SYMBOLIC PLAY TRAINING: WHO PROFITS?

by

KATHLEEN LEIGH CAPREOL

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Department of **Audiology and Speech Sciences**
The University of British Columbia
Vancouver, Canada

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This project was intended as an initial step in evaluating symbolic play training as a viable means of promoting language development with young children with language delays (LD). The underlying assumption of this approach is that stimulating the symbolic function in one domain may in some way facilitate acquisition in the other. Given the reported theoretical and clinical relationship between symbolic play and language, this has been an intriguing possibility for some speech and language clinicians.

This project was designed with two specific goals in mind: 1) To further describe the symbolic play abilities of preschool-aged children LD compared to their language peers, and 2) To compare the LD children’s relative abilities in symbolic play and in a nonsymbolic cognitive task (i.e., a block construction copying task). We reasoned that children most likely to benefit from symbolic play training should show evidence of a 'symbolic deficit'. That is, they should demonstrate significantly poorer skills on symbolic tasks (i.e., language and symbolic play) than on nonsymbolic tasks (i.e., block construction).

No significant differences were found between the groups on measures of symbolic play or block construction. However, distinct profiles were identified when each LD child’s performance was contrasted across measures of language production, symbolic play and block construction. Three children conformed to a profile consistent with a ‘symbolic deficit’. Interestingly, these children appeared to be at the very earliest stages of language; children with slightly more developed language did not appear to demonstrate a problem specific to symbolic function. Symbolic play training, as a means of remediating language delay, was not strongly supported. Suggestions for assessment and use of symbolic play as a context for language therapy are discussed.
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INTRODUCTION

I Overview

A peek into a child's playroom affords rich observations for parents, developmental psychologists, linguists and speech-language pathologists alike. Piaget (1962) saw play as a window into a child's mental life. He traced intellectual development through children's development in play behaviours, from banging, tossing and mouthing objects indiscriminately, to the magical world of pretending. The impetus for this project lies in the ideas of Piaget and others about pretend play, its relationship with language development and implications for the speech and language clinician.

As infants mature, they learn about the social and practical attributes of objects and people in their environment: daddy cooks; cups hold water; a brush is for tidying hair. As this knowledge and appreciation of their world grows, children gain the ability to free themselves from these same constraints. Young toddlers, knowing about what cups are and what they are for, may pretend to drink from an empty cup when it is not at mealtime and they are not thirsty. Preschoolers may adopt the role of the parent and pretend to bathe, feed and put their doll to bed, or may pretend to squeeze toothpaste onto a block and brush their teeth. These solitary acts of pretense are important because they signal children's ability to represent what they know about events and objects symbolically. For instance, in the absence of a toothbrush children can construct a symbol to stand for what they know about toothbrushes, attribute those things to another object (for instance, a block) and pretend to brush their teeth.

In Piaget's theory, the first six stages of intellectual development constitute the sensorimotor period (Piaget, 1962). During this time, children's knowledge of objects or events is tied to their ongoing sensory and motor interaction with the world. Thus
for the sensorimotor child, "thought is not for action but is action" (Morehead & Morehead, 1974). By the age of two, children typically demonstrate a significant advance in thought. There's a shift to internal knowing or symbolic thought. Children become able to represent what they know about the world internally. As a symbolic thinker, the child is freed from the immediate present and can think in order to act (Furth, 1969).

Although Piaget (1962) never explicitly proposed a theory of language development, what he did say about language has had a substantial influence on the study of language and cognition, in general, and the field of speech language pathology, in particular. Piaget believed that symbolic function made the acquisition of language possible, it "...lays the groundwork for language". Various nonverbal behaviours, such as deferred imitation, symbolic play, object permanence, and mental imagery, are said to be manifestations of the symbolic function. From this perspective then, these skills are related by virtue of a shared, underlying cognitive skill, called representational thought or symbolic function. Developmental studies (e.g., Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979) with normal children suggest associations between the domains of language and symbolic play in particular.

The notion of an underlying symbolic function has had at least three implications for the field of speech-language pathology. First, symbolic deficit has been identified as a possible causal construct in children with language disorders (e.g., Leonard, 1979). In other words, language problems in children have been proposed to be part of a more general problem with mental representation. Several studies have investigated whether children with language disorders demonstrate deficits in all areas of representational thought. There is at least some evidence from investigations of visual imagery (Johnston & Ellis Weismer, 1983), conceptual ability (Kamhi, 1981), and symbolic play (e.g., Terrell, Schwartz, Prelock and Messick, 1984) indicating children with language difficulties also demonstrate difficulties with other
representational tasks although not usually to the same degree as the language deficit.

Secondly, speech and language clinicians often evaluate symbolic play abilities to gain information about the child’s nonverbal cognitive status (i.e., what the child knows about the qualities and functions of objects, events and people) in order to judge whether or not the child demonstrates a delay specific to language. Furthermore, because of studies showing a temporal proximity in emergence of play and language (e.g. Bates et al., 1979), symbolic play has been suggested as a means of evaluating the nonverbal child’s readiness for language acquisition (Olswang, Stoel-Gammon, Coggins & Carpenter, 1987; Lowe, 1975).

Finally, some investigators have suggested that the training of symbolic play might be a viable strategy for remediating language delays (e.g. Terrell, Chapman, Freebairn and Hedman, 1989). The underlying assumption of this notion is that stimulating symbol function in one domain may in some way facilitate acquisition in the other; that is, if symbol use can be improved through play training, then there may be a corresponding improvement in language development.

This project was designed with two goals in mind: 1) To further describe the symbolic play abilities of language-delayed children compared to their language peers (i.e., a replication of the Terrell et al. (1984) study), and 2) To compare the language-delayed children’s relative abilities in symbolic play and in a nonsymbolic cognitive task. The second goal was motivated by the body of evidence suggesting that language-impaired children demonstrate a range of cognitive deficits not captured by traditional IQ testing (Johnston, 1994) and would also provide us with the basis to identify likely candidates for symbolic play training.

The remainder of this chapter will discuss in greater detail the development of symbol use in play, the developmental associations of play and language in typical and
language-delayed children, symbolic play training and finally the premise for the present study.

II  **Symbolic Play Development**

Observed by 12 to 18 months and tapering off age 7, ‘pretending’ in play captures children’s minds and imaginations. Before this age range, children play at exploring the things in their world, and afterwards, children become more interested in rule-governed games. Of particular interest here are the earlier forms of pretend or symbolic play, typically observed before age 2 1/2. One simple example is a young child pretending to feed a stuffed animal with a cylinder. Even at this early level we see an element of *pretense*. This theoretical construct describes behaviours performed in a simulative, nonliteral or ‘as if’ mode (Garvey, 1977) identified by the following criteria:

a) familiar activities are performed in the absence of the necessary materials or usual social context

b) the activities are not carried to their usual outcome

c) inanimate objects are treated as animate

d) one object or gesture is substituted for another and/or

e) the child performs an activity usually done by someone or something else.

As children mature, their pretend play becomes increasingly social in nature and is commonly referred to as *sociodramatic play* (e.g. Smilansky, 1968). An older child, for example, may pretend to be a waiter in a restaurant by taking an order, serving the food and settling the bill. In sociodramatic play, children tend to act out scenes based on their experiences, such as going to the doctor, or grocery shopping. This kind of play usually flourishes among children aged 3-6 years old (e.g. Smilansky, 1968). Characteristics of sociodramatic play include role playing, and metaplay
communications (e.g. Garvey, 1974). As anyone who has observed the dress up corner at a preschool could attest, children do a great deal of negotiating about the roles ("pretend you’re the baby") and the play scripts ("I’m gonna drive you to the park"). This metaplay communication, or ‘talking about the pretending’ seems to serve to maintain and elaborate the flow and organization of the play (e.g. D’Orazio, 1994). The obvious importance of language in these later forms of pretend play raises important questions when evaluating the play of language-delayed children. However, language is not central to early forms of symbolic play. Indeed, early symbolic play has been considered a measure of nonverbal cognition in that the mental processes involved either do not, or need not, involve linguistic knowledge. Instead, at this level, play and language have been viewed as the synchronous products of a mind that has begun to use symbols.

Symbolism in play is perhaps best understood within the context of the behaviours preceding its emergence. The first 2 1/2 years of play have been well documented. Descriptions of developmental changes in play behaviours have been fairly consistent across several studies (e.g. McCune, 1981; Ogura, 1991). Less consensus, however, has been shown in two areas. First, the nomenclature used by authors is diverse and varied. For simplicity’s sake, the overall framework and terminology will be borrowed from Casby’s (1991) recent review article. Special attention will also be placed on Nicolich’s (1977) 5 level system (summarized in Appendix A) because of its predominance in the literature and its use in the present study. The second problem is less easily solved. There is a controversy in the literature about which behaviours are truly symbolic. This becomes more of an issue when evaluating the reported relationships between language and play. These issues will be tackled more thoroughly in subsequent sections. For now, the sequential order in the development of play will be described.
A. Sensorimotor Play

Children’s earliest form of play is sensorimotor in nature (Piaget, 1962). Other terms to describe this level of play include object exploration and manipulative actions (Lezine, 1973; Sinclair, 1970) and stereotypical play (Zelazo & Kearsley, 1977; Ungerer, Zelazo, Kearsley, & O’Leary, 1981). Play at this basic level consists of infants’ interactions with objects by mouthing, sucking, visually regarding, waving, banging and grasping objects. In Piagetian terms the infant is assimilating objects into existing sensorimotor action schemes.

B. Nonfunctional-Relational Play

During the latter half of their first year, infants begin simultaneously associating two or more objects. Behaviours have no clear functional basis but may include stacking objects, putting objects next to each other, nesting objects, and banging objects together. Various authors have described these types of behaviours as coordination of secondary schemes (Piaget, 1962), assembly activities (Sinclair, 1970), exploratory play schemes (Uzgiris & Hunt, 1975), non-accommodative relational play (Fenson, Kagan, Kearsley & Zelazo, 1976), and relational play (Zelazo & Kearsley, 1977; Ungerer, et al., 1981).

C. Functional-Conventional Play

Functional-conventional play refers to the young child’s socially appropriate use of objects and has been aptly labelled functional play (Zelazo & Kearsley, 1977; Ungerer et al., 1981) and conventional-social play schemes (Uzgiris & Hunt, 1975). Children usually exhibit this socialized object use around 12 months of age. They may raise an empty cup to their mouth, or touch a comb to their hair. These behaviours, however, do not have an ‘as if’ or pretense quality, the child appearing serious rather
than playful (Nicholich, 1977). Consequently, they are also referred to as Presymbolic Schemes: Level 1 Nicholich (1977).

Piaget (1962) said children at this level define objects by their use in ritualized schemes. He contended that this ritualization was a step in the preparation for later symbolic schemes. As a transition from sensorimotor to symbolic functioning, sensorimotor actions are used in a meaningful way but apart from their usual objective (e.g. bringing bottle to lips to drink). Nevertheless, these behaviours remain stimulus bound. Sinclair (1970) noted that it seemed as if the children responded in a fixed way to the objects since the expression of these action patterns seemed highly dependent on the context and the perceptual characteristics of the objects. Children at this level understand the functions of a number of household objects, and they demonstrate this knowledge by brief appropriate gestures with the objects themselves. Children at this stage are capable of “presenting” such action schemes given a highly specific context, but they are as yet unable of “representing” these actions in a more decontextualized or decentered manner.

The Symbolic Play Test (Lowe & Costello, 1976) has received criticism (e.g. Casby, 1991) on the basis of including items of this type. For instance, credit is given if the child “relates the spoon to cup or saucer” as in placing the large size spoon in the cup. Zukow (1980) has argued strongly against considering such conventional acts as symbolic. She argues that a child moving a spoon around in a bowl may not be “stirring” but rather may be simply performing actions afforded by the objects themselves; that is the spoon may be held and the bowl’s opening “invites penetration by the spoon”\(^1\) (p. 50).

D. Symbolic Play

The development of symbolic play doesn’t seem to mature along a singular dimension (Casby, 1991). Rather, play behaviours apparently change along three
dimensions: 1) an agent component, 2) a scheme sequencing component, and 3) an object component. Each will be described in turn.

1) Agent Component

Self-as-Agent. Self-as-agent symbolic play is designated by Nicholich (1977)'s system as Level 2: Autosymbolic Schemes. Play behaviours at this level are superficially similar to presymbolic functional-conventional schemes but are different in an important way. Children now show their understanding of meanings by using them playfully. Children may appear playful by making eye contact with their parent, smiling and showing the gestures in an exaggerated way. For example, a child may glance collusively at her mother as she makes a show of slurping from an empty glass. This element of 'pretense' is the distinguishing feature, and is significant because it signals the "meaning" of the scheme (e.g. drinking) is becoming generalized. The child can now activate the 'real' and 'pretend' varieties of the action at will.

In the beginning, children pretend only at those themes they themselves do and know well, such as, eating, sleeping and grooming. Because these schemes are still tied to the child's own sensorimotor actions and the immediate presence of appropriate objects, Piaget (1962) argued that these behaviours do not constitute true symbolic behaviour. Nevertheless, these behaviours have been included in symbolic play measures in several publications (e.g. Bates, Benigni, Bretherton, Camaioni, & Volterra, 1977) and standardized play tests (e.g. the Symbolic Play Test; Lowe and Costello, 1976).

The child's first symbolic acts show an increased separation or decentration of the symbols from the child's sensorimotor action (Nicholich, 1977; Piaget, 1962). Children soon begin pretending at activities not typically attributed to them, including reading a book, telephoning, drinking tea, ironing, mopping the floor. So while the child
remains the agent in the play, the content of the play indicates a separation of the play from the child’s self.

Other-as-Agent In addition to extending play to unfamiliar activities, children extend schemes to include other participants (e.g. child feeds a doll a bottle). Both types of decentred acts are described under Nicholich’s (1977) third stage Single Scheme Symbolic Games: Level 3.

Other-directed acts can take two forms, active and passive (Lezine, 1973; Lowe, 1975; Watson and Fisher, 1977, 1980; Fenson and Ramsay, 1981; Shimada, Kai & Sano, 1981; McCune-Nicholich, 1981). In passive-other play, children may pretend to bathe or feed their teddy or comb their doll’s hair. The significance of including their dolls, stuffed animals or parents in these games, is that children apparently recognize that other individuals have functions. Piaget (1962) refers to this level as Projection of Symbolic Schemes onto New Objects. Actions that children previously directed to themselves are now projected onto others, first as passive recipients (passive-other) and later as active participants (active-other).

Fenson & Ramsey (1980) proposed object-directed play as a third category of other directed acts. In that report, object-directed play was operationalized as actions directed toward inanimate objects as in ‘stirring with a spoon’, or ‘transferring an imaginary substance form one location to another’. These investigators suggested that object-directed play resembled passive-other directed play in that the child remains the agent, but the action is decentred. Results from their study revealed that object-directed and passive-other share approximate times of onset (from 16 to 19 months). Given the examples reported, however, it appears that object-directed actions may not a ‘real’ category at all, instead it may be a mixed bag of behaviours more appropriately catalogued in other categories. For example, ‘stirring with a spoon’ is really a functional-conventional behaviour, while ‘transferring an imaginary
substance from one location to another’ would be counted as a substitution of an imaginary object in other investigations.

In active-other directed play, the dolls, stuffed animals or other people are treated as if they were actively taking part. Here children behave as if the doll has an independent role. For example, the child places the comb in a doll’s hand; ‘walks’ the doll; or hold’s a mirror up to the doll’s face so it may see its reflection. Active-other play has been found to appear later than the passive form in most reports (Sinclair, 1970; Lezine, 1973; Watson & Fisher, 1977, 1980; Lowe, 1975; Shimada et al., 1981; but see also Fenson and Ramsay, 1980).

Nicholich (1981) categorizes the active form as a structurally more mature play behaviour than passive form (Level 5- internally directed symbolic games vs. Level 3). She reasons that to treat a doll as an agent capable of performing independent actions, implies a coordination of at least two mental representational structures as opposed to a single scheme. The child first identifies the object as an agent through an internal plan or transformation, and then directs a separate but related pretend behaviour. Other behaviours of this ilk (i.e., object substitutions and planned combinations coded in Nicholich’s Level 5) are described below.

2) Scheme Sequencing Component

Elaborated-Scheme Symbolic Play. The second advance in pretending is the child’s increasing ability to join two or more symbolic play behaviours in sequence. Several studies have described children’s developing capabilities in elaborating their play (Piaget, 1962; Sinclair, 1970; Fenson & Ramsay, 1980; Nicholich, 1977; Shimada et al., 1981; Bates et al. 1979; McCune-Nicholich & Bruskin, 1982). In general, children progress from producing single schemes, to repeating the same scheme with different recipients, to putting different schemes together, and finally to planning sequences. As symbolic play episodes continue to develop in length and
complexity, they come to resemble sociodramatic scenes as described at the beginning of this section.

Two types of early occurring play sequences have been observed between the ages of 12 and 18 months. First, the child drinks and gives a drink to the doll. Sequences of this kind are characterized as *Combinatorial Symbolic Games: Level 4.1* (Nicholich, 1977) or *Single-Scheme Combinations* (Fenson and Ramsay; 1980; Shimada et al., 1981). In the second type, the child may play more than one scheme with the same or different objects. For example, the child kisses the doll, puts it to bed and puts a spoon to its mouth. In Nicholich's (1977) system this play type is referred to as *Combinatorial Symbolic Games: Level 4.2*. These behaviours are contrasted with behaviours at the next level (*Planned Symbolic Games: Level 5.2*) in that there is no apparent regard for the logical, or temporal sequence and no evidence that the child's behaviour is guided by an overall internal plan or intention. Rather, combinations at this level remain tied in some important way to the characteristics of the play materials, and evolve more on a moment to moment basis.

*Planned Symbolic Games--Level 5.2* (Nicholich, 1977) seem to stand alone in describing later forms of elaborated symbolic play. The essential element here is evidence of logical organization or planning. Here the child might feed the doll, comb its hair, change its clothes into pajamas, put it to bed, read a story and give a kiss goodnight. McCune-Nicholich (1981) underscores the significance of this level of play and contends that such sequences exhibit a hierarchical structure to their organization. The acts of pretense are believed to be guided by an *intention* to act. The child might pronounce “you’re tired dolly, it’s time for bed” or simply “bed” and then search for the necessary props before carrying out the play episode. Verbalizations or searching for absent objects are traditional clues for the observer in recognizing planned episodes. Using these criteria, Nicholich’s (1977) longitudinal study of five girls found planned sequences emerged between 18 to 26 months. At around 2 years of age,
children tend to search for absent objects to complete their play games, whereas before they tend to include only readily available objects (Lezine, 1973; Lowe, 1975; Nicholich, 1977).

Other reports describing the development of sequential play behaviour have applied the term Multischeme Combinations (Fenson & Ramsay, 1980; Shimada et al., 1981) to describe the combination of two different types of actions directed toward the same recipient. These authors have further distinguished between unordered and ordered multischemes, the latter reflecting a logical ordering of the component acts. Shimada et al. (1981, p. 20) describe a third type, an organized multischeme, defined as “combining two different acts almost at the same time in an organized manner” e.g. brushing teeth while looking in a mirror. The authors claim that this behaviour reflects planning, however they admit that “overt planning behaviour was not always observed” (p. 13).

In his recent review article, Casby (1991) associated these multischeme sequences (e.g., Fenson & Ramsay, 1980; Shimada et al., 1981) with Nicholich’s (1977) highest level (Level 5). There is reason to suggest that this may be inappropriate. Examination of the exemplars provided in these reports, suggests that the subcategories of multischeme sequences would fall, instead, under Nicholich’s Level 4.2. Fenson and Ramsay (1980) and Shimada et al. (1981) in fact reported no significant differences in the onset or occurrence between unordered and ordered multischemes. Neither report conceptualized a level equivalent to Nicholich’s level 5.2. Further, Fenson and Ramsay (1980) and Shimada et al. (1981) may have included behaviours within the category of elaborated symbolic play that would not have been recognized or credited by Nicholich. For instance, Fenson and Ramsay (1980, p. 173) give the following as an example of an ordered multischeme combination: “placing a soldier on the platform, then pulling the platform around the room”. It seems questionable whether this behaviour even constitutes an act of
pretense. Furthermore there does not appear to be any evidence of logical ordering. Rather the ordering is implicit; in order to pull the soldier on the platform, it must first be put on the platform. Similarly with Shimada’s example: “stirring in a cup with a spoon and then drinking from the cup” (p. 20), the logical order is open for interpretation. There is substantial support (reviewed previously) for considering acts of this type as functional-conventional rather than symbolic.

Evidence suggests that scheme sequences first emerge as repeated single scheme combinations (Level 4.1) where the same scheme is related to several actors or receivers of action and next as multischeme combinations (Level 4.2), where several schemes are related to one another in sequence usually with the same actor. This ordinal relationship has received some support (Bates et al, 1979; Fenson & Ramsay, 1980; Nicholich, 1977; Hill & McCune-Nicholich, 1981). The Shimada et al (1981) finding that ordered multischemes occur before single scheme combinations may again reflect the fact that they included combinations of early occurring functional-conventional actions as multischemes. The developmental relationship of the content of scheme sequences remains unknown. Although it is intuitive to believe combining two functional-conventional schemes would be easier than combining two passive-other schemes or active-other schemes, there has been no empirical evidence reported to date.

3) **Object Component**

**Object-Substitution Symbolic Play.** Since Piaget (1962), several studies have described children using substitute objects as part of their symbolic play (Sinclair, 1970; Lezine, 1975; Shimada et al.,1981; Nicholich, 1977, 1981; Ungerer et al., 1981). It is perhaps the characteristic most identified with symbolic play and in fact has been used as its principle defining criterion in certain investigations on play and language.
Nevertheless, there have been differences in the way this variable has been defined.

Two general levels of object-substitution have been identified. The first has been variously termed *simple identification of one object with another* (Piaget, 1962); *simple object substitution* (Lezine, 1973; Sinclair, 1970); or *substitute object use* (Shimada et al., 1981). The second level is using *imaginary* objects, or no object substitution.

McCune-Nicholich (1977, 1981) accounted for the first type, simple object substitutions, in her highest category *internally directed symbolic games level 5.1.* Like other planned games (ordered sequences), she felt that using one object to substitute for another, such as using a sponge as a car, implies an internal definition or transformation (sponge=car). In naturalistic studies, objective evidence is usually needed to determine whether the object substitution was intentional, that is, based on "double knowledge" of the conventional meaning of objects involved and the meaning expressed in the substitution (Lowe, 1975; Nicholich, 1981). Positive evidence takes the form of 1) verbalization (e.g., "this is a car"), 2) use of object both conventionally (e.g., washing with the sponge), and in substitutions, or 3) use of the same object to substitute for several different objects (e.g., using the sponge as a bed, a sandwich and a car). Using these criteria, object substitutions are typically observed only after 19 months (Lezine, 1973; Nicholich, 1977; Sinclair, 1970). In general agreement Shimada et al. (1981) reported a median age of 18 months with a range of 14 to 24 months for substitutions where "the subjects had to produce different meanings from the conventional meaning of the object" (p. 4). These authors did not make clear that the recognition of double knowledge (as outlined above) was required. In other reports, children as young as 12-14 months have used objects that are *perceptually similar* to the conventional object, e.g. drinking from a variety of cup shaped objects (Bates et al., 1979). Whether or not this constitutes a symbolic substitution is
In Piaget's (1962) view, the significance of object substitution is that the child can generate a pretend scheme which is not highly dependent on present objects and then use that object in play. Perceptual similarity between the replaced and substitute object becomes an issue in deciding how dependent the play is on the characteristics of the substitute object. For example, when does a 'cup-shaped' object become sufficiently unlike a cup so that a child's drinking from it could be attributed to a *symbolic* transformation and not simply a behaviour generated in response to the characteristics of the object's 'cupness.' Experimental studies provide an opportunity for considering a continuum of possible substitutions at varying levels of abstraction.

The perceptual properties play an important role in substitutions. There is a gradual increase from about 18 to 34 months in the child's willingness to substitute objects which are physically dissimilar to the replaced object (Ungerer et al., 1981; Fein, 1985; Watson & Fischer, 1977; Elder & Pederson, 1978; Jackowitz & Watson, 1980). Ungerer et al. (1981) found that at 18 months children will more likely substitute an object that is similar physically to the replaced object but that has an ambiguous function (e.g., pretending a cylindrical block is a telephone). Older children are more able to substitute less physically similar objects with unambiguous functions (e.g. pretending baby bottle is a telephone).

*No-object or imaginary object* symbolic play is more likely to occur in a highly supportive context (e.g., child picks up teacup, says "tea" and slurps the imaginary liquid from the cup (Ungerer et al., 1981). These investigators found children almost always incorporated a tangible object conventionally associated with the signified object to provide physical support for the imaginary object symbol. Pretend gestures of absent objects were reported in about a third to one half of the 2-year-old subjects in two studies (Shimada, 1981; Jackowitz & Watson, 1980). Ungerer et al. (1981) reported no instances of gesturing with no-object even at 34 months (e.g., "I comb
hair" without any objects present). Ungerer et al. (1981) also noted that the increased incidence from 18 to 34 months on verbal metaphors unaccompanied by actions (e.g., holding round jar lid, child says "pancake" but does not pretend to eat it). Although these incidences have not traditionally been included, these authors argue that verbal metaphors reflect children's' ability to generate symbols in their minds, independently from visible action.

Summary

The notions of decentration, decontextualization and integration, introduced in the work of Piaget (1962) and Werner and Kaplan (1963), are supported by the developmental play research. For these authors, the shift into symbolic thought is marked by movement away from the self, away from specificity, and towards complex coordinations. For example, the notion of decentration is expressed in the agent component in that play moves from being focused on the child themselves to involving others first in a passive role and later in an active role. This shift is taken as evidence that the child understands that agents and objects can be independent from the self. The principle of integration is demonstrated in the progression in play from sequencing single schemes, towards more complex combinations. This shift is seen as a manifestation of general combinatorial ability. The notion of decontextualization is seen in the development of the object component; at first the child only substitutes similar objects but is able to incorporate dissimilar objects and even imaginary objects. This shift is interpreted to mean that the child is capable of adopting a symbol system in which the symbol does not need to resemble the object for which it stands.

The patterns of growth of each dimension have been described in considerable detail. As previously noted, however, important research questions remain, having to do with the synchrony and dependencies which might link the development in the three dimensions.
Pieces of a puzzle: Agent, Object and Sequence Components

Because few studies have investigated the development of the three components (i.e., agent, object, sequencing) together, various findings need to be pieced together for a more comprehensive picture of how symbolic play changes over time. It remains largely unclear, however, how the components develop in relation to one another.

In general, self-as-agent play is widely reported as the earliest form of symbolic behaviour in play. Passive-other behaviours are usually seen next, followed by repetitive single schemes. Fenson & Ramsay (1980) found that these two behaviours appeared concurrently, although this finding may have been a result of sampling at 6-month intervals. Unplanned multischemes are usually observed next. Planned multischemes and object substitutions appear to emerge last; the grouping of these behaviours is fairly well supported (Nicholich, 1977; Shimada, 1981; Fenson & Ramsay, 1980).

There appears to be at least some evidence that the three components interact in a meaningful way. Shimada (1981) referred to nested development where substitute object play was initially directed towards the child (self-as-agent), and only later incorporated into other-directed play. By 24 months, almost 70% of subjects could use substitute objects in passive-other play, and 17% could use substitutions in active-other play. In other words, it appeared that the new skill of ‘substituting’ was apparently introduced in the earliest (and arguably the ‘easiest’) form of agent play first. Similarly, Watson & Jackowitz (1984) observed an apparent trade-off between the agent and the object component; for example, at 20 months, they observed that children may be able to substitute a physically dissimilar object in self-directed play, but only use physically similar objects in other-directed play. Although there have not been any studies of the content of sequences as play develops, it is plausible that combinations involving functional-conventional or self-directed play would appear
before combinations of other-directed play. This general progression is reminiscent of the observation that ‘new functions’ tend to emerge using ‘old forms’ (and vice versa) in language development (possibly suggesting processing limitations?).

III Synchronies in the Development of Play and Language

Following from the Piagetian notion of ‘symbolic function,’ investigators have looked for relationships between cognition and language in development. The particular focus here is between symbolic play and language. Based on close observations of children from 9 to 13 months, Bates et al. (1979) concluded that symbolic play, tool use and imitation were related to the onset of language. In Fein’s (1978) factor analysis, she found that pretend play and language grouped on the same factor while other types of play characterized a separate factor. Indeed, symbolic play and language appear to be ‘yoked’ in development (Gardner, 1980); it is the nature of that relationship that people have wanted to discover.

A comprehensive review of the many different conceptions of what the cognition-language relationship might look like is beyond the scope of this report (but see Rice, 1983, for a review of the various hypotheses). One early account, generally referred to as the strong cognition position, was based on an interpretation of Piaget’s (1962) assertion that language is a part of more general representational capacity. Therefore, some theorists asserted that the cognitive achievements required for post-sensorimotor representational thought should then precede developments in language as well. By the end of the 1970’s, however, the assumption that achievements on Piagetian cognitive measures (such as object permanence or symbolic play) were prerequisite for language was modified by the observation that related language and cognitive skills tended to appear within the same time period, although not necessarily
in the cognition first sequence (e.g., Bates, 1979; Miller, Chapman, Branston, & Reichle, 1980).

Faced with this evidence, several investigators revised the original Piagetian hypothesis that there is a single relationship between language and symbolic play in favour of theories postulating several possible relationships. These modified versions have been offered in the form of local homology (Bates et al. 1979) or skill theory (e.g. Fischer, 1980). These theories share the expectation that there will be many relations between symbolic play and language rather than a single one. These models predict specific relationships between symbolic play and language at specific points in time when development in both areas share common underlying skills or mechanisms. Correlations between the domains are expected at those points in development when a shared component is “coming on line” (e.g. Thal & Bates, 1988). Some investigations have looked for relationships by comparing specific sequences of pretend play and language behaviours. For instance, Corrigan (1982) examined children’s use of animate and inanimate semantic components in both play and language, and found significant positive relationships in the control of these components in the two tasks. It appeared that both domains shared the component, ‘the flexibility to make substitutions.’

Decisions about what to look at and when to look for it are crucial in such research. Although transitions to more advanced levels are expected to occur close in time (Bates et al., 1979; Fisher, 1980), there may be several reasons for disassociations to occur. Watson and Fisher (1977) pointed out that disassociations should be expected because development does not proceed evenly across different task domains. Bates et al. (1979) also note that the emergence of behaviours sharing certain, but not all, underlying skills may be asynchronous because of those skills not shared. Furthermore, decisions about measurement may result in an investigator looking at the wrong thing, in the wrong place, and/or at the wrong time (Schlesinger,
1977). In other words, just as co-occurrence in time is not enough to say that two things are related, non-concurrence in time is not necessarily enough to say that two things are not related.

Having said that, there have been a number of studies suggesting temporal congruences in the onset of play and language milestones. General support for correspondences in the emergence of first words and early symbolic play has been reported (Bates et al, 1977; Bates et al, 1980; Kelly and Dale, 1989; McCune, 1981; Ogura, 1991; Veneziano, 1980; Volterra & Caselli, 1983). Folger and Leonard (1978), however, concluded that many of their subjects using referential speech failed to exhibit symbolic play. The essential difference appears to be methodological; whereas Folger and Leonard (1978) defined symbolic play as episodes involving object substitutions (e.g. ‘feeding baby with a block for a bottle’ coded by McCune-Nicholich level 5), the investigators in the other reports acknowledged earlier forms (e.g. ‘play sleeping with a pillow’ coded as McCune-Nicholich level 3).

Quantitative relationships between the domains have also been reported. For example, Volterra et al. (1979) found a strong relationship between the frequency and number of play symbols produced and the number of words produced. An analogous finding was reported between play and language comprehension: children aged 1 1/2 to 2 years with better language comprehension also had better symbolic play (Fein, 1978).

Temporal correspondences in the emergence of combinations of words and symbolic play schemes has also received widespread support (Fenson & Ramsay, 1981; Kelly & Dale, 1989; McCune Nicholich & Bruskin, 1982; Shore, 1986; Ogura, 1991; Volterra & Caselli, 1983 ). The synchrony of this transition has also been supported in children with Down syndrome (e.g. Beeghly & Cicchetti, 1987). Furthermore, Shore, O’Connell & Bates (1984) demonstrated similarities in the average length of sequence and the longest chain of different elements that children
produce in a single plan. They concluded that the correlation between combinations of content words and combinations of gestures was likely due to a common combinatorial ability rather than another factor (i.e., size of vocabulary in either modality).

The findings of parallels in development between symbolic play and language domains in typically developing children has led investigators and clinicians to wonder whether children with language delays would show parallel delays in symbolic play.

IV Play and Language Relationships in Children with Delayed Language

The concept that both play and language may draw from a common symbolic process at specific points in development invites the study of language-impaired children. Impaired or delayed language has been argued to be a symptom of inefficient processing (e.g. Johnston and Smith, 1989), attentional difficulties (e.g. Tallal & Piercy, 1973), a purely linguistic deficit (e.g. Gopnick, 1993) or a general representational deficit (e.g. Leonard, 1979). Studying the play skills of language-impaired children provides an opportunity to test this last possibility. Like language, pretend play is a symbolic activity. It does not, however, depend on language-specific factors (e.g., auditory processing for oral languages). Consequently, pretend play provides an opportunity to investigate the symbolic aspect of language delay. If language-delayed children demonstrate similar deficits in play there may be reason to believe their linguistic deficits reflect a larger impairment in the ability to manipulate symbols regardless of modality.

In one of the first studies to explore this question, Lovell, Hoyle, and Siddall (1968) compared the level and type of of symbolic play demonstrated by normal and language-impaired children matched for age. No differences were noted for the younger ages, but the older language-impaired children reportedly spent less time in symbolic play than the older normal children. However, these results were
confounded by the fact that verbal behaviours were included in the assignment of symbolic play scores, thus making it difficult to conclude whether the differences were due to poor verbal skills or a general symbolic deficit. Other investigations, however, using more refined methods, have concluded that language-impaired children demonstrate less sophisticated play forms, fewer object transformations, and shorter and more poorly organized themes, than their normal-language age peers (e.g. Brown, Redmond, Bass, Liebergott, & Swope; 1975; Lombardino, Stein, Kricos, & Wolf, 1986; Rescorla & Goossens, 1992; Skarakis-Doyle & Prutting, 1988; Terrell & Schwartz, 1988; Udwin & Yule, 1983). Language-impaired children appear to fall short of their age peers, but what about their performance in relation to their language peers?

In evaluating the extent to which language and play deficits are linked, the more critical comparison is between language-impaired children and normal children matched for linguistic ability rather than age. If language and symbolic play depend on the same underlying process then similar deficits in both domains would be expected; on the other hand, if the language deficits are due to some other skill, specific to language, then play may not be similarly impaired. To evaluate these possibilities, Terrell, Schwartz, Prelock and Messick (1984) compared the symbolic play of a group of language-impaired children (mean age 35 months) and a group of children at the same language level (mean age 19 months). All the children were at the one word stage and had productive vocabularies of 25 to 75 words. Symbolic play was measured by the children’s scores on the Symbolic Play Test (Lowe & Costello, 1976) and by informal observations of the quality and quantity of the play episodes during spontaneous play. The results suggested that the language-impaired children demonstrated more mature symbolic play skills than their language peers, but performed below expectations for their age. Terrell et al. (1984) concluded that the
symbolic deficit alone likely could not account for the language difficulties demonstrated by the language-impaired children.

Roth and Clark (1987) also compared the symbolic play of language-impaired and normally developing children matched for Mean Length of Utterance (MLU). They found that the language impaired children performed more poorly on the Symbolic Play Test than the normal children instead of better as found in Terrell et al. (1984). This finding has been widely reported to illustrate the apparent inconsistencies in this area of research. Roth and Clark (1987) suggested that the relationship between play and language may change relative to increasing age and/or linguistic maturity. It seems particularly important to consider the ages of the subjects; the language-impaired children in this study were considerably older than those in the Terrell et al. (1984) study (by about 4 years on average). In fact, the Roth and Clark language-impaired subjects had an average age of 6 years 7 months, far exceeding the intended population of the test (normed for children 12 to 36 months with a noticeable ceiling effect). The materials and the themes (e.g., putting baby to bed) of the Symbolic Play Test would have limited appeal for most 5 to 8 year olds, and this fact would likely be reflected in low scores. This study may offer more insights into the importance of choosing appropriate measures than into the nature of the relationship between language and play.

Terrell and Schwartz (1988) paid particular attention to the coding of play behaviours and the materials used to elicit them. They distinguished between symbolic and representational play (Veneziano, 1981) and also accounted for 'concrete', non-pretend type behaviours (e.g., throwing, sensorimotor exploring, grouping). The term representational described those pretend behaviours in which the child used real or toy objects in a realistic way (e.g. feeding baby with a bottle). The term symbolic play was reserved for those pretend behaviours in which the child substituted one object for another (i.e., an object transformation). In the Nicholich
taxonomy, *representational* activities would cover all levels but Level 5.1 (identified by play involving an object substitution.) Behaviours scored on the *Symbolic Play Test* would then be considered *representational* rather than *symbolic* because object substitutions are not coded. Terrell and Schwartz (1988) wanted to explore the differences in play between language-impaired, normal age peers and normal language peers. They also wanted to know whether the types of objects available (i.e., toys vs. objects of ambiguous function) would help determine the different types of play the children would demonstrate. The major findings included: 1) the language-impaired children performed more concrete than representational or symbolic activities compared to the age-matched subjects, though no differences were reported with the language-matched cohorts, and 2) the type of materials available appeared to have a substantial effect on the types of activities children demonstrated. All children tended to perform more *representational* activities with the toys and more *symbolic* activities with the objects. That is, children made more object substitutions when given objects with an ambiguous function (e.g., popsicle stick, shoebox) than toys (e.g., telephone). This makes intuitive sense in that in order to really play with a shoebox, it helps to pretend it is a bed or a boat. Clinically, these results suggest that it is important to provide a set of ambiguous objects in assessing a child’s ability to use object substitutions in play.

**Conclusions**

Several studies have reported that the pretend play of language-impaired children falls short of age expectations (e.g., Brown et al., 1975). Fewer studies have made the comparison between language-impaired children and normal children matched for language ability, and the results have been less consistent. Aspects of language-impaired children’s symbolic play have been judged as *better than* (Terrell et al., 1984; Thal & Bates, 1988), *worse than* (Roth & Clark, 1987; but see methodological
problems above) or no different from (Terrell & Schwartz, 1988; Thal & Bates, 1988) the play of their language peers. Overall, the prevailing opinion has been that language-impaired children appear to evidence some general symbolic deficits, but that these symbolic deficits alone do not appear to account for the linguistic deficits demonstrated by language-impaired children (e.g., Kamhi, 1981; Terrell et al., 1984).

V Symbolic Play Training

It seemed a natural extension for a number of investigators and clinicians to consider how a possible relationship between play and language could be applied in the clinical setting (e.g., McCune-Nicholich and Carroll, 1981). Jeffree & McConkey (1976) made the assumption that stimulating one aspect of the symbolic function might enhance performance in another, and proposed that symbolic play skills be taught as part of a language intervention program. Symbolic play behaviour itself has been found to improve through intervention. Evidence from studies with normal children have suggested that the frequency (Watson & Fisher, 1977) and complexity (Fenson and Ramsay, 1981) of symbolic play behaviours increases following modelling by an adult. Could a corresponding benefit in language behaviours be expected?

Steckol and Leonard (1981) carried out an empirical study designed to investigate this question at an early point in development. Drawing from the developmental data of Bates et al. (1977), Steckol and Leonard (1981) wanted to determine the effects of sensorimotor training on a range of early linguistic behaviours (e.g., performatives such as ‘pointing to an object to get an adult to attend to it’). They found that the children who received training focused on relating to objects demonstrated a greater degree of performatives. Notably, the highest steps of the
objects training involved functional-conventional or early symbolic self related play (e.g. 'feed self with spoon').

Terrell et al. (1989) designed a training study with children at the one word stage. They reported the preliminary results comparing language outcomes between two ‘slow talkers’ who participated in sessions focused on encouraging increasingly more complex levels of object substitution and one slow-talker who participated in more conventional language therapy sessions focused on the production of specific semantic notions (e.g., agent, action, object). After the 5-8 week training period, all three children demonstrated gains in language. The authors were unable to discern, however, whether the play training was effective by virtue of the focus on the play itself, or the language stimulation that occurred incidentally as the child and adult played. Nevertheless, it appeared that the approach held at least some promise in the remediation of language delay.

VI Research Questions

As research has evolved in the forum of play and language relationships, an important gap in the findings has emerged. Two observations have been supported in the literature. First, play and language development appear to be related. Secondly, play and language deficits can co-occur. The theoretically-based explanation for this co-occurrence is the idea that language-impaired children evidence a deficit in symbolic function. This line of argument has not, however, been coordinated with another important line of research suggesting that “across a range of tasks and ages, children with specific-language impairment have shown a marked level of intellectual delay” (Johnston, 1994). In this context, reports (e.g. Terrell et al., 1984) claiming normal non-verbal functioning of their language impaired subjects, on the basis of standard IQ tests (e.g. Leiter International Performance Scale; Arthur, 1952), are not as
convincing as they once may have been. This second line of research presents a challenge to the claim that the play deficits demonstrated by language-impaired children necessarily represent a symbolic deficit.

If children with specific language impairment do show intellectual delays, then the observed play deficits could reflect part of a broader impairment in intellectual functioning rather than a problem with symbolic function. The symbolic skills of language delayed children do seem to be depressed, but how do they compare with other measures of nonverbal cognition? Before symbolic play training can be justified, a symbolic deficit must be demonstrated. We reasoned that only children showing evidence of a symbolic deficit underlying their language delay would be good candidates for such an approach. That is, such children would demonstrate deficits on symbolic tasks (e.g., language and symbolic play) but not on nonsymbolic tasks (e.g., manipulative problem solving). To this end, a comparison of children’s relative performance on language measures, symbolic play measures and a manipulative problem solving measure (e.g., block construction) might provide useful clinical information.

This study was designed to investigate the following questions:

1) How do the symbolic play abilities of young language-delayed children compare to those of normally developing children at the same language level (i.e., as a replication of the Terrell et al. (1984) study)?

2) How do the symbolic play abilities of young language-delayed children compare to their abilities on a nonsymbolic cognitive task?
Endnotes

1. In a philosophical sense this kind of argument can be impenetrable in that we can never be sure of another’s intentions. More practically, this commentary should make an observer more conservative in projecting an adult’s meaning or interpretation on a child’s action. Regarding the Symbolic Play Test, if a child were functioning strictly at the functional-conventional level, they would likely attain a score equivalent to about 12 months, which would probably be an accurate depiction. Nevertheless, the clinician should recognize the limitations of this test, and the test materials.
METHOD

I Overview

The broad purpose of this study was to begin to evaluate the use of symbolic play to facilitate language development. Given the reported theoretical and clinical relationship between symbolic play and language, this has been an intriguing possibility for many speech-language clinicians. It was argued in the previous chapter that children likely to be good candidates for this type of intervention would possibly demonstrate evidence of a symbolic deficit underlying their language impairment. These preschoolers would presumably have more difficulties with tasks requiring symbolic processing, such as language and pretend play, than with a manipulative, nonsymbolic type task such as block constructions. To identify children with this profile and to further describe them, 10 language-delayed (LD) subjects and 10 typical-language (TL) peers were assessed on measures of language, symbolic play and manipulative problem solving (i.e., block construction). Details follow on the subjects, tasks and analysis used in this project.

II Subjects

Twenty children participated in this study, including 10 children with delayed-language skills (mean age: 31.6 months; range: 22 - 43 months) and 10 with typically developing language (mean age: 20.7 months; range: 15 - 25 months). Families were recruited through referrals from the Vancouver Health Department, the Child Study Centre at the University of British Columbia and Playcare in North Vancouver. Language delayed children aged two and one half to four years were originally targetted with the expectation that their developmental level would be suitable for the
study of symbolic play. An initial letter was sent to parents via these agencies outlining the project’s objectives and procedures. Those parents who were interested in participating were then contacted directly by the investigator who provided additional information and obtained written consent. The first meeting served as a screening for inclusion in the study. Children were selected primarily on the basis of their language production skills, but also according to the following criteria:

i) English as the dominant language spoken at home

ii) No reported history or evidence of emotional or behavioural disturbances

iii) Absence of severe phonological difficulties (must be at least moderately intelligible)

iv) No significant sensory or physical impairment (hearing was reported to be within normal limits in at least one ear.)

v) Absence of profound developmental delay. Subjects completed two subtests within 12 months of their chronological age on either the Bayley Scales of Mental Ability (Bayley, 1969) or the Leiter International Performance Scale (Arthur, 1952). Motor milestones were reported within expected age ranges.

As previously mentioned, productive language ability was the primary selection criterion for both language delayed and normal subjects. Children’s productive language level was evaluated by means of the Reynell Developmental Language Scales (1985), the MacArthur Communicative Development Inventory (CDI), and Mean Length of Utterance (MLU) derived from a spontaneous language sample. The CDI is a parent report instrument yielding an estimation of a child’s productive vocabulary. This information was particularly valuable for the youngest subjects and for children using primarily or entirely single word utterances. These instruments will be described in greater detail in the next section.
Language-Delayed Subjects

Children were identified as language-delayed (LD) if their performance on the Expressive portion of the Reynell was more than 1.3 standard deviations below the mean (<10th percentile). Four girls and six boys met this criterion (mean age: 31.6 months, range: 22 to 43 months). Of these ten children, seven actually performed well below the 10th percentile on this instrument (mean standard score for the LD group: -1.83 SD). Scores on the MacArthur Communicative Development Inventory (CDI), a parent report instrument, were also consistently below 10th percentile for all subjects (mean standard score= -1.95). MLU scores were calculated for the five language-delayed children who were combining words and were consistently in the lowest 10th percentile for their age expectations (mean standard score= -2.26). Of the 10 LD subjects, two had been receiving weekly speech and language therapy for a period of 8 and 15 months, while the others were recruited from a pool of children awaiting speech-language assessment and/or therapy within the Vancouver Health Department.

Although all the LD subjects passed a cognitive screening (described above), a complete evaluation of their nonverbal performance scores was not conducted, therefore the specificity of their language delay could not be determined. The group of LD subjects included in this study was intended to be more closely representative of a typical clinical sample.

Typical Language Subjects

As a group, the 10 children in the language-typical (LT) group were selected to demonstrate productive language skills similar to those of the language delayed group (see Table 1 for a summary of the LT and LD expressive language scores). They were about 11 months younger than the LD children (mean age for the TL group=20.7 months, range= 15 to 25 months). T-test comparisons confirmed adequate matches
between the language delayed and typical groups based on Reynell Expressive raw scores ($t(18)=0.48$ $p=0.636$), MacArthur CDI raw scores ($t(17)= 0.41; p=0.685$) and MLU raw scores ($t(7)= 0.42; p=0.687$). One CDI form was not returned to the examiner. Mean standard scores for the typical group were between -0.3 to +0.3 SD on the three measures suggesting that the typical-language subjects represented an average group of language peers for the language-delayed subjects.

**TABLE 1: Mean raw scores (and standard deviations) on productive language measures for language-delayed (LD) and typical-language (TL) groups.**

<table>
<thead>
<tr>
<th>Measures</th>
<th>LD</th>
<th>TL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reynell Expressive</td>
<td>18.2</td>
<td>19.7</td>
</tr>
<tr>
<td>MacArthur CDI</td>
<td>131.7</td>
<td>159.8</td>
</tr>
<tr>
<td>MLU</td>
<td>1.6</td>
<td>1.7</td>
</tr>
</tbody>
</table>

*a* the large standard deviations in the raw scores of the MacArthur CDI reflect the fact that the groups were comprised of children from different language levels.

### III General Procedures

Subjects participated in two or three data collection sessions, each lasting approximately 45 minutes. These sessions took place at the children’s homes and were typically scheduled within a period of 3 weeks. The overall testing period was prolonged in four cases due to illness and intervening holidays. Appointments were arranged with the caregiver at times when their child was likely to be alert and
prepared to engage in play. Time was set aside at the beginning of each session for ‘warm-up’ games including books, puzzles, bubbles, a toy train and car. With the exception of one shy child, subjects became quickly at ease with the examiner.

The assessment battery consisted of six tasks: three language, two symbolic nonverbal (play) and one nonsymbolic (block building). Language was assessed with the Reynell Developmental Language Scales (1985), the MacArthur Communicative Development Inventory (CDI)- Toddler Form or Infant Form (1989) and a spontaneous language sample. Three language assessment tools were required to accommodate the range in ages and language levels of the subjects. Every subject was scored on the MacArthur CDI and the expressive portion of the Reynell. A spontaneous language sample was collected for all children; MLU was calculated for the nine children (five LD, four TL) who made word combinations. The comprehension section of the Reynell was administered to all subjects; testing was not completed for three of the children with typical-language due to their variable cooperation. All children participated in the Symbolic Play Test (SPT; Lowe and Costello, 1976) and contributed samples of free play. A block construction task (developed by Stiles, J., UCSD, personal communication with Johnston, 1991) served as a test for manipulative problem solving and was given to all subjects.

Within certain constraints, the presentation order of the tasks was systematically varied to reduce the influence of the child’s familiarity and comfort with the examiner on performance. Productive language assessment generally took place during the first session since it was a major criterion in determining eligibility for the study. The similar materials used for the Symbolic Play Test and Reynell dictated that the play test be administered first if both tests were given in the same session. If possible, the free play sample and the SPT were conducted on separate days.
IV Task Descriptions

Each child participated in the following tasks in the presence or proximity of their parent or caregiver.

a) **Reynell Developmental Language Scales** (1985) are standardized measures of children's language comprehension and production using a variety of familiar household objects and toys. The comprehension scale includes: recognition of familiar object names, following simple directions and understanding concepts such as number, color and size. Expressive items include: labelling objects and pictures, picture description and language production while interacting with an adult. Results of the Reynell were expressed as standard scores.

b) **MacArthur Communicative Development Inventory (CDI)- Toddler Form** (1989) is a two part parent report instrument and was used primarily as an estimate of vocabulary size. Parents were given this form on the first visit and could complete it after the session at their leisure. In Part I parents are asked to check the words their child uses from a list of 680 vocabulary words organized into 22 categories (e.g. animals, food and drink, body parts, question words). The second part, pertaining to grammatical development, includes items asking for the frequency of use of various morphological inflections (e.g., plural or possessive 's', '-ing' for progressive tense, regular and irregular past tense) as well as items requiring parents to select the forms most like their child uses (e.g. "that my truck" or "that's my truck"). Normative information is available for children 18 months to 30 months and generates standard scores.

The **Infant Form** of the **MacArthur CDI** (1989) was substituted for the youngest children. The format of this version is similar to the toddler form, but includes opportunities for the parent to check the words and expressions their child seems to understand as well as says. Instead of asking questions regarding grammatical
development, parents are also asked to cite examples of their child's nonverbal communicative and play behaviours. Results may be similarly expressed in terms of standard scores.

For primarily single word users, productive vocabulary may differentiate a child's language level in a way that mean length of utterance (MLU) cannot. For instance, children with an MLU of around 1.0 may vary considerably in terms of the diversity and extent of their vocabulary (Bates, Bretherton & Snyder, 1988). As a parent report instrument, the CDI also avoids some of the temperamental issues of assessing a young toddler by a largely unfamiliar adult.

c) A language sample was audiorecorded for each child during a play interaction with the investigator. The samples contained at least 50 intelligible, nonimitative utterances and were recorded using a high-quality Marantz PMD430 audiorecorder and Realistic pressure zone microphones. The examiner provided the same books and toys to each subject but children were permitted to introduce their own belongings if they wished.

Language samples were transcribed for those children using at least some word combinations and a mean length of utterance (MLU) was calculated. MLU in morphemes is a traditional measure of general morpho-syntactic complexity (Brown, 1973). Standard scores can also be generated, using published norms (Miller & Chapman, 1981).

d) A block construction copying task was used as a measure of nonsymbolic cognition (i.e., manipulative problem solving). Although it is not possible to guarantee that the children would not use their available language during this task, verbal mediation is not required to be successful at the task. Further, the scoring system does not penalize children for solving the problem nonverbally; the children are under no time constraints, and the block construction model remains in their view throughout.
The procedures for this task have been developed recently by Joan Stiles at the University of California, San Diego, based on her work on young children’s spatial development. This task is designed to assess a child’s ability to organize and group objects in a 3-dimensional space. It is presented as a copying game with blocks and consists of nine different structures. These constructions represent the performance range typically demonstrated by children aged 18 to 42 months (Stiles, 1988). The constructions vary in the type and difficulty of relations that must be coordinated for successful replication. For instance, the stack of blocks is the simplest structure consisting of a single spatial locus and extension in one spatial direction. The horizontal ‘L’ structure can also be generated from a single spatial locus, but involves extension in two spatial directions. Even more demanding, a child building the double arch must integrate several separate spatial loci, in several spatial directions.

Two practice items were provided to familiarize the child with the copying instructions before proceeding with the nine block constructions. The child and the examiner are given a pair of blocks. For the first practice trial one block is placed on top of the other and for the second, the blocks are placed end to end along the floor. For each of these items the child is encouraged to “...make one just like it”. This phase is repeated up to three times. For the children who successfully followed the task instructions, the examiner proceeded with the nine block constructions. For these items the building of each model was hidden from the child, but the completed structure remained in view as the child was asked again to “...make one just like it”. This routine was repeated for each of the block structures.

A three value scoring system was used to encode the accuracy of the child’s replications. Two points were awarded for an accurate construction, 1 point for a partial or approximate copy, and a score of 0 where not even a partial copy was produced. At present the normative group consists of 26 children: five at 24 months,
seven at 30 months, five at 36 months and nine at 42 months. The results from this task may therefore be interpreted only cautiously in standard scores.

The method described by Stiles (in press) eliminated children who did not comply with the copying instructions during the practice phase. For the purposes of this project, an alternate procedure was followed for those children who, whether for attentional or comprehension reasons, would not attempt to copy the block constructions. These children were provided with 8 blocks and their spontaneous behaviour was observed while the investigator continued to provide models in parallel play. Their responses during the practice items were also noted. Information is available on the constructions first demonstrated spontaneously between the ages 18 months to 42 months (Stiles-Davis, 1988). Under these circumstances, for example, a child who stacks the blocks may be credited with at least an 18 month level. Recent data from Stiles (in press) indicate that although the developmental order of block constructions remains essentially the same for both the spontaneous and the elicited copying tasks, the overall level achieved in the elicitation format is about 6 months behind that demonstrated spontaneously.

e) The Symbolic Play Test (SPT) is a standardized instrument designed to assess children's nonverbal symbolic abilities through their play behaviours. The SPT evaluates a child's play with small replicas of familiar objects. During administration of the test the child was seated on the floor. Whenever possible, the parent or caretaker sat near the child. Normally developing children tend to demonstrate more varied and frequent pretend play in the presence of a familiar, supportive adult (McCune-Nicholich & Fenson, 1984). Of the 20 subjects, only five children participated in this task while their parent or caretaker was outside the room. The 15 adults who remained with the child were instructed not to provide verbal or nonverbal prompts or suggestions regarding play activities but to respond naturally to any of the child’s overtures.
The toys in the SPT are organized into four independent situations. The four sets are introduced in a standard order of increasing difficulty and the child's spontaneous use of the objects is observed. In the second toy setting, for instance, the child is presented with a small doll, pillow, bed, and blanket, and points are earned for each of the following: discriminate handling of doll, relating the doll to the bed, relating the blanket or pillow to the doll, putting the doll to bed, and using the pillow correctly. The results derived from this scoring system may be represented as age equivalences and standard scores for ages 12 to 36 months. Subjects were videotaped during this task using a Panasonic model AG-190 videorecorder.

The child's performance on this instrument was treated in two ways. First, it was scored according to the test instructions. As in the example above, credit is awarded for discrete behaviours by the child. For instance, in the first toy situation, the child may receive a point for combing or 'feeding' themselves, and another for combing or 'feeding' a doll. Therefore, whether the child performs the two behaviours sequentially or each in isolation, the score is the same. To capture other kinds of differences in the complexity of the child's play, the SPT behaviours were also transcribed and scored according to an adaptation of Nicolich's (1977) symbolic play coding system (see Appendix A). This type of analysis was also applied to the children's free play sample, and will be described in detail in the next section.

f) A videotaped spontaneous play sample was the second measure of each subject's symbolic play. The articles used for this task comprised toys drawn from Nicholich (1977) and an assortment of objects adapted from Terrell & Schwartz (1988), and are shown in Appendix B. The child was first given an opportunity to investigate and play with the doll and objects. If during this time the child did not spontaneously begin to play or create a pretend situation, then the examiner gave a standard suggestion ("let's put the baby to bed"). The average total observation time was about 13 minutes (range 8.3 to 20.8 minutes) with no significance difference
between groups. The play sessions were concluded when it appeared the children had exhausted their repertoire, or otherwise indicated they were finished.

As with the Symbolic Play Test, the parent or caretaker was instructed to behave as naturally as possible in responding to the child, but to avoid making specific suggestions about what to do with the objects and toys. With the exception of the verbal suggestion provided to the child early in the play session, the examiner maintained a similarly passive role. In responding to children’s queries ("what’s this") about some of the unfamiliar objects, the examiner showed interest without naming the object or indicating possible uses to the child (e.g. “wow, look at that”, “I don’t know what that is, what do you think”). When necessary, nonspecific phrases (e.g. “look what else is here”) were used to redirect the child’s attention to the toys.

V Symbolic Play Analysis

The following steps were taken to assign free play scores for the LD and LT children:

1) A transcription of each videotaped free play sample was done including in the following information: child’s play behaviours and utterances; contextual information (e.g., caretaker’s or examiner’s actions and utterances; occurrences in the child’s immediate environment), clues to child’s intent (e.g., affect, smile, eye gaze, sound effects and searching behaviours were also noted because of their important role in evaluating play)

2) Each transcript was divided into episodes according to the guidelines of Nicholich’s (1977) coding system. An episode is generally defined as a focused interaction with a single object or a group of objects, consisting of a single action or a sequence of actions which seem to hang together to form a ‘theme’ for the child. An episode began when the empty-handed child engaged with an object and ended when the child was again empty handed. Other toys or objects could be picked up or
incorporated into the child’s play without necessarily ending an episode. An episode was completed when the original object was discarded or when the child’s attention had clearly shifted elsewhere.

3) Each episode was scored according to the level of play demonstrated following the assessment system developed by Nicholich (1977). If an episode included several play schemes, the level was assigned according to most advanced level of performance. See Appendix A for descriptions and criteria for the levels.

4) Each child was assigned a symbolic maturity level based on the highest level of play in at least two different episodes. For example, to earn a symbolic maturity level of Level 5.1., the child needed to show at least two different episodes with object transformations (i.e., pretending to brush hair with a car and pretending to eat with a screwdriver).
Endnotes

1. Thirteen potential subjects were not included in the project for the following reasons: exceptionally high language production scores (6), language score between criterion for either group (1), testing incomplete due to illness (1), predominate second language in home (1), prohibitive interference by sibling or caregiver (2), video mishap (1), unintelligible speech (1).

2. Interpretation of the child’s intention is obviously a key issue in assigning levels to play acts. What children say as they play often provides clues to the symbolic quality of their play. For instance, if a child says “cucumber” as they bring a piece of garden hose to their mouth, the act can comfortably be classified as an example of object substitution symbolic play. Certain investigators with normal populations (e.g., Ungerer, Zelazo, Kearsley and O’Leary, 1981) have used these kinds of verbal announcements as central to their analysis and have excluded those play acts not accompanied by speech or other kinds of meaningful vocalization (e.g., drinking sounds). This scoring criteria may place children with limited expressive repertoires at a distinct disadvantage. In the absence of overt verbal behaviours, the symbolic intention of the play act may be ambiguous. Relating to the example above, without the label “cucumber” the act may be dismissed as simple mouthing.

To achieve a fair estimation of a child’s nonverbal symbolic abilities without the confound of verbal abilities, nonverbal evidence such as eye gaze, context, playfulness, and body language were emphasized. Because these clues are more subtle and ambiguous than a word, scoring is more subjective.
RESULTS

I Overview

This project represents an initial step in evaluating symbolic play training as a viable means of promoting language development with language-delayed children. The children most likely to benefit from this approach would be ones whose language delay is related to a special problem with symbolic function, that is, potential candidates would demonstrate significantly poorer skills on symbolic tasks (i.e., pretend play and language), than on a non symbolic, cognitive task (i.e., block construction). In order to confirm the existence of such children and further describe them, a group of language delayed preschoolers and a group of language-normal peers participated in tasks designed to measure language, pretend play ability and manipulative problem solving ability (block construction).

II Group Comparisons

Language Comprehension

As previously described, the language-typical and language-delayed groups were matched for raw scores on expressive language measures (see Table 1). Despite the good match for language production, the groups were not matched for language comprehension. Comprehension was measured by the Reynell Language Scales. A t-test comparison of mean raw scores revealed that the older, language-delayed group had significantly better language comprehension scores than their younger, expressive-language peers (mean LD: 24.1, mean LT: 18; t(15)= -2.24; p< 0.05). A comparison of mean standard scores, however, revealed a contrasting difference with the typical-language children now demonstrating a higher mean score than the
language-delayed children (mean LD: -0.69 sd, mean LT: 0.35 sd; t(15)= 3.14; p<.05). While the mean standard score for the language-delayed group was within the average range, three of the language-delayed children scored in the lowest 10th percentile (i.e. below -1.3 SD). All typical children showed average or better comprehension. Thus, as a group the language-delayed children demonstrated better comprehension in raw scores than the typical-language group. However, the LD group performed more poorly relative to age expectations, with three children actually scoring outside the normal range.

Symbolic Play

As described earlier, each child was given the Symbolic Play Test (SPT) and was also videotaped during free play with various toys and objects (listed in Appendix A). Means, ranges and standard deviations of raw and standard scores for each group on the SPT are presented in Table 2. There was no significant difference between the group means for raw scores (mean LD: 14.6, mean LT: 12.3; t(18)=0.98; p>.05), despite the significant age advantage of the children in the LD group. A significant difference in the mean standard scores (mean LD: -1.08 SD, mean LT: 0.265 SD; t(18)= 2.53; p<0.05) was found. As seen in Table 2, the range of scores were large for each group. Although the means of both groups were within the normal range, six of children with language delays showed delays in their play (scores below the 10th percentile).

Observations of the children's free play served as a check on the results of the SPT and indicated the children’s facility with combining and sequencing schemes and making object substitutions when the play context was less structured. As described earlier, each subject was assigned a play level (McCune-Nicholich) according to the highest level observed with at least two different exemplars. Again, no significant group difference was found for raw scores derived from the free play samples (mean
LD: 4.7, mean LT: 4.6; t(18) = -0.18, p > 0.05). In the absence of detailed normative information, derived standard scores were unavailable. However, given the general age expectations described in the literature (e.g., Nicholich, 1977), we would expect the children in the language-delayed group to demonstrate the most sophisticated symbolic play on the McCune-Nicholich rating system (coded by a score of 6 in this report). The mean score for the LD group was instead only 4.7. Therefore again we find LD play scores similar to the scores of their language peers, and very likely poorer than their age peers.

**TABLE 2: Symbolic Play Test results for language-delayed (LD) and typical-language (TL) groups**

<table>
<thead>
<tr>
<th></th>
<th>LD</th>
<th>TL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Raw scores</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td>14.6</td>
<td>12.3</td>
</tr>
<tr>
<td>SD</td>
<td>5.3</td>
<td>5.2</td>
</tr>
<tr>
<td>range</td>
<td>7 to 22</td>
<td>7 to 22</td>
</tr>
<tr>
<td><strong>Standard Scores</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td>-1.08</td>
<td>.27</td>
</tr>
<tr>
<td>SD</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>range</td>
<td>-2.7 to 1.3</td>
<td>-0.95 to 2.4</td>
</tr>
</tbody>
</table>
**Manipulative Problem Solving**

Because the block construction task was nonlinguistic and nonsymbolic in nature, it was expected that the language-delayed group, with a significant age advantage, would perform better than the language-typical group. The LD group did earn a higher mean raw score than the LT group, but a t-test comparison indicated that this difference was not significant (mean LD: 3.9, mean LT: 2.6; \( t(18) = -1.69 \), \( p = 0.1084 \)). It is possible that a significant difference between the group scores would have been demonstrated with a larger sample size or with a task that had a lower ‘floor’ (two of the LT group failed to score at all). It is also possible that this finding reflects the heterogeneity of the LD group. In this regard, it is worth noting that a greater range of scores was observed among the LD group (2 to 8 vs 0 to 4).

Group comparisons of standard scores was precluded by the fact that seven of the children with typical-language fell below the youngest range of the preliminary normative information provided by Stiles (in press) and most were unable to follow the elicited format of the task. Standard scores were estimated, however, for all of the language-delayed children. Overall the scores fell within age expectations (mean standard score for the LD group= -0.613 SD), however, four individual scores fell well below the 10th percentile (mean standard score for this subset of the LD group= -1.97 SD). Children with specific language-impairment would be expected to handle this kind of manipulative task within age expectations. The fact that 4 of the 10 children with language delays demonstrated significant difficulties with this task suggests that the pool of language-delayed children was not limited to those with a deficit specific to language alone.

**Conclusions from Group Comparisons**

As a group, the children with language delays (LD) did not perform significantly differently in tasks of language comprehension, pretend play or manipulative problem
solving (block construction) when compared to their younger peers with typical-language (TL). Furthermore, as a group, the LD children received a mean standard score within the normal range for their age on each of these tasks. However, not all the children in the LD group had age appropriate, language comprehension, pretend play or manipulative problem solving abilities. It was apparent that there was a substantial range of these abilities within the LD group and that by considering all the children together, interesting findings were likely to be obscured.

To further investigate the relative abilities in symbolic and manipulative tasks, the behaviour of each child was next considered separately.

III Individual Comparisons

For each child, language production, symbolic play and manipulative problem-solving levels were plotted schematically against age expectations. These profiles capture each child’s relative performance across tasks.

Rationale for the data points

Standard scores based on each child’s performance on the expressive portion of the Reynell Language Scales were used to plot language level. Other information about language production level (i.e., vocabulary and MLU) was consistent with, and supportive of, the results of the Reynell. All language-delayed children scored in the lowest 10th percentile for each language measure given.

Standard scores based on each child’s performance on the block construction task were used to plot manipulative problem solving level.

Standard scores based on each child’s performance on the Symbolic Play Test were used to plot symbolic play level. Observations of the children’s free play served as a check on the results of the SPT. For all but two children (subjects #3, 10), the
SPT score was in accord with free play abilities. The special circumstances for these children will be considered in later sections; their profiles were nevertheless based on the SPT score.

**Three Point Profiles**

**Typical-Language Children:** As expected, all of the children with typical-language seemed to demonstrate a flat profile, with available information suggesting age-appropriate performance in all tasks. As previously discussed, some of the typical children were chronologically younger than we had expected (in order to provide good language production matches for the delayed group) and therefore the block construction task had limited scope for them. For instance, two children below 18 months did nothing constructive with blocks; while not representing a meaningful description of manipulative problem solving level, their behaviour was not inconsistent with expectations for their age.

**Language-Delayed Children:** The language-delayed children generally fell into three different profiles. These distinct 3-point profiles are represented in Figure A, and the data points are listed in Table 3. Performance on the block task distinguished Profile A from the others. Children following this developmental pattern essentially performed significantly below age expectations on all three tasks. Three children followed this pattern of performance. Although a cognitive screening had been used to exclude those subjects with profound developmental delays, these three subjects apparently demonstrated some kind of more general delay. These three children demonstrated significant difficulties in all the tasks presented. A fourth child was tentatively added to this group because of her poor performance on the block construction task, despite her age appropriate symbolic play score.
Figure A: Three profiles of performance across measures of language production, symbolic play, and manipulative problem solving shown by language-delayed subjects.
<table>
<thead>
<tr>
<th>Subject # (age in months)</th>
<th>Language</th>
<th>Symbolic Play</th>
<th>Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profile A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 (30)</td>
<td>-1.7</td>
<td>-1.4</td>
<td>-1.5</td>
</tr>
<tr>
<td>3 (38)</td>
<td>-1.5</td>
<td>-0.9</td>
<td>-1.9</td>
</tr>
<tr>
<td>4 (33)</td>
<td>-1.3</td>
<td>-1.6</td>
<td>-2.3</td>
</tr>
<tr>
<td>10 (43)</td>
<td>-2.1</td>
<td>-2.7</td>
<td>-2.2</td>
</tr>
<tr>
<td><strong>Profile B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 (23)</td>
<td>-1.9</td>
<td>-1.5</td>
<td>0.18</td>
</tr>
<tr>
<td>6 (28)</td>
<td>-2.2</td>
<td>-1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>8 (30)</td>
<td>-2.7</td>
<td>-2.5</td>
<td>-0.9</td>
</tr>
<tr>
<td><strong>Profile C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (28)</td>
<td>-1.3</td>
<td>1.3</td>
<td>-0.5</td>
</tr>
<tr>
<td>7 (24)</td>
<td>-1.3</td>
<td>0</td>
<td>2.0</td>
</tr>
<tr>
<td>9 (39)</td>
<td>-2.3</td>
<td>0.2</td>
<td>-0.9</td>
</tr>
</tbody>
</table>

TABLE 3: Individual subject standard scores on measures of language production, symbolic play and manipulative problem solving for language-delayed (LD) children described by Profile A, B or C.
The remaining six children present a more interesting picture. These children would likely fit in the category of specific language impairment (SLI). All demonstrated age appropriate performance in block construction, therefore showing the criterial developmental gap between language production and nonverbal, manipulative problem solving. Two different profiles within this group could be distinguished by the level of symbolic play. In Profile B, symbolic play is similar to the language level (i.e. below age expectations). Three children demonstrated this pattern of performance. In Profile C, symbolic play is similar to the level of block construction (i.e., at age expectations). Again, three children demonstrated this pattern of performance. In other words, half of the SLI children tested demonstrated poorer skills on a symbolic play task than on a nonsymbolic task (block construction), and half did not. What was the difference between the SLI children who were 'good' players and those that were not?

*Potential Distinguishing Factors between children with Profile B vs. C*

Spearman rank order correlations were used to investigate the association the children's symbolic play performance and other measures such as age, language comprehension, and language production level.

Correlations for language comprehension (r=0.2029) and age (r=-0.2073) were low and not significant. In other words, neither the comprehension scores nor the child's age appeared to predict the play scores in any meaningful way.

As shown in Table 4, the correlations between play scores and language production scores were generally considerably stronger. Despite the small sample size, significant correlations were found between SPT raw scores and both the MacArthur CDI raw scores (r=0.8857; p<0.05) and standard scores (r=0.8286; p<0.05). The reader is reminded that the raw scores from the MacArthur CDI
represent the actual productive vocabulary estimated by the child’s parent and is therefore immediately interpretable. The SPT raw scores represent the number of play acts performed. It is not clear from the results in Table 4 whether the severity of the child's language delay (standard scores) or their absolute language level (i.e., raw vocabulary score) provide the closest association with the child's play performance. This ambiguity undoubtedly reflects the fact that the children with age appropriate play skills (i.e. Profile C) had better language, measured either in normative or absolute fashion, than those with delayed play skills (see Table 5).

**TABLE 4: Spearman rank order correlation values for language-delayed subjects described by Profiles B and C.**

<table>
<thead>
<tr>
<th></th>
<th>Reynell Expressive (standard score)</th>
<th>MacArthur CDI (standard score)</th>
<th>MacArthur CDI (raw scores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPT (raw scores)</td>
<td>0.1739</td>
<td>0.8857</td>
<td>0.8286</td>
</tr>
<tr>
<td>SPT (standard scores)</td>
<td>0.6088</td>
<td>0.6000</td>
<td>0.5429</td>
</tr>
</tbody>
</table>
TABLE 5: Mean scores on language production measures for language-delayed (LD) children with low play scores (Profile B) and high play scores (Profile C).

<table>
<thead>
<tr>
<th></th>
<th>Reynell Expressive (standard scores)</th>
<th>MacArthur CDI (standard scores)</th>
<th>(# of words)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Play (Profile B)</td>
<td>-2.27</td>
<td>-2.55</td>
<td>12</td>
</tr>
<tr>
<td>High Play (Profile C)</td>
<td>-1.63</td>
<td>-1.82</td>
<td>110</td>
</tr>
</tbody>
</table>

IV Summary of Findings

i) The language-delayed group scored no differently than the language matched typical group on measures of symbolic play and nonverbal, manipulative problem solving (i.e., block construction).

ii) Profiles were constructed based on each child’s performance on the measures of language, symbolic play and manipulative problem solving. There was significant heterogeneity in play scores among the language-children who performed well on the block construction task. One half of this group demonstrated a symbolic play level similar to their language level, that is, below age expectations (Profile B). The other half demonstrated a symbolic play similar to their level of block construction, that is, at age expectations (Profile C).

iii) Children in Profile B and C were not distinguished by their age or comprehension abilities, but appeared to differ somewhat in language production abilities. Children with appropriate symbolic play skills (Profile C) appeared to have more words and were relatively less delayed in their language production abilities.
Endnotes

1. There were three scores missing from the typical group due to variable cooperation from these youngsters. Informal observations and parent report suggested no concerns regarding these children's language comprehension.

2. Notice that one of the four children (subject #3) shows an unlikely profile of an age appropriate symbolic play level and delayed language and manipulative problem solving level. One explanation is that because the child's age exceeded the SPT norms, the derived standard score represents an overestimation of the subject's play skills. Some supportive evidence comes from the analysis of the subject's free play, since the subject did not reach criterion for the highest level of play (a level expected for her age). The other explanation is that the subject's performance on the block test was a poor estimation of her manipulative problem solving abilities, due potentially to variable attention or interest in the activity. If this were the case, this child's abilities would be better captured in Profile C. Given the present data, however, it was not possible to decide between these possibilities.
DISCUSSION

I Overview

The language-delayed (LD) group as a whole scored no better on measures of symbolic play than their younger typical-language (TL) peers. It became clear that the LD children comprised a heterogeneous group from which distinct patterns of performance were identifiable across measures of language, symbolic play and manipulative problem solving (i.e., block construction). Three children conformed to a profile consistent with a ‘symbolic deficit.’ Interestingly, these children appeared to be at the very earliest stages of language; children with slightly more developed language did not appear to demonstrate a problem specific to symbolic function. This finding has clinical implications for the use of symbolic play training as a viable approach in the remediation of language delays. Each finding will be considered in turn.

II Lack of Group Differences

The lack of group differences between the LD and TL groups on absolute performance on the block construction task may have resulted from the heterogeneity of the LD group. As previously mentioned there were four language-delayed subjects who performed significantly below age expectations and likely contributed to a lower overall group mean. The fact that the youngest of the typical-language children were unable to participate meaningfully in this task compounds the difficulty of interpreting this group comparison. Fortunately, comparisons between the groups on the symbolic play measures proved to be more fruitful.

The children in the LD group, despite a significant age advantage over the younger TL group performed no better on measures of symbolic play. As previously
reviewed, the findings in this area have been mixed; for example, the symbolic play abilities of children with language delays have been judged to be better than (e.g. Terrell et al., 1984) or no different from their language peers (e.g. Thal & Bates, 1988). The Terrell et al. (1984) study provided the best standard of comparison to the present study for two reasons: similar ages of language-delayed children and the same primary measure of pretend play ability (i.e., Symbolic Play Test (SPT); Lowe & Costello, 1976). Whereas no difference between groups was found in the present investigation, the LD children in the Terrell et al. (1984) study instead demonstrated significantly more advanced symbolic play than the normal language peers tested.

One possible explanation for the incongruity in these results is the likelihood that the present study included a more heterogeneous group of LD children. Subjects in the Terrell et al. (1984) study all scored within normal limits on the Leiter International Performance Scale (Arthur, 1952). Although children in the present investigation completed a cognitive screening to rule out global developmental delay, it is possible that up to four of the subjects children with language delays may have manifested significant cognitive deficits as inferred from their poor performance on the block construction task. The inclusion of these children’s play scores may have contributed to the low mean raw play score of the LD group in the present study, thus masking a potential difference between the groups. In fact, although these four subjects all had Symbolic Play Test standard scores below the normal range, their raw scores were not actually among the lowest scores (mean of all LD: 14.6; mean of subgroup: 15.75) and therefore would not have depressed the overall mean score.

A second possibility is that there was a substantial heterogeneity in the relative symbolic play abilities of the children with language delays in the present study that was only loosely related to their general cognitive level. Six of the LD children demonstrated significantly delayed play and four had age appropriate play.
This raises a similar question about the original Terrell et al. (1984) findings. As only group mean scores were given in that report, individual subject performance was not directly available for comparison. Nevertheless, based on the reported ranges in SPT scores and ages in that study, it would have been possible for a similar scope in performance to have occurred with their subjects as well. A given subject could have scored up to 0.7 SD or as low as <-2.7 SD. In other words, their group may have included a combination of children who scored at their age level and children who scored closer to their language level. Although purely speculative, this possibility calls into question the conclusion that the symbolic play abilities of LD children lie between their language and age peers. This conclusion may be a function of reporting group results. The reality may be that there are two subgroups: one with play at their language level and the other with play at their age level.

Finally, it is possible that the level of analysis in this study contributed to the finding of no group difference in free play ability. Terrell and Schwartz (1988) also found no differences between their language-impaired, language-matched and age-matched groups in terms of the range of play activities demonstrated. They did, however, find differences in the frequency of specific play types; language-impaired demonstrated fewer examples of the more complex symbolic play and more of the simpler, concrete type play behaviours. The reader is reminded that, in the present analysis, the children were assigned a score based on the highest level of play observed in at least two different episodes. This type of analysis captures information about the pretend play capabilities but does not reveal potential differences in the ‘usual’ level of play. The language-delayed children might have used fewer, or more, complex play routines than their younger language peers.
Summary

There seem to be three possible explanations for the finding that the language-delayed group and the typical-language groups performed no differently on measures of symbolic play ability. First, the language-delayed group likely included children with broader cognitive deficits. Secondly, the level of analysis may not have captured potential differences in free play. The third and most interesting explanation was that there is true and substantial heterogeneity in language-delayed children’s play abilities. Interesting differences in symbolic play performance, masked in the group results, were revealed when each child was considered individually. Such heterogeneity may also be hidden in the grouped data reported previously (e.g., Terrell et al. 1984).

III Diversity of Performance: Distinct Profiles

In the present study, it was the diversity of individual performance that was intriguing. By contrasting language, symbolic play and manipulative problem solving (i.e., block construction) levels, three different profiles of performance were identified among the language-delayed children. As previously mentioned, there were four children described by Profile A, where performance essentially fell below age expectations in all three areas. The remaining six children demonstrated age appropriate performance in block construction, therefore showing the expected developmental gap with their language development. Interesting differences were observed in the symbolic play level among these six children. Three children showed age appropriate play skills (i.e., same as block construction) as captured by Profile B; the other three showed delayed play skills (i.e., same as language) as described by Profile C. In other words, three children were identified with an apparent “symbolic deficit” in the presence of other cognitive strengths (e.g., manipulative problem
solving); three others were observed to have strengths in both symbolic and nonsymbolic nonverbal tasks despite having delayed verbal abilities.

The children’s level of comprehension was investigated as a possible factor in delineating between children with poor play skills (Profile B) and children with age appropriate play skills (Profile C). Comprehension ability was previously found to correlate with the production of certain play gestures in a familiar script (Bates, Bretherton, Snyder, Shore, & Volterra, 1980) and was identified as an important predictor in distinguishing ‘late bloomers’ from those children whose late start in talking persisted (Thal, Tobias & Morrison, 1991). Bates & Thal (1988) hypothesized that a foundation of good language comprehension may allow sequencing skills to progress in play, even in children still using only single words; that is, comprehension skills may reflect a level of symbolic maturity that is available, if not for productive verbal development, then for play development. In the present analysis, however, comprehension skills did not appear to be associated with the play level differences. There was no indication that children with relatively better language comprehension had some underlying knowledge of language symbols that predicted their symbolic play ability.

Age was also considered as a potential factor in distinguishing Profile B from C, given that older children may have possessed greater object knowledge and had more symbolic play opportunities. Nevertheless, the child’s age did not appear to be associated with the relative differences in play level in this study.

The best line of explanation would seem to be that the child’s language abilities had at least some association with the variation in play levels. The results suggested that the children with age appropriate play level (Profile C) had somewhat better language than those with delayed play skills (Profile B). Language ability was considered both in relative terms (i.e., degree of delay) and in absolute terms (i.e., number of words in vocabulary). Given the small sample size and the limited range of
ages, it was not possible to choose convincingly between the two possibilities. One interesting speculation is that the relationship between play and language changed at different absolute levels of language function. At the earliest stage of language onset, deficits in language were related to deficits in symbolic play; however, at a slightly later stage, the symbolic play deficit may have resolved, while the language delay remained. This relationship is further considered in the next section.

IV Language and Play: A changing relationship

The reader is reminded that the absolute level of language for children in both Profiles B & C was significantly delayed. However, the children with more words and more word combinations productively demonstrated stronger symbolic play skills. One possible explanation is that children use language to mediate their play (e.g., to maintain symbolic substitutions) and therefore, symbolic play development benefits from even a modest amount of language ability. There is another interesting possibility suggested in the work of Ellis Weismer, Murray Branch and Miller (1991). As part of a larger project, these investigators gathered information about toddlers’ language, play and cognitive development during eight assessment visits over a 21 month period. The children were 13 to 14 months at the beginning of the study; four children were identified as ‘late talkers’ based on their restrictive productive vocabularies during the course of the assessment period. Ellis Weismer et al. (1991) observed an increase in symbolic play skills (measured by the SPT) at around 50 words, for three of their four late talkers. It appears that a child’s language level may dictate whether or not a concomitant play deficit is observed.

Fisher (1980) suggested that relationships between two areas of performance may only be apparent at those points where development in the two areas depends upon the same specific skills. Linguistic and symbolic play schemes for objects may be
related in early development because they both depend on a common underlying symbolic function. The suggestion is that concomitant delays in both systems are seen early on, presumably when symbol use, per se, plays a larger role in the development of each. When the relationship between language and symbolic play is examined further along in the developmental process, however, we see the influence of the other factors involved in language development.

Zukow (1980; 1984) argues that play symbols never achieve the independent cognitive status of linguistic symbols. There are at least three important ways in which linguistic and play symbols differ. First, words are nondepictive and must be learned on their own terms. In contrast, play gestures can be learned through real life experiences. For example, the play gesture of pretending to eat from a stick depicts the child’s physical experience of eating with a spoon; the word “eat,” however, is entirely arbitrary to the act itself. Secondly, words are conventional in meaning whereas play symbols (i.e., object substitutions) may be freely chosen by the child. Finally, word combinations are constrained by their grammatical function and governed by a set of rules. Symbol combinations in play, on the other hand, may conform to a general theme but can be more haphazard in their construction. These are some of the differences that make linguistic symbols more complex, ‘harder’ to learn and likely account, at least in part, for the eventual disconnection of play and language development.

Thus far, only the differences between language and play as symbols have been considered to account for the eventual early disassociation between symbolic play and language development. Of course, other reasons may involve the nonsymbolic aspects of language (e.g., the fact that oral language depends on an acoustic signal and play does not). With this in mind, some investigators have looked toward specific processing dysfunctions such as attention, and memory as correlates of developmental language-impairment (for a review see Johnston, 1988). An evaluation of this
literature is beyond the scope of this report, but any one of these factors could lead to the early disassociation between play and language.

Summary

Interpreted in this way, the results of this study are consistent with the local homologies model (Bates et al., 1979) described earlier. In this study, an association between language and play is observed at a very early point in development when both areas depend on the same skills (e.g., ability to use and manipulate symbols). A disassociation is observed when other factors (having to do with the special nature of linguistic symbols and/or the unique demands of language) become increasingly important to the development of language. Consequently, for some children, play skills progress to an age appropriate level, and language development remains delayed.

V Clinical Implications

The reader is reminded that the impetus for this project came from the clinical realm; it was originally conceived as an initial step in evaluating symbolic play training as a viable method of improving language skills in young language users.

Recall what is meant by 'symbolic play training' in this context. As described in the introduction, some investigators (e.g. Terrell et al., 1989) have suggested that, because of the apparent relationship between play and language, the training of symbolic play may provide therapists with an alternative language facilitation strategy. The core idea is that a therapist may be able to boost a child's general symbolic capacity through play and expect a corresponding payoff in language ability. This notion holds appeal for some speech and language clinicians.

One of the objectives of this study was to determine whether we could identify likely candidates for 'symbolic play training.' We reasoned that to qualify, such
children should show evidence of a 'symbolic deficit' underlying their language delay. In other words, they should demonstrate significantly poorer skills on symbolic tasks (i.e., language and symbolic play) than on nonsymbolic tasks (i.e., block construction). We argued that this pattern of performance would identify children most likely to benefit from the symbolic play training approach.

In fact, the three children in Profile B would qualify for symbolic play training according to this criterion. Nevertheless, the speculation that Profiles B and C are developmentally related calls into question the utility of the symbolic play training approach, even with such candidates. It seemed that only children at a very early language level fit the description of having a 'symbolic deficit' (Profile B). For children at a slightly later language level, however, the symbolic play skills had apparently 'caught up' with the age appropriate manipulative skills (Profile C). That is, although the earliest language users showed commensurate symbolic play deficits, these play deficits had seemingly resolved for the slightly more advanced language users.

Consider that these results may reflect a developmental progression whereby Profile B children become Profile C children as their language passes a certain point. Results from another recent study (Ellis Weismer et al., 1991) provides preliminary evidence that children's play skills make a noticeable positive improvement at around 50 words vocabulary. That is, there may be a point, for some children, where symbolic play deficits resolve but language deficits persist. If this is the case, then there are at least two relevant implications. First, it would seem that symbolic deficit alone likely does not account for the delays in language development. Second, symbolic play training, as a means of remediating language delay, is not strongly supported. Although it seems that in very early development, delays in language may have something to do with symbol use (expressed as a delay in symbolic play as well), it appears that the development of play symbols and linguistic symbols soon follow independent courses. Because language development involves so much more than
simple symbol use, it makes more sense to focus on the potentially language specific difficulties at the outset. For example, if the delay in acquiring a grammatical morpheme is thought to relate to its lack of perceptual salience (e.g. Leonard, 1992), then the clinician might focus on increasing the salience of a given form by using exaggerated intonation, increasing the frequency of the form, and by placing it in a perceptually more ‘noticeable’ place in the sentence (i.e., at the end or the beginning; Ellis Weismer & Hesketh, 1993).

In fact, pretend play can offer a fun and motivating context for targeting such specific language goals. For instance, pretending to bathe a doll and a stuffed bear can provide a functional backdrop for teaching names of body parts and/or possessives (e.g. the therapist might say “uh oh look whose nose is dirty. Yup, dollie’s ...dollie’s nose is dirty...gotta clean dollie’s nose...you’re washing bear’s tummy...I’m gonna wash dollie’s ...”). The reader will recall that this is conceptually different from ‘symbolic play training’ (e.g. Terrell et al., 1989) in which the focus might instead be on helping the child use the play gesture ‘washing’ with substitute objects (e.g. using a block for soap) with the expectation that improving the child’s facility with manipulating symbols in play will enhance performance in language.

In order to use pretend play as an appropriate context for language facilitation, the clinician needs to be aware of the child’s level of play development. For instance, a child who demonstrates simple self-directed symbolic play (e.g., pretending to drink from an empty cup), would be unlikely to cope with an extended sequence in which the clinician uses unrealistic props. Suggestions regarding the clinical assessment of symbolic play include: (a) whenever possible do play observations over several sessions (Kennedy, Sheridan, Radlinski & Beeghly, 1991), (b) provide a set of ambiguous objects when trying to assess a child’s ability to of object substitutions (Terrell & Schwartz, 1988), (c) be aware of a child’s interest in the materials (as discussed in the next section, the scope of the Symbolic Play Test is limited), (d) take
into account the child's language abilities, and be sure to credit object substitutions on the basis of nonverbal evidence such as eye gaze, context, playfulness, and body language, and not only on the basis of a verbal announcement (e.g., child says "cucumber" as they bring a piece of garden hose to his mouth). Otherwise, a child with poor language skills may be inappropriately identified as having weak symbolic play.

Finally, although the use of early symbolic play training in therapy seems unlikely to remediate specific language delay, it may still be appropriate to include pretend play goals for reasons such as (a) stimulating the general development of child as part of a team approach, (b) encouraging social development (i.e., sharing materials, taking turns, making friends, being involved in preschool program, being perceived as a positive active participant by other children).

VI Methodological Observations and Suggestions for Future Research

The following observations of the methods bear consideration.

First, the sample size of the present study was limited. Replication with a greater number of more clearly identified SLI children is required before anything but the most cautious interpretation of the results is made.

Secondly, there is a need for a nonsymbolic cognitive measure normed across the 18 to 36 month range. The block construction task (Stiles, in press) remains in development as a diagnostic tool, and did not offer the optimum level of specificity for the present study. Importantly, this task is nonverbal in nature, in that the use of language is not required in order for a child to be successful. It is possible, however, that children may use language internally while copying a block construction. Nevertheless, the scoring system for the task does not penalize children for using purely nonverbal methods (e.g., there are no time constraints and the model remains in
view so that the child may copy the construction by means of trial and error). To be more useful as a clinical or research tool, more normative data from a larger number of children needs to be collected.

Finally, the **Symbolic Play Test** (Lowe & Costello, 1976) is limited in its scope as a measure of symbolic play behaviour. As previously noted, the SPT has been criticized on the basis of crediting functional-conventional type behaviours (e.g. Casby, 1991). Furthermore, the SPT yields only a single, gross play score and does not capture the more subtle differences such as the diversity, flexibility and frequency of schemes which appear to be important characteristics in describing the play of children with language delays (e.g. Rescorla & Goosens, 1993; Terrell & Schwartz, 1988).

Although the SPT was intended to be used with clinical populations outside the normative age group, the SPT materials may have limited appeal for older language-delayed children and therefore it may not be as likely to generate a representative sample of the child's play abilities. For example, one subject in the present study (aged 43 months), contributed only a single simple sequence with the SPT materials (e.g., child pretended to drink and then gave me the cup saying "coffee"), but engaged in far more elaborated episodes during free play where a greater quantity and diversity of objects were available (e.g. child pretended to go shopping for food, pretended to prepare the food and then feed the baby).

Further, given the age of this child, his play development would likely have been better characterized in the context of his play with his peers. Developmentally around age 3, symbolic play evolves into **sociodramatic** or **collaborative play** in which language skills are very important. Briefly, language is used to communicate with play partners about the child’s own role in the play theme (e.g., “I’m the daddy”), their partner’s role (e.g., “you be the baby”) and the prospective script (e.g., “pretend you’re sick and I’ll come and give you some medicine”). These complex negotiations make sociodramatic play demanding on language skills (e.g. see Sachs, Goldman and Chaille,
The limitations of the Symbolic Play Test as a clinical and research tool are acutely felt for children at this level.

**Future Directions**

I would be interested to see research addressing the following questions and issues in the area of pretend play: (a) Do early deficits in symbolic play ‘resolve’ as a child’s language develops? Is it true that play skills improve at a certain point in language development and is there any relevance to the preliminary longitudinal evidence pointing to 50 words (typical time of “naming insight”)?, (b) Do SLI children show deficits in sociodramatic play that are secondary to their language difficulties or do they have difficulty with the social, cognitive and/or overall processing demands. How can play abilities be assessed in the older preschool aged language-delayed child? The SPT clearly falls short of this challenge. There is a need for normative information regarding sociodramatic play of 3-5 year old children for clinical application, (c) Can symbolic play assessment be used as a reliable diagnostic tool in identifying late bloomers from children whose language delays persist (e.g. further to Thal et al., 1991)?

**Conclusion**

It would be unwise to take the results of this study as conclusive given the methodological shortcomings not the least of which was the small sample size. Nevertheless, this project has enriched my awareness and understanding in many ways. First, interesting aspects of the individuality of children and their abilities can be lost in the reporting of group results. Secondly, it is clear that there is no single relationship between language and play but a myriad. Thirdly, it is important to foster improved transmission of information between researchers and speech and language clinicians. It is vital for clinicians to remain open to new ideas, and to continue to
challenge their assumptions about language development and disorders. Likewise, I feel that it is important for researchers to investigate questions evolving from clinical practice and to draw conclusions ultimately applicable in a clinical setting.

There remain many unanswered questions about the relationships of language and cognition. In our continuing endeavor to make sense of it all, we can be reminded of Jean Jacques Rousseau who said "play is child's work." Work, while rarely easy, brings its own rewards.


Appendix A

Nicholich's (1977) play levels and criteria used as a basis for analyzing free play samples:

Level 1. Presymbolic scheme: The child shows understanding of object use meaning by brief recognitory gestures.
   - No Pretending
   - Properties of present object are the stimulus
   - Child appears serious rather than playful

Level 2. Auto-symbolic scheme: The child pretends at self-related activities.
   - Pretending
   - Symbolism is directly involved with the child's body.
   - Child appears playful, seems to be aware of pretending.

Level 3. Single-scheme symbolic games: Child extends symbolism beyond her or his own actions by:
   - i) Including other actors or receivers of action, such as a doll.
   - ii) Pretending at activities of other people such as parents.

Level 4. Combinatorial symbolic games:
   - Level 4.1. Single-scheme combinations: One pretend scheme is related to several actors or receivers of action.
   - Level 4.2. Multi-scheme combinations: Several schemes are related to one another in sequence.

Level 5. Planned Symbolic games: Child indicates verbally or nonverbally that pretend acts are planned ahead.
   - Level 5.1. Planned single-scheme symbolic acts- Transitional type: Activities from Levels 2 and 3 that are planned
     - i) Symbolic identification of one object with another
     - ii) Symbolic identification of the child's body with some other person or object.
   - Level 5.2. Combinations with planned elements: These are constructed of activities from Levels 2 to 5.1, but always include some planned element. They tend toward realistic scenes.
Appendix B

List of Toys and Objects used in Free Play (adapted from Nicholich, 1977; Terrell & Schwartz, 1988)

Toys
Baby
Baby bottle
Child-size shovel
Doll sized bucket
Doll sized shopping cart
Plastic tools and screws
Plastic telephone
Soft male doll
Stuffed bear
Doll sized boat
Plastic cup
Necklace

Objects (ambiguous function)
Shoe box
Small cardboard box
Drinking straws
Plasitic containers
A large tissue
Empty thread spools
Balls
Small circular sponges
6 inch length of garden hose
Matchbox
Ribbon