both the younger and the older age group. This could have occurred because of the smaller sample size considered for the study. Both in the younger and older age group, the clinical group had lesser number of presymbolic and symbolic play behaviours. The younger typically developing children had more of social and manipulation behaviors while the unoccupied behaviours occurred to a lesser extent. The grouping behaviours obtained were the same for both the groups of children. In the older group of typically developing children, manipulation and unoccupied behaviours were lesser whereas grouping and social behaviors were exhibited to a greater extent.

b) iii) Comparison of performance across age groups in both groups of children in free play situation:

The difference in the free play behaviours across age groups with in the control and clinical group was examined. The mean of the free play behaviours in two different age groups considered viz. 2- 2.6 years and 2.6-3 years, was subjected to independent t-test to see if any statistically significant differences existed between the two age groups. The results of the test across age groups in the typically developing group have been depicted in table 9.

Table 9:

Mean and standard deviation along with t-values for free play behaviours across both baskets for typically developing children across age groups

Play behaviour		**Typically developing group**				**t-value (8)**
		2- 2.6 years		**2.6-3 years**		
		Mean	SD	Mean	SD	
Nonsymbolic play	Grouping	5.60	2.51	4.40	3.91	0.57
	Manipulation	10.4	5.02	6.80	3.78	1.28
	Social	3.00	0.70	1.60	1.94	1.51
	Unoccupied	1.60	0.89	2.40	2.40	0.69
Presymbolic play	Functional conventional	8.40	2.70	12.20	8.92	0.91
	Functional to self	5.00	5.95	2.80	2.04	0.78
	Functional to other	7.80	5.06	9.20	7.56	0.34
	Sequence A	0.60	0.89	1.20	1.78	0.67
	Sequence B	0.6	0.54	4.80	4.43	2.10
	Sequence C	0.20	0.44	2.20	2.44	1.61
	Sequence D	0.80	1.78	0	0	1.00
Symbolic play	Symbolism A	2.60	2.60	3.60	2.51	0.61
	Symbolism B	1.00	1.00	0.60	0.54	2.44
	Symbolism C	0	0	0	0	0
	Verbal symbolism	1.00	2.23	1.20	1.64	0.16

Table 10:

Mean and standard deviation along with t-values for free play behaviours across both baskets for the late talking group across age groups

Play behaviour		**Late talking group**				**t-value (8)**
		2- 2.6 years		2.6-3 years		
		Mean	SD	Mean	SD	
Nonsymbolic play	Grouping	5.60	5.27	3.40	2.51	0.84
	Manipulation	19.20	9.93	12.0	5.04	1.44
	Social	1.20	1.78	1.00	1.73	0.18
	Unoccupied	5.00	1.41	3.60	1.51	1.41
Presymbolic play	Functional conventional	5.20	3.03	5.60	4.03	0.17
	Functional to self	3.80	3.70	2.00	1.87	0.97
	Functional to other	3.20	3.56	8.40	5.54	1.76
	Sequence A	0.200	0.44	0.20	0.44	0
	Sequence B	0.40	0.89	0.20	0.44	0.44
	Sequence C	0	0	0	0	0
	Sequence D	0	0	0	0	0
Symbolic play	Symbolism A	0.80	1.30	2.00	1.87	0
	Symbolism B	1.00	1.00	0.40	0.54	1.17
	Symbolism C	0	0	0	0	0
	Verbal symbolism	0	0	0	0	0

It can be inferred from the tables 9 & 10 that there was no statistically significant difference across both the age groups in both the control and the clinical group. However, a developmental trend was observed in the typically developing group in which the younger group showed more number of nonsymbolic play behaviours (grouping and manipulation) compared to the older group who exhibited more of presymbolic (except for functional to self) and symbolic behaviours. This revealed that the older group exhibited more sophisticated play behaviours compared to the younger group, although the younger group was more social. This indicates that the younger group of children are gradually advancing into the sophisticated play types of symbolic and sequential play.

These findings can be supported with the studies of Nicolich, (1977); Patterson and Westby, (1998); Katz, (2001); and Casby, (2003) who reported that the play typically follows a developmental progression in a sequential pattern: simple to complex, self to others, concrete to abstract. When new types of play develop, 'older' types of play do not disappear, although they decrease in frequency. The results of this study are also in consonance with the study done by Lyytinen, Laakso, Poikkeus, and Rita (1999) where in they found a developmental trend from the younger age to the older groups in the maturation of play behaviours. In addition, McCune-Nicolich (1981) suggested that multischeme combination of play (organize play into patterns) emerges after two years of age and becomes more matured near three years of age (Flavell, 1985).

This developmental trend was not observed in the late talking group across their age. Some of the play behaviours are scored higher by the younger group whereas some

are scored higher by the older group. This lack of a developmental trend which was seen in the late talking group indicated that there was a variable performance among this group and they had delayed/deviant play patterns.

c) Performance in structured play situation

i) Comparison across control and clinical group:

The play behaviours exhibited in the structured play sessions (I & II) were rated using the 3-2-1 scoring system using different toy sets. The first session assessed the spontaneous occurrence of desired play behaviours whereas session II comprised of eliciting the play behaviour using social mediation strategies such as instruction and modeling, if the desired play behaviour did not occur spontaneously in session I. As mentioned earlier in the method, a desired play scheme occurring spontaneously during session I was scored as 3, the same scheme exhibited with instruction alone in session II was scored as 2, and play exhibited after modeling (also in session II) was scored as 1. No response was scored as 0. The maximum possible score obtained by a child was 5 for each target behaviour using which the weighted play score was calculated depending on the total number of play behaviours elicited.

The mean of the scores obtained in the structured play (session I & II) were computed for both the groups. The control and the clinical group were compared using independent t-test to investigate whether significant difference existed between the groups in each of these sessions. The data in the table 11 given below depicts the

maximum play behaviours in each targeted in each sets, mean, SD and the t-values for both the groups for each toy set used.

Table 11:

Mean, SD and t-values across both the groups during the structured play session

Toy sets	**Structured play session**	**Maximum play behaviour**	**Typically developing group**		**Late talking group**		**t-value (18)**
			Mean	SD	Mean	SD	
Set 1	Session I	12	3.30	1.40	2.30	1.15	1.67
	Session II	12	9.10	2.20	8.10	1.59	1.15
Set 2	Session I	12	3.30	1.63	3.80	2.20	0.57
	Session II	12	9.60	2.31	8.90	1.59	0.78
Set 3	Session I	11	3.40	1.57	2.40	1.50	1.45
	Session II	11	9.10	1.91	7.90	2.28	1.27
Set 4	Session I	8	2.40	1.73	2.70	1.05	0.60
	Session II	8	7.70	0.67	7.50	1.08	0.49

It can be seen from the above table that there was no statistically significant difference between the control and clinical group in both the structured play sessions with respect to the four toy sets used. Although the typically developing children performed slightly better than the late talking children, for two of the toy sets with respect to session I and all the toy sets in session II there was no statistically significant difference in scores.

The groups were also compared with respect to each type of targeted play behaviour during structured play across all the toy sets. The table mentioned below depicts the maximum weighted play score for each play behaviour and the mean scores that were obtained by the children during structured play without and with social mediation. To examine the differences in performance of both the control and the clinical group with respect to different play behaviours the mean scores were subjected to MANOVA and the F values are also depicted in the table 12. As already mentioned, four different toy sets were presented and the desired play behaviors ranged in sophistication from functional conventional use of the toys to more mature and/or complex functional to other play, functional to self, sequences, and symbolism.

Table 12:

Maximum weighted scores, Mean, SD and F-values of various play behaviours during structured play (session I and II) for typically developing group and late talkers

Play code	**Maximum Weighted score**	**Typically developing group**		**Late talking group**		
		Mean	SD	Mean	SD	F (1,16)
Functional conventional	20	20.00	0	19.10	2.84	1.00
Functional to other	40	27.30	7.08	24.70	4.96	0.96
Functional to self	30	12.20	5.43	13.30	6.29	0.17
Symbolism A	20	10.80	3.58	8.80	3.64	1.74
Symbolism B	20	7.00	2.70	4.90	3.14	2.88
Symbolism C	20	3.20	1.61	1.60	1.42	***5.81**
Sequence A	20	8.00	3.12	3.80	1.61	***16.72**
Sequence B	15	6.60	2.83	3.00	1.76	***11.46**
Sequence C	20	4.60	3.56	1.80	1.22	***6.53**
Sequence D	20	1.40	1.42	0.50	0.70	2.84

[*p< 0.05]

The results showed a significant difference between both the groups in the following play behaviours viz. symbolism C ($F(1,16)= 5.81$, $p<0.05$) and sequence A ($F(1,16)=16.72$, $p<0.05$), sequence B ($F(1,16)=11.46$, $p<0.05$) and sequence C ($F(1,16)=6.53$, $p<0.05$). In all remaining play behaviours although the late talkers

obtained lesser mean scores than the typically developing group, the difference was not significant. However the late talkers scored slightly higher in the functional to self behavior where as in free play the typically developing group scored higher than the late talking group. This can be attributed to variables such as the limited number of toys present in each set in structured play. In free play the large number of toys put together might have brought about greater variety of functional to self kind of play behaviours as the child was allowed to choose the toy of his or her own interest. The higher scores of the typically developing group compared to the late talking group across all play behaviours other than for the functional to self type of play behaviour has been depicted in the figure given below.

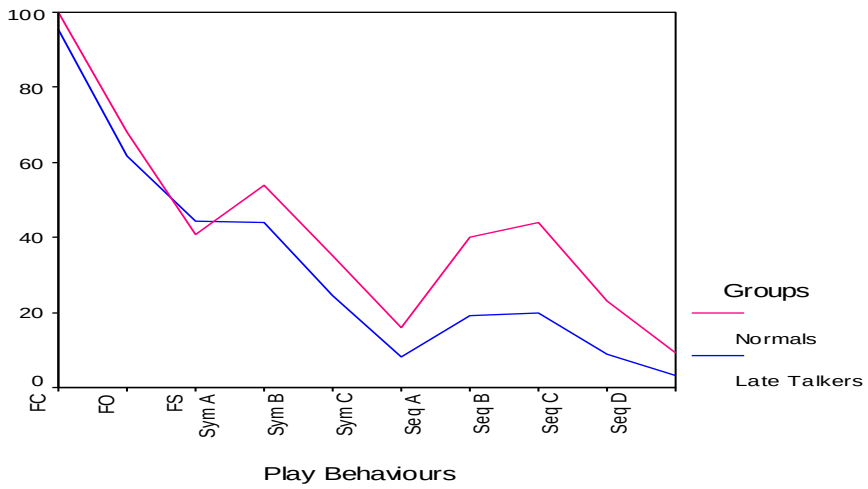

Figure 2: Line graph indicating percentage mean weighted scores of various play behaviours in structured play for both the groups.

c) ii) Comparison of performance between control and clinical group within the same age group in structured play situation:

The mean of the play behaviours (presymbolic and symbolic) obtained during the structured play session one and two for both the groups of children was analyzed age group wise to see whether any significant differences existed between the groups. The data was subjected to Mann Whitney U test and the results of the same are outlined in the tables 13 & 14 for each age group.

Table 13:

Maximum weighted score, Mean and standard deviation along with $|z|$ value for play behaviours between both the groups in the age group of 2-2.6 years in the structured play situation.

Play behaviour	**Maximum weighted score**	**2- 2.6 years**				**$\|z\|$ value**
		Typically developing group		**Late talking group**		
		Mean	SD	Mean	SD	
Functional conventional	20	20.00	0	18.20	4.02	1.00
Functional to other	40	24.40	6.02	23.00	3.31	0
Functional to self	30	13.20	5.35	11.00	8.51	0.21
Symbolism A	20	8.60	2.30	8.20	4.20	0.42
Symbolism B	20	8.00	2.34	6.40	3.97	1.05
Symbolism C	20	3.40	1.94	2.40	1.51	1.00
Sequence A	20	7.60	1.81	3.40	1.94	1.79
Sequence B	15	7.60	2.88	3.00	0.00	***2.79**
Sequence C	20	3.00	2.12	2.60	1.14	0.42
Sequence D	15	1.40	1.67	0.40	0.55	1.01

[* p<0.05]

Table 14:

Mean and standard deviation along with $|z|$ *value for play behaviours between both the groups in the age group of 2-2.6 years in the structured play situation*

Play behaviour	**Maximum weighted score**	**2.6-3 years**				$\|z\|$ **value**
		Typically developing group		**Late talking group**		
		Mean	SD	Mean	SD	
Functional conventional	20	20.00	0	20.00	0	0
Functional to other	40	30.20	7.46	26.40	6.10	0.84
Functional to self	30	11.20	5.93	11.20	5.93	1.37
Symbolism A	20	13.00	3.39	9.40	3.36	1.36
Symbolism B	20	6.00	2.91	9.40	3.36	1.59
Symbolism C	20	3.00	1.41	0.80	.836	***2.25**
Sequence A	20	9.60	3.50	3.40	1.94	***2.54**
Sequence B	15	5.60	2.70	3.00	2.64	1.26
Sequence C	20	6.20	4.20	1.00	0.71	***2.15**
Sequence D	15	1.40	1.34	0.60	0.89	1.01

[*p<0.05]

The overall mean scores depicted in the tables 13 & 14 revealed that in the age group of 2- 2.6 years, the late talking children scored poorer compared to the typically developing group. A similar trend was obtained for the higher age group except for the symbolism B and functional conventional type of play behaviour, but these were not statistically significant. Amongst all the targeted behaviours, a significant difference existed between the groups w.r.t the sequence B type of play behaviour ($|z| = 2.79$, $p<0.05$) in the younger age group, whereas in the older age group there was a statistical significance seen in symbolism C ($|z| = 2.25$, $p<0.05$), sequence A ($|z| = 2.54$, $p<0.05$) and sequence C ($|z| = 2.51$, $p<0.05$). A statistically significant difference was not seen in the other play behaviours possibly because of the small sample size considered for the study.

c) iii) Comparison of performance across age groups in both groups of children in structured play situation:

The differences with respect to each type of targeted play behaviour in structured play across the age groups within each group were also compared. The mean of the play behaviours in two different age groups considered viz. 2- 2.6 years and 2.6-3 years, was subjected to statistical analysis (independent t-test) to see if any significant differences existed between the two age groups. The table 15 and 16 given below depicts the maximum weighted play score, mean scores and the t-values for each play behaviour that were obtained by the typically developing children and the late talking children during structured play without and with social mediation

Table 15:

Maximum weighted scores, Mean, SD and t-values of various play behaviours in structured play across age group in typically developing children.

		Typically developing group				
Play code	**Maximum weighted score**	**2-2.6 years**		**2.6-3 years**		**t-value (8)**
		Mean	SD	Mean	SD	
Functional conventional	20	20.00	0	20.00	0	1.00
Functional to other	40	24.40	6.02	30.20	7.46	1.35
Functional to self	30	13.20	5.36	11.20	5.93	.55
Symbolism A	20	8.60	2.30	13.0	3.39	***2.40**
Symbolism B	20	8.00	2.35	6.00	2.91	1.19
Symbolism C	20	3.40	1.95	3.00	1.41	0.37
Sequence A	20	7.60	1.82	9.60	3.50	1.81
Sequence B	15	7.60	2.88	5.60	2.70	1.13
Sequence C	20	3.00	2.12	6.20	4.20	1.51
Sequence D	20	1.40	1.67	1.40	1.34	0

[*p< 0.05]

Table 16:

Weighted scores, Mean, SD and t-values of various play behaviours in structured play across age group in late talking group.

Play behaviour	**Maximum weighted score**	**Late talking group**				
		2-2.6yrs		**2.6-3yrs**		**t-value(8)**
		Mean	SD	Mean	SD	
Functional conventional	20	18.20	4.02	20.0	0.00	1.00
Functional to other	40	23.00	3.31	26.40	6.10	1.09
Functional to self	30	11.00	8.51	11.20	5.93	1.18
Symbolism A	20	8.20	4.20	9.40	3.36	0.49
Symbolism B	20	6.40	3.97	9.40	3.36	1.64
Symbolism C	20	2.40	1.51	.80	.83	2.06
Sequence A	20	3.40	1.94	3.40	1.94	0.76
Sequence B	15	3.00	.00	3.00	2.64	0.00
Sequence C	20	2.60	1.14	1.00	.70	***2.66**
Sequence D	15	.40	.54	.60	.89	0.42

[*p<0.05]

It can be seen from the table 15 & 16 that in general the older children had higher mean scores when compared to the younger children except for functional to self, symbolic play B and sequence B. Both the groups performed comparably on functional conventional type of play. Moreover there was a significant difference between the groups for symbolism A type of play behaviour ($t(8)=2.40$, $p>0.05$). In the late talking group, the older children performed better on most of the play behaviours except

symbolism B and sequence C. There was a significant difference in the sequence C ($t(8)=2.66$, $p<0.05$) type of play behaviour where the older children showed less number of play behaviour. Both the groups performed comparably on sequence A and B.

Thus in both the groups the younger children performed better compared to the older children on a few play behaviours. A possible explanation for this discrepancy may lie in the scatter in the groups of the children considered for the study as mentioned earlier.

ii) Comparison between both the groups w.r.t different toy sets

The group difference in play behaviour with respect to different toy sets were analyzed. These mean values obtained were subjected to paired t-test to analyze the group differences across toy sets. These weighted play score, mean and SD values obtained along with the F values obtained for both the groups are depicted in table 17.

Table 17:

Maximum weighted scores, Mean, SD and t-values during structured play with toy sets, for typically developing and late talking group.

Toy sets	**Maximum weighted score**	**Typically developing group**		**Late talking group**		**t-value (18)**
		Mean	SD	Mean	SD	
Set 1	60	25.00	7.55	17.20	4.91	***2.73**
Set 2	60	28.00	6.74	22.10	7.75	1.81
Set 3	55	25.70	10.18	16.80	6.46	***2.33**
Set 4	40	22.00	4.54	17.30	4.13	***2.41**

[*p<0.05]

It is seen from the table 17 that the typically developing group performed better when compared to the late talking group with respect to all the four sets and this difference was statistically significant for three sets i.e., set 1, ($t(18)=2.73$, $p<0.05$), set 3 ($t(18)= 2.33$, $p<0.05$) and set 4 ($t(18)=2.41$, $p<0.05$). However with respect to set 2 the difference was not significant. The possible explanation for this could be the familiarity factor of the items included in set 2 (comb, brush, quilt, bear). These objects are commonly found in every household and are used on a daily basis. This resulted in late talking group performing better on this set when compared to the other sets. This finding is not in consonance with the study done by Rescorla and Goosens, (1992). They found a significant difference in performance between the two groups only on sets 2, 3, & 4.

d) Performance of the groups under social mediation strategies such as modeling and instruction

i) Comparison across session I and II of structured play

The performance of the groups between the structured play session I and II were compared. Session I was carried out without the use of any strategy while in session II strategies such as instruction and modeling were incorporated. The manipulation of physical and social context in this study made it possible to examine the various kinds of play behavior under various kinds of enhancing environmental condition by providing instruction and modeling. The mean scores obtained in each of the sessions were subjected to independent t-test to find whether any significant differences existed between both the sessions in both the groups. The maximum play behaviour in each toy set, mean, SD and the results of the test set wise has been represented in the table 18 below.

Table 18:

Mean, SD and t-values number of targeted responses in structured play (session I) vs. structured play (session II) by groups.

Toy sets	**Structured play session**	**Max. play behaviour**	**Typically developing group**			**Late talking group**		
			Mean scores	SD	t-value (9)	Mean scores	SD	t-value (9)
Set 1	Session I	12	3.30	1.40		2.30	1.15	
	Session II	12	9.10	2.20	***9.78**	8.10	1.59	***10.47**
Set 2	Session I	12	3.30	1.63		3.80	2.20	
	Session II	12	9.60	2.31	***8.61**	8.90	1.59	***5.82**
Set 3	Session I	11	3.40	1.57		2.40	1.50	
	Session II	11	9.10	1.91	***9.26**	7.90	2.28	***11.00**
Set 4	Session I	8	2.40	1.73		2.70	1.05	
	Session II	8	7.70	0.67	***14.45**	7.50	1.08	***8.66**

[*p<0.01]

The data depicted in the table 18 revealed there was a significant difference between structured play (session I and II) in both the groups. This difference was significant for all the four sets of toys used ($p<0.01$). Thus it can be inferred that the frequency of the targeted responses increased with social mediation (structured play session II) provided by the experimenter. Although the late talkers did know and understand the conventional use of the objects, they did not initiate to come up with

related symbolic activities but when they were prompted to do so by verbal or gestural instructions and modeling they were readily able to carry out activities meaningfully.

The increase in the percentage of the performance levels of both the groups of children in the presence of social mediation strategies (instructions and modeling) have been depicted in the figures given below.

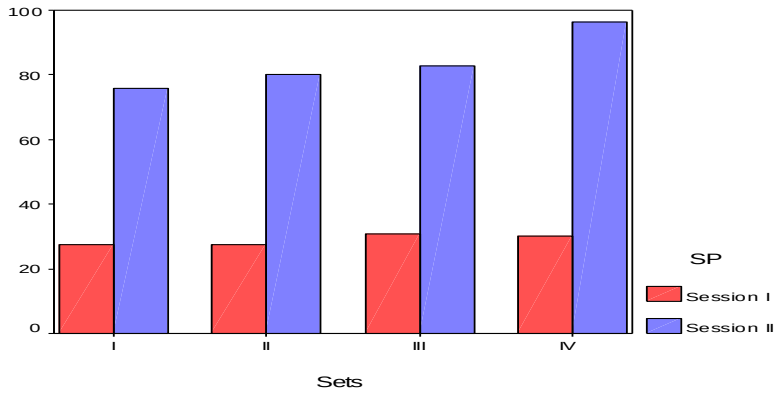

Figure 3: Bar graph representation of the percentage of mean number of targeted responses in structured play (session I) vs. structured play (session II) in typically developing group.

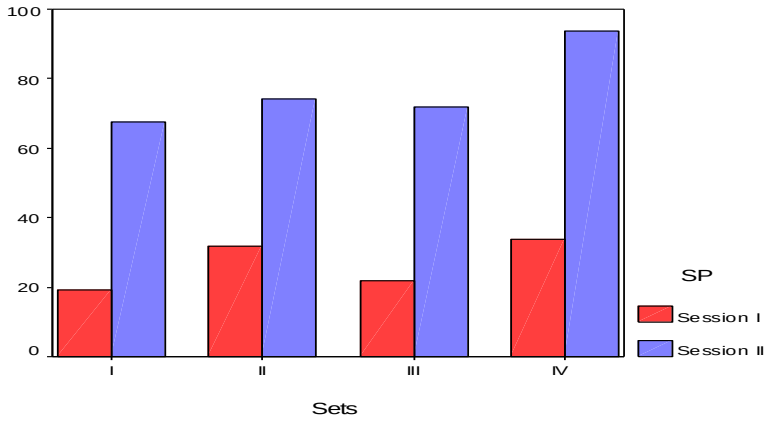

Figure 4: Bar graph representation of the percentage of mean number of targeted responses in structured play (session I) vs. structured play (session II) in late talkers.

Support can be drawn from the Vygotskian perspective (1980) which stated that enhancing conditions such as instruction and modeling allows the child to perform at higher level of functioning than he/she is able to manage when playing independently without an adult play partner. The positive changes that social mediation brings about in the play behaviours and how it helps to trigger matured forms of play has also been demonstrated by the studies done by Watson & Fischer, (1977); Largo & Howard, (1979); Fenson & Ramsay, (1981) and Nelson (1986).

These results are also in consonance with the study by Rescorla and Goosens (1992). According to them children with expressive SLI have some stored information about thematic scenarios, but that this might be less easily triggered than it would be the case of toddlers developing language normally. Thus because it is less effortful, the child's prepotent response to toys would be to deal with them as physical objects of manipulation rather than drawing on stored representations about how these objects can be used in narrative and thematic scenarios.

The qualitative impression is that late talking children often seemed at a loss as to how to proceed to use the toys provided when playing alone. For example, they would pick up a baby doll and shake it; although sitting within arm's length of a quilt, pillow, brush, bottle, spoon, and cup, they would not use these objects in conjunction with the doll. That they had knowledge of the function of these objects became obvious when the experimenter joined in with the play and would either instruct or model saying, "Let's put the baby to bed," at which point the child then immediately spread the quilt. This

suggests that the children late talkers were capable of drawing on stored representations of daily life scenarios (e.g., bedtime), but that often they tended not to do so spontaneously.

However, these results are not in agreement with studies by Kennedy, Sheridan, and Radlinski (1991) and Spencer (1996) who reported that social mediation like modelling or adult intervention did not show any significant improvement in enhancing the child's play activity.

As anticipated the use of scenario triggering toy sets and the addition of instructions and modeling conditions served to increase the play behaviours in both the groups; however even with social mediation provided by modeling, the late talking children tended to lag behind the typically developing children in play. The results of the present study are also similar to those reported by Rescorla and Goosens (1992).

d) ii) Comparison between the control and clinical group on these two conditions viz. instruction and modeling

Independent t-test was carried out to find if any significant difference existed between the late talkers and typically developing group in each of the social mediation strategy viz. instruction and modeling. The mean, SD and the t-values are depicted in the table 19 given below.

Table 19:

Mean, SD and t-values across both the groups under conditions of instruction and modeling during structured play (session II)

Toy sets	**Max.**	**Instructions**				**t-value (18)**	**Modeling**				**t-value (18)**
		Typically developing group		**Late talking group**			**Typically developing group**		**Late talking group**		
		Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Set 1	12	4.50	2.22	2.30	1.25	***2.72**	2.50	1.43	4.90	1.28	***3.94**
Set2	12	7.00	2.35	2.60	1.57	***4.90**	1.00	0.94	5.70	1.33	***9.08**
Set3	12	6.10	2.55	3.00	2.16	***2.92**	1.40	0.69	4.10	2.13	***3.80**
Set4	12	5.50	1.58	1.90	1.19	***5.74**	0.90	1.10	4.60	1.64	***5.9**

[*p= <0.01]

The data in the table 19 revealed that typically developing group exhibited more number of play behaviours in each set of toys with instructions alone and required modeling to elicit the remaining few play behaviours. The late talking group exhibited lesser number of play behaviours with instructions alone and required modeling to elicit the majority of play behaviours.

There was a significant difference between the performance of both the groups with respect to instruction and modeling on all the four sets at $p<0.01$ level. Thus the typically developing children were more likely to perform the desired play behaviour spontaneously or with instructions only, while the late talkers tended to need the final modeling phase to produce the play behavior

e) Relationship between play and language

An attempt was made to study the relationship between play and language. The age equivalent language scores were obtained by administering the 3-Dimensional Language Acquisition Test (3D-LAT) and the age equivalent play scores were obtained using the Play Assessment Checklist. Although 3D-LAT yields receptive, expressive and cognitive language age, to study the correlation between play and language age only the receptive and expressive language age were considered. The Spearman's rank correlation coefficient was applied to examine the correlation between the two viz. the play age and the language age between the age group of 2-2.6 yrs and 2.6-3 years in both the groups of children. This was carried out to investigate whether the associations between play and language changed with increasing age and language abilities. The table 20 given below depicts the correlation values obtained between play age and language age across two different age groups in both typically developing and late talking children.

Table 20:

Correlation values between play age, receptive and expressive age across the age groups in typically developing group and late talkers.

	3D-LAT							
	Typically developing group				**Late talking group**			
	2-2.6 yrs		2.6 – 3yrs		2-2.6 yrs		2.6 – 3yrs	
Play assessment checklist	RLA	ELA	RLA	ELA	RLA	ELA	RLA	ELA
PLA	a	a	0.60	0.54	0.83	**1.00****	0.73	**1.00****

[p< 0.01]**, RLA- Receptive Language Age, ELA - Expressive Language Age, PA - Play Age. a- represents constant value and therefore could not be computed.

The data in table 20 indicates that the play age remained constant in the age group of 2 – 2.6 years in the typically developing children, therefore the correlation among the play age and other domains could not be computed. However, in the higher age group, that is, 2.6-3 years, the data revealed that there was a correlation between play age and receptive and expressive language age, but this was not statistically significant. A closer look at the data revealed that the correlation was high between receptive language age and play age (r=.60) when compared to the correlation between expressive language age and play age (r=0.54).

In the late talking group, play age correlated with receptive and expressive language age in both the age groups. The correlation between play age and expressive language age was significant ($p<0.01$) in both the age groups considered, while the

correlation between play and receptive language age in the lower and higher age group was not significant. It was also seen that the correlation between play and the receptive language age was higher in the younger age group (r=0.83) than the older ahe group (r= 0.73). It can be inferred that across the early age of 2-3 years the play correlates with expressive rather than receptive language in late talkers. However in late talkers it was observed that play age correlated more with receptive language in both the age groups (r=0.83, 0.73) than in the typically developing group (r=0.60). This could be attributed to the fact that that there was not much variation in the play age and the receptive language age across subjects.

Thus it can be inferred that play is associated with language and hence these are mediated by a general developmental factor. The results of the present study are in agreement with several studies carried out on typically developing children (Nicolich, 1955; Piaget, 1962; Bates, 1976; Bates, Benigni, Bretherton, Camaioni, & Volterra, 1977; Shimada et al., 1979; Westby, 1980; McCune-Nicolich, 1981; Bruskin, 1982; Baron-Cohen, 1987; Casby & Della Corte, 1987; Beeghly et al., 1990; Ogura, 1991; Doswell et al., 1994; McCune, 1995; Lyytenin et al., 1997; Krafft & Berk, 1998; Lifter & Bloom, 1998; Tomasello et al., 1999; Kitty, 2000; Lewis et al., 2000). They demonstrated a strong relationship between play and early communication and language since both depend on the ability to use symbols. Moreover the parallel developments in both play and language were explained as deriving from a common underlying capacity for cognitive representation (McCune, 1995). The same relationship was also observed in the studies carried out on other disordered population such as children with Down syndrome

(Shimada, 1990; Fewell, Ogura, Notari-syverson, & Wheeden, 1997; Sigman & Ruskin, 1999), in hearing impairment (Casby & Mc Cormack, 1985; Spencer, 1996), in autism spectrum disorder (Gould, 1986; Mundy et al., 1987; Stanely & Konstantareas**,** 2007) and in mental retardation (Whittaker,1979; Casby, 1983; Beeghly et al., 1990; Toole & Chiat, 2006). The finding that higher expressive language ability was associated with better developed symbolic play skills was reported in many studies (Ungerer & Sigman, 1984; Whyte & Owens, 1989).

Various studies which have also confirmed strong associations between receptive language skills and symbolic play in the first part of the second year of life of typically developing children (Largo & Howard 1979; Thal, Fenson, Whitesell, & Oakes, 1989; Tamis-LeMonda, 1998; Catherine, LeMonda, & Bornstein, 1990; Bornstein, 1993; Beeghly & Laakso et al., 2000). According to Piaget, (1962) and Werner and Kaplan, (1963), receptive language and symbolic play are considered salient indicators of representational competence. They are based on similar symbolic-conceptual processes.

However, several studies have also revealed that that the interdependencies between language and symbolic play skills in language-normal children change over time (Kelly & Dale, 1989; Kennedy et al., 1991; Ogura, 1991; Shore et al., 1991; Doswell et al., 1994; Namy & Waxman, 1998). For example Dixon and shore (1991, 1993) suggested that by the end of second year children's play content and interests change and then play and language start to follow different developmental trajectories as a function of societal expectations. Lambardino, Stein, Kricos, and Wolf (1986) found that the

language impaired and the language-normal children differed in their play language relationships when the structural metrics of mean length of utterance and mean length of gestures was used. Thus it could be possible that play and language cease to be related to each other as they grow. Further longitudinal studies need to be carried out to confirm the same.

The results obtained w.r.t the late talking group that play correlated significantly with expressive language age indicates that play is delayed and is parallel to their delayed expressive abilities. These findings are in consonance with the study by Rescorla and Goossens (1992) who also observed a parallel between delayed symbolic play and delayed expressive language in children with SLI-E.

The delayed expression seen in late talkers can be related to their lower scores in the play behaviours, that is, it can be argued that their expression determined their play. A study carried out by Shore (1986) and Kennedy, Sheridan, and Radlinski (1991) reported of significant relation between the multiword usage and advances in combinatorial abilities in symbolic play where the children who were at the single word stage of language development tended to produce single schemed play and children who produced multiword utterances had a multistaged play. Westby (1980) stated that children's ability to use language in a functional or flexible manner coincided with the emergence of predictable symbolic play routines. McCune (1995) brought about an interesting relationship between play levels and language development where in the transitions from

one play level to the next normally preceded the occurrence of the related language ability.

f) Toy and play preference across genders

It was observed during the data collection and coding that there was a slight difference in the way the boys and the girls approached the toy sets and played with them. These differences were observed in the free and structured play as well. A closer look revealed that it was the content of toy sets which bought out the differences between the genders.

The first set of toys used during structured play contained a doll, bottle, quilt and a stick and a difference was observed between male and female children of both groups while they played with this set. The female group enjoyed and readily showed all the expected play behaviours when compared to the male group and required lesser number of instructions and or modeling to come up with the targetted play behaviours in this particular set. They readily fed the doll, put it to bed, kissed the doll, patted the doll to sleep etc. while the male group indulged in more of manipulative kind of play behaviours with this particular set.

With respect to the set two which consisted of bear, brush, comb, and quilt, the children showed most of the desired behaviours such as spontaneously brushing the bear, combing its hair and putting it to sleep. Here a similar difference was observed as in set one, that is, the male group involved in manipulative behaviours such as pushing and

shaking the doll and functional to self play behaviours like brushing and combing oneself, where as the female children enjoyed brushing and combing the doll.

The third set of toys consisted of horse, little men, soap, bucket, mug, and blocks. A similar difference as in set one and two in toy and play preference was not evident in this particular set. This could be because both the male and the female group were familiar with these toys.

A difference was also evident on the fourth set of toys which included truck, tools, little men, stick and blocks. It was observed that the male group came up with more pretend behaviours and enjoyed playing with this particular set, for e.g., the boys pretended to fill in sand into blocks and transport it, pretended to work in a construction place, repaired the vehicle with tools, rode men on truck etc. Although the female group did play with the toys it was more of manipulation behavior that was exhibited by them, e.g., moving truck to and fro, repairing the truck etc. but on the whole very few innovative pretend behaviours were seen in this group.

In general, it was observed that the girls preferred to play with toys such as doll, bottle, quilt, bear, brush, comb, etc. whereas, the boys preferred toys such as tool kit, truck, sticks and blocks. The free play session also revealed similar kind of toy and play preferences across the gender. It was also seen that the female children both in typically developing and late talking group were observed to be more verbose when compared to the male children.

These observations are in consonance with the findings reported by Singer and Singer (2001), Lowe (1975), Malone and Langone (1995) and Lytinnen et al. (1999). They found that adventure themes, fantasy characters, superheroes, and spacemen were the favored pretend play of boys while girls indicated a clear preference for family pretend roles (mother, father, baby), playing "house," and dress-up clothes and they performed more of such activities relating doll to bed blanket and bed, combing own hair, handling doll, blanket, pillow etc. The toys used by girls tend to be of a more passive nature—dolls, toy stoves, tea sets, carriages—whereas the boys were more interested in playing with the cars, trucks, rocket ships, boats, mechanical sets, miniature tools, and toy weapons. The young boys engaged in more of repetitive motor movements, whereas young girls demonstrated more actions of organization and arranging. The observation that girls were more verbose than boys are in consonance with the study by Bornstein, Cote, and Andre, (2000). There has also been studies which report no significant gender difference in 1 ½ - 3 year old typically developing children (Kitty, 2000).

CHAPTER 5

SUMMARY AND CONCLUSIONS

Play is a universal human activity that blends cognitive, social, emotional, linguistic and motor components. When children play they enact and use their knowledge and skills as they vary and create activities. Observing children playing provides information about children's knowledge and views of the world. We can also observe how children communicate as they play. Play typically follows a development progression in a sequential pattern from early sensorimotor–exploratory and adaptive interactions with objects to fairly elaborated symbolic play (Casby, 2003). Symbolic/pretend play involves the representational use of objects – pretending one object represents another for example, using a hairbrush to represent a microphone; pretending to do something or acting out a concept as perceived by the performer (with or without the object present or with an object representing another object) or represent increasingly diverse roles in play (be someone or pretending through other inanimate objects, e.g., has a doll, pretend to feed another doll).

There is a critical link between the development of symbolic play and understanding and use of symbolic language. Symbolic play reflects both symbolizing ability and conceptual knowledge and therefore is considered to have closer links to language (Lewis et al. 1992, 2000). The infants' early knowledge about the world of objects is reflected in their symbolic play behavior which contributes to later language

development. Symbolic play skills are highly representational and abstract and an assessment of the same would provide us with an insight about the child's communicative abilities. Although, many studies carried out in the West reveal parallel relationship between play and language (Nicolich, 1955; Piaget, 1962; Bates, 1976; Bates, Benigni, Bretherton, Camaioni, & Volterra, 1977; Shimada et al., 1979; Westby 1980; McCune-Nicolich, 1981; Baron-Cohen, 1987; Casby & Della Corte, 1987; Beeghly et al., 1990; Ogura, 1991; Doswell et al., 1994; McCune, 1995; Lyytenin et al., 1997; Lifter & Bloom, 1998; Tomasello et al., 1999; Kitty, 2000), some studies have evidenced mixed results. Some studies have also revealed that the interdependencies between language and symbolic skills change over time. The symbolic play abilities of children with language impairment (developmental/specific language impairment/expressive language delay) also have been studied by many investigators population (Lovell, Hoyle, & Siddall, 1968; Udwin & Yule, 1982; Terrell, Schwartz, Prelock, & Messick, 1984; Roth & Clark, 1987; Terrell, & Schwartz, 1988; Skarakis-Doyle and Prutting, 1988; Rescorla & Goosens, 1992; Casby, 1997) who found that these children do not appear to develop complex imaginative symbolic play or, if they do, it happens very slowly.

Thus although many studies have been carried out in the western countries on typically developing children, the results of these studies are not consistent. There is a general consensus that research should focus on relationships between specific dimension of play and language, because general levels of sensorimotor and play development have not shown consistent relationship to general stages of language development (Bates et al., 1979; McCune Nicolich, 1981; Rice, 1983). Moreover, there are only limited number of

studies which investigated the symbolic play behaviours and its relationship to language especially in late talking children (expressive language delay) in the age group of 2-3 years and also very limited number of studies in the Indian context. Therefore the present study was planned. The study aimed at investigating the differences in symbolic play behaviors of Kannada speaking 2-3 year old typically developing children and late talkers and to examine whether these behaviours improve under social mediation strategies such as modeling and instruction. The relationship of play and language skills in both the groups was also assessed. In addition, the age related changes in the symbolic behavior and the toy and play preference between genders in both the groups of children was also examined.

A total of twenty children between the ages of 24 to 36 months served as subjects for the study. The clinical group consisted of ten children in two age groups (24-30 months and 30-36 months) diagnosed as Expressive Language Delay (late talkers). The control group consisted of ten children matched for gender, age range, socio economic status and child care history. The criterion for inclusion of children in the control group was that their expressive and receptive age which should be within 3 months of chronological age. The criteria used to identify late talkers was the results of 3D-LAT showing receptive age within 3 months of the chronological age and expressive age showing 6 months or more below the chronological age (expressive language delay). The children included in both the groups had no history of medical problems, emotional, behavioral, cognitive or sensory disturbances.

The procedure consisted of two phases which were investigation of symbolic play behaviours and assessment of play and language age. To study the symbolic play behavior (phase I), two sessions of play were organized in which all the children participated in two types of play situations viz. free play and structured play.

a) Free play

During the two free play sessions, the child was allowed to play with a specific set of toys without interference or involvement of an adult. Both the sessions lasted for approximately 10 minutes.

b) Structured play with toy sets: Two sessions of structured play was also organized. During the first session, each child was presented with four sets of thematically related toys, one set at a time, and they were allowed to interact with them for approximately 5 minutes each. During the second session, the targeted pretend behaviors at different levels were requested by specific instructions. If these behaviors did not occur on instructions alone, then the toys were presented once again and the remaining desired actions were demonstrated (modeling) accompanied by verbal instructions. All these sessions mentioned above were videotaped.

The second phase involved administering the Assessment Checklist for Play Skills (Swapna, Jayaram, Prema, & Geetha, 2006) to get their age-equivalent play scores.

Data coding for free play: Various types of play behaviors exhibited during free play with basket A & B was coded from the videotape for frequency of the specified play behaviors. In the structured play situation, the spontaneous occurrence of a desired play scheme was scored as 3, the same scheme exhibited with instruction alone was weighted

as 2, and play exhibited after modeling was weighted as 1 and nonoccurrence of a behaviour was scored 0. The maximum score that could be obtained by a child was 5 for each target behaviour with the toy sets (3 for spontaneous performance in the first session plus 2 for performance with instruction in the second session).

Appropriate statistical procedures were carried out to study the significant difference among the two groups and across age groups in the play behaviours observed during free play and the structured play situation and to study the relationship between play and language.

The results indicated that the late talkers exhibited lesser presymbolic and symbolic play behaviours compared to the typically developing group. There was a significant difference between these groups for the non symbolic play behaviours viz. manipulation, unoccupied behaviours and functional conventional play behavior. It was seen that the late talkers engaged in more of manipulation kind of behaviour. A developmental trend was observed in the typically developing group in which the younger group showed more number of nonsymbolic play behaviours (grouping and manipulation) compared to the older group who exhibited more of presymbolic (except for functional to self) and symbolic behaviours which are the more sophisticated play behaviours in the play hierarchy both in the free play situation and the structured play situation.

The performance of the two groups of children using the social mediation strategy was also examined and the results revealed that both the groups performed better with instructions and modeling. It was also seen that the typically developing group exhibited more number of play behaviours in each set of toys with instructions alone and required modeling to elicit only a few play behaviours, the late talking group exhibited lesser number of play behaviours with instructions alone and required modeling to elicit the majority of play behaviours.

The play language relationship was examined and it was found that in both the groups play age correlated with receptive and expressive language. In the typically developing children, play age correlated more with receptive language, however in the late talking group play age correlated more with expressive language age. This indicated that there is lower expressive language ability in late talkers was associated with poorly developed symbolic play skills.

During the data coding a general difference in toy and play preference across gender was also observed. It was seen that certain sets of toys elicit different symbolic play behaviours in male and female children. Toys such as doll, bottle, quilt and a stick, bear, brush, and comb elicited more symbolic play behaviours in girls whereas toys such as truck, tools, little men, stick and blocks elicited more symbolic play behaviours in boys.

It can be concluded from the study that the late talkers in general have poorer symbolic play abilities compared to the typically developing children. In addition they do benefit from social mediation strategies such as instruction and modeling and thus perform better. A strong correlation also existed between play and language which indicated that both play and language develop parallely.

Clinical implications of the study:

Cautions must be taken while drawing inferences from this study given the small number of participants and reliance on correlation analysis, which does not clarify causal relations. Nevertheless, this study has important implications for early childhood assessment and intervention. Firstly, this study suggests that it is crucial to examine several domains of functioning within the same child since only then can the relationships can be revealed. Thus symbolic play should be used as an informative portion of the diagnostic process. Valid and reliable prelinguistic assessments of symbolic play could lead to early identification of children with communication delays/disorders, which could serve as a prognostic indicator of language abilities and contribute to the provision of early intervention services. They can also provide good clinical information which will help speech-language pathologists to arrive at an accurate and appropriate diagnosis, especially for a child who is untestable on more conventional standardized measures. The results imply the use of structured play assessment as a valid, clinical tool for differential diagnosis of various communication disorders.

This study also suggests that focusing on skills common to symbolic play and language should also be an important aspect of intervention as they have been found to impinge on language capacities as the child matures. A productive remediation strategy for such children would be to provide language stimulation within a pretend play context. Goals of such intervention should be to help the child with expressive language delay to develop more elaborated, flexible, and varied thematic scenarios while learning the vocabulary that pertains to those scripts. Moreover it seems likely that training in symbolic play will help to improve a child's skills in other domains such as linguistic, cognitive and social skills. As play is an activity that is typically enjoyable for most children, using it in therapy may have beneficial effects on other areas of functioning. In addition, symbolic play would be a useful tool to determine whether a child has the capacity to understand symbols and help in designing a language or augmentative communication intervention programme.

Another implication of the study is that children with expressive language delay may be more likely to manifest pretend play when given realistic toys that are grouped thematically, rather than highly abstract objects with a less obvious thematic connection. Finally, children with expressive language delay may benefit greatly from the kind of socially mediated learning experience implemented here in the form of instruction and modeling. Children with expressive language delay may need more focused adult scaffolding and modeling than children with normally developing language, if they are to readily demonstrate their stored representations of thematic scenarios in pretend play behaviour.

The findings of the study provide an insight into the relationship between the symbolic play skill and language development and will help us to refine our understanding of both normative and atypical symbolic development. The findings of such research might contribute to theories of language development as well as assist clinicians and public planners in designing accurate screening procedures.

Future directions:

An interesting issue for further research will be to examine connections between the relationship between play and language in other older typically developing children and late talking children through symbolic play studies. A longitudinal study of such children also could throw light into the pattern of changes that occur with respect to the skills and their temporal correspondences in the various developmental stages. Future research could also focus on examining the differences in both children with only expressive language delay and children with both receptive and expressive language delay to fully appreciate the complex interactions among key areas of developmental functioning in these children. Since symbolic play is an important indicator of representative functioning, it would also be interesting to study the correlation between language and cognitive abilities in typically developing children and other communication disorders.

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Appendix I

List of play behaviors targeted during free play

I Nonsymbolic play behaviours

- Wandering/unoccupied – Behaviours not involving any active interaction with objects or individuals in the room. Includes sitting quietly, staring out the window, pacing back and forth, rocking while standing or sitting.

- Manipulation/handling- Involves child's visual and kinesthetic exploration and manipulation of toys. Includes mouthing, waving, banging, squeezing, shaking

- Grouping: Placing two or more like objects together in a group, line or stack. Includes play in which like objects are placed in a container, for example, blocks in box, sticks in basket.

- Child initiated social games: Play behaviour involving an adult in the room without functional or symbolic use of an object. Includes "patty-cake," "peek-a-boo," hiding games, teasing, tickling.

- Child-initiated social interaction: Active or verbal non- play behaviour initiated by the child and directed by an adult. Includes showing items, purposefully directing verbal or gestural requests to the adult, posing questions, giving social greetings.

II Presymbolic play behaviours.

- Functional conventional: Behaviours indicating that child knows the functionally appropriate use of an object. (e.g., putting cup on saucer, brushing floor with brush, loading truck).

- Functional to self: Functionally appropriate use of an object on oneself. (e.g., brushing own hair, drinking from bottle).

- Functional to other: Involves performance of a pretend action upon a recipient other than self. (e.g., brushing doll's hair, kissing bear)

- Sequence Type A: Two or more consecutive but different actions, one or more which is functional conventional. (e.g., pouring in cup and stirring with spoon; stirring in pot and feeding baby with that spoon)

- Sequence Type B: Same recipients (two or more consecutive) but different actions. (e.g., brush doll's hair and feed doll)

- Sequence type C: Two or more recipients /(two or more consecutive) and same actions. (e.g., brush doll's hair then own hair)

- Sequence Type D: Two or more recipients/(two or more consecutive) but different

- actions. (e.g., brush doll's hair, brush bear, and put both to bed).

III Symbolic play behaviours

- Symbolism Type A: Substitution of one object for another. Using objects in a manner different from its intended functional use. (e.g., using stick as spoon, using block as cup).

- Symbolism type B: Pretending to use an absent object, creating an absent person, or referring to an absent substance. (e.g., using an absent spoon to eat with, referring to "coffee" in cup).

- Symbolism Type C: Animating the doll or animal as an independent and active agent. (e.g., having doll prepare dinner).

- Verbal Transformation: Verbal substitution of one object for another. (e.g., putting a block down and calling it "cake").

- Verbal creation of object: Verbally creating an absent person or object by referring to it. (e.g., saying "milk" while pouring into a cup, "here come Daddy" when pushing truck around).

- Verbal animation: Verbally creating action, animating an object or toy with no accompanying action. (e.g., "man eating" or "Daddy go to work" when the doll is simply placed on the floor).

Appendix II

Targeted behaviours in structured play with modeling

I Set 1 (doll, baby bottle, blanket, stick):

- Functional Conventional - Spreading the blanket
- Functional self1 -Drinking from bottle
- Functional self2- Covering self with blanket
- Functinal other 1- Feeding the doll with baby bottle
- Functional other 2- Covering doll with blanket
- Sequence A- Spread the blanket and put doll in the blanket
- Sequence B- Feeding doll and then putting them to sleep
- Sequence C- Feeding doll and then drinking from sleep
- Sequence D- Feeding doll, covering self with blanket and bottle go to sleep
- Symbolism A- Feeding doll with stick as bottle
- Symbolism B- Feeding doll with pretend bottle
- Symbolism C- Having doll to spread blanket

II Set 2 (stuffed bear, comb, blanket, stick):

- Functional Conventional - Spreading the blanket
- Functional Self 1-Combing own hair
- Functional Self 2- Covering self with blanket
- Functional Other1- Combing bear with comb
- Functional Other- Covering bear with blanket
- Sequence A- Spread the blanket and put animal to sleep
- Sequence B- Combing bear's hair and putting it to sleep
- Sequence C- Combing bear's hair and then own hair
- Sequence D- Combing bear's hair, covering self with blanket and both go to sleep
- Symbolism A- Combing bear with stick as brush
- Symbolism B- Combing bear with pretend brush
- Symbolism C-Making bear to spread blanket

III Set 3 (two small human figures, horse, soap, and block):

- Functional Self 1-Soaping own body
- Functional Self 2- Self riding on the horse
- Functional Other 1-Washing horse with the soap
- Functional Other 2- Giving little man a ride on the horse
- Sequence B- Washing horse with soap and giving little man a ride on the horse
- Sequence C-Soaping horse and then own body
- Sequence D- Making little man pat horse and give little lady a ride on the horse
- Symbolism A- Washing horse with block as soap
- Symbolism B- Washing horse with pretend soap
- Symbolism C-Making little man washes the horse

IV Set 4 (truck, human figure, toy screwdriver, two blocks, stick):

- Functional Conventional- Loading truck with blocks
- Functional Other1-Fixing truck with toy screwdriver
- Functional Other2- Giving little man a ride on the horse
- Sequence A-Loading truck with blocks and making little man drive the truck
- Sequence B- Fixing truck with toy screw driver and giving little man a ride in the truck
- Symbolism A- Fixing truck with stick as tool
- Symbolism B- Fixing truck with pretend tool
- Symbolism C-Making little man drives truck