Language and Symbolic Play in Toddlers
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Language-play relations were examined in 110 18-month-old toddlers by observing their play actions in the Symbolic Play Test and assessing their language skills with the CDI parental report and the Reynell Developmental Language Scales. Significant associations between both language comprehension and production (vocabulary, use of suffixes, utterance length) and play were found when percentage of symbolic play was used as the measure of play competence. The total play score which included both functional-relational toy manipulation and symbolic play was not as strongly associated with the language measures. In both play measures relations were, however, higher between play and language comprehension than between play and language production. Out of the symbolic play categories other-directed pretence discriminated children’s play best. The relation between language and play was also supported by a subgroup analysis which showed that early talkers displayed significantly more symbolic play than late talkers. Children belonging to the latter group had a small productive vocabulary and they did not yet exhibit any sentence combinations or grammatical suffixes. The total play score correlated significantly with language comprehension among late talkers, whereas a significant connection was found between language comprehension and percentage of symbolic play among early talkers. Methodological issues concerning the assessment of toddlers’ play will be discussed.

The second year of life represents a period of important changes in children’s mental abilities, such as the emergence of language comprehension, language production, and symbolic activity in play (e.g. Bates, O’Connell, & Shore, 1987; McCune-Nicolich, 1981; Tamis-LeMonda & Bornstein, 1989, 1990, 1994). According to Piaget (1962), both language and symbolic play as aspects of the semiotic function reflect the development of underlying symbolic ability, and the beginning of representational thinking. Changes in the capacity for mental representation contribute to the development of language and play by supporting the expression of meaning in these domains (Bates et al., 1987; Fein, 1981; McCune-Nicolich, 1981; McCune, 1993. 1995; Piaget, 1962). Representation is considered a

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process, whereby children store information resulting from the perceptual analysis of their ongoing experience (Leslie, 1987). Researchers from different theoretical traditions agree that a pronounced change appears to take place at about 18 months in symbolic abilities. At this age most children are actively producing new words (Bates, Dale, & Thal, 1995; Fenson et al., 1994). Some children are starting to combine words and use inflections for expression of semantic meaning. By this age children are capable of symbolic activities that include incorporating others (e.g., doll, adult) in pretend play as well as sequencing the same act to itself and then to others (e.g., child drinks from bottle and then feeds doll from bottle) (e.g., Belsky & Most, 1981; McCune, 1993; O’Reilly & Bornstein, 1993). These developmentally significant changes have instigated a strong research interest in toddlers’ symbolic play and language development.

Studies concerning the relation between early language and symbolic play suggest some temporal and structural correspondences. Kelly and Dale (1989) found that children not yet using words also failed to show symbolic play, whereas single-word speakers exhibited presymbolic play schemes and self- and other-pretend activities. Similarly, longitudinal studies of Ogura (1991) and Veneziano (1981) revealed temporal relations between symbolic play and early language development. McCune’s (1995) analyses of a cross-sectional sample between 8 and 24 months of age indicated, in line with her earlier findings (McCune-Nicolich & Bruskin, 1982; Nicolich, 1977), that children who made specific representational transitions in play were more likely to show achievement of language milestones. For instance, a significant association was found between the onset of pretending and the beginning of vocabulary development. Children’s independent combinatorial pretence was also significantly related to the onset of word combinations.

Findings on the strength of language-play relation are not entirely consistent. For instance, Shore, O’Connell, and Bates (1984) did not find any significant relations between mean length of utterances (MLU) and symbolic play. Only after symbolic play was classified into levels of abstraction, did significant associations emerge between sequence length in substitution play and MLU. Different aspects of symbolic play explained variance in different language variables. These findings support the view presented by Tamis-LeMonda and Bornstein (1994) that language-play relations are specialised rather than global and only certain aspects of language relate to play. Their findings showed that at 13 months, language comprehension, rather than production, related to symbolic play, and at 20 months, only semantic diversity (e.g., possession, agency, and location) had associations with symbolic play. Semantic diversity may capture more of the children’s use of grammatical and cognitive relations at the latter age than does the size of productive vocabulary. Different linguistic-cognitive skills
may be tapped by the different measures of language. Use of a theoretical model, which allows for the analysis of specific linguistic-cognitive relations at specific periods in development (Gopnick & Meltzoff, 1987), is especially relevant to the study of toddlers' play and language.

Play competence is considered to reflect two different underlying mental capacities (exploratory competence and representational competence), that may have different origins and correlates (Bornstein, Vibbert, Tal, & O'Donnell, 1992; Tamis-LeMonda & Bornstein, 1990). The observed interrelations between language and play depend on the definition of symbolic play adopted by the researchers (Tamis-LeMonda & Bornstein, 1993, 1994). Symbolic play has greater cognitive demands than does functional play with real toy objects. Particularly, doll-directed play appears to be a strong correlate of language acquisition (Sigman & Sena, 1993). Ungerer and Sigman (1984) reported that children who engaged in a greater number of doll-directed and other-directed play acts at 13.5 months of age had higher language scores both concurrently and at 22 months. At the latter age the children's language abilities were related to symbolic play but not to the amount of relational play in which objects are simply combined by stacking or putting one within another. Exploratory competence appears to predict later cognitive abilities among high-risk children or children with disabilities but not to the same extent among normally developing children (Sigman & Sena, 1993).

Language-play relations also seem to depend on the aspect of language in focus and on the method of assessing language (Fein, 1981; Tamis-LeMonda & Bornstein, 1994). The Reynell Developmental Language Scales is a commonly used language test for which validity and reliability has been demonstrated for toddlers and which gives an index of both comprehension and production (Reynell & Gruver, 1990; Reynell & Huntley, 1987). Parental report given in a structured format, such as the MacArthur Communicative Development Inventory, has also been shown to provide a reliable and rapid overall evaluation of child language (Bates et al., 1994, 1995; Fenson et al., 1994). Studies on the relation between play and language have generally emphasised language production. Language comprehension might, however, have as much or more theoretical significance at the early ages (Fein, 1981). According to Sigman and Sena (1993) representational competence is highly associated with language comprehension. They found that children who showed more symbolic play acts, in both structured and unstructured situations, could comprehend more language.

In the domain of children's play very few standardised measures are available for assessing the level and complexity of children's symbolic skills. The Symbolic Play Test (Lowe & Costello, 1976) was developed as a diagnostic tool for assessing early concept formation and the ability to use symbols for expression of experiences and imagination in 12- to 36-month-
old children. The test involves observation of child's play in a structured situation with a standard set of materials and coding criteria. Lowe and Costello found gender differences to be minimal and inconsistent in the 12-18 months range, but they became more marked from 21 months onwards. Udwin and Yule (1982) found that the Symbolic Play Test score correlated significantly with ratings of imaginativeness in free play and discriminated between language-disordered children and normal speakers. Using the German version of the Symbolic Play Test and the Reynell Developmental Language Scales, Sarimski and Suss-Burghart (1991) found a highly significant relationship between language comprehension and symbolic play level in children with mental retardation when mental age was partialled out. Similarly, the Symbolic Play Test score has been found to be strongly related to Comprehension and Expressive Language Scales in autistic children (Whyte & Owens, 1989). More research on the test's validity in terms of correlations with concurrent language skills in normally speaking toddlers is clearly needed.

The present study examines children's language and play at the age of 18 months using both parent report and test data for assessment of language and the symbolic play test for evaluation of play competence. Of specific interest is how mastery of different aspects of language relates to children's symbolic play. Use of several measures enables also the consideration of the extent to which interrelations between language and play depend on the measures used for assessing children's representational skills.

METHOD

Subjects

A total of 110 18-month-old toddlers (46 girls, 64 boys) participated in the present study. The mean age of the toddlers was 18 months 1 week. The sample involved 65 first-borns, and 45 children with older siblings. The sample is a part of a longitudinal study on early language development and precursors of reading skills. The children and their families came from the city of Jyväskylä and its surrounding communities in the Province of Central Finland. None of the infants had mental, physical, or sensory handicaps. All parents spoke Finnish as their native language. Parental socioeconomic status was representative of the distribution in the Finnish population.

Procedures

Language Measures. The Reynell Developmental Language Scales (RDLS) were administered by a familiar experimenter in a laboratory setting (Reynell & Huntley, 1987). The mother was present at the child's testing without participating in the manipulation of the test material.
Parental report on their child's language skills was obtained using the MacArthur Communicative Development Inventory: Words and Sentences (Fenson et al., 1994). Adaptation of the CDI included screening of the items for linguistic and cultural relevance. The Finnish version of the Toddler CDI consists of two parts. Part I includes: (1) vocabulary checklist (592 items); and (2) how children use words (5 items). Part II includes grammar and sentences. Use of the suffixes is an essential feature of the richly inflected Finnish language, therefore, the Finnish version contains 16 items concerning case and verb inflections. The parent was asked to report what suffixes the child uses, and only those records were accepted on which the parent had given example/s. Parents were also asked to write out three of the longest utterances they had heard their child say recently. Mean length of longest utterances (MLLU), which is based on the average morpheme length, was calculated from these sample utterances. Parents received the Toddler CDI by mail before the 18-month laboratory visit and returned it on their visit. The experimenter then had a chance to answer questions and to clarify any problems that the parents might have had with the inventory.

Symbolic Play Measures. The Symbolic Play Test (SPT) was administered in a laboratory setting and videotaped for coding. The child was seated in a highchair at a table, and the mother and the experimenter were seated next to him or her. The mother followed the child's play without manipulating the toys herself or commenting on the play. The experimenter restricted her verbalisations to the minimum avoiding, in particular, any verbal instructions or clues as to the nature of the objects presented, but responded to the child's overtures to keep the situation natural and the child motivated.

Three sets of miniature toys were presented in a standard arrangement for the child to manipulate freely (Lowe & Costello, 1976). Set I: Doll (girl), spoon, cup, saucer, comb, brush; Set II: doll (girl), bed, blanket, pillow; and Set III: truck, trailer, man, four small wooden logs. In Set I, the toys were given in three stages: (1) the doll on its own; (2) cup, spoon, and saucer added; (3) comb and brush added. This was to elicit responses to the doll as such. The child could explore each set of toys spontaneously, until he/she had finished manipulating it or when the play became repetitive. The total observation time for the three sets lasted up to an average of 10 minutes.

Play activities were videotaped with standard video equipment (S-VHS) and coded directly from the videotapes. The SPT score was defined as the number of meaningful responses and connections that the child was able to make within and between objects presented to him/her. Every new behaviour was coded once. If the child, for instance, combed his/her hair three different times, the code was recorded only once. Categories used by Lowe and Costello (1976) were modified slightly by extracting item 4 from
Set II and item 5 from Set III because information on these play behaviours was obtained in connection with other items. To enable more detailed differentiation of symbolic play five new items were added (item 2 into Set I, items 1, 3, and 6 into Set II, and item 1 into Set III; see Table 2). Percentages of children displaying each play category are presented in Table 2.

In addition to the standard SPT score, analyses were carried out concerning symbolic play as separate from functional-relational toy manipulation. Using criteria presented in the literature (Belsky & Most, 1981; Tamis-LeMonda & Bornstein, 1989, 1994) a comprehensive variable, called the percentage of symbolic play, was calculated which contained: (1) self-directed pretence; (2) other-directed pretence; and (3) substitution pretence. It was obtained by dividing the number of the child's pretence actions by the total number of the child's play actions. Play acts which were excluded from symbolic play included discriminative handling of doll (e.g., hair, dress, shoes), relating spoon to cup or saucer, placing cup on saucer, pillow/blanket to bed, or log (logs) to truck without any other action. These were coded as functional-relational toy manipulation without pretence.

Coding of all play actions was based on the children's actions and nonverbal behaviours rather than on their language. Technical correlations between language and play were, therefore, obviated. Inter-observer reliability was assessed by having two persons independently code the same randomly selected cases (12% of the data). The agreement between the coders was 84% for the SPT categories, and 80% for percentage of symbolic play.

RESULTS

Language Skills

Children's vocabulary size reported by the parents on the CDI ranged from 0 to 302 words, with a mean of 50 words. Children whose vocabulary was around the mean typically produced some word combinations. Their speech was, however, telegraphic (i.e. two or three content words devoid of inflectional marking). Number of suffixes mastered at this age ranged from 0 to 12. No use of suffixes was reported for a third of the children, whereas one-third used three or more suffixes. Most common among the suffixes were indication of plural in nouns and partitive forms. The examples showed that some of the children's inflections were frequently occurring words deriving from unanalysed production. The most common verb inflections were imperative forms and negative verb forms.

Children's performance on the Reynell Developmental Language Scales corresponded highly with their language level obtained using the CDI parental report. The mean score of 14 on the Verbal Comprehension Scale
and 11 on the Expressive Language Scale (see Table 1) are equivalent to scores for 18-month-olds in the RDLS norms (Reynell & Huntley, 1987). No gender differences emerged in any of the language measures.

**Play Behaviour**

The data presented in Table 2 show that 18-month-olds were able to use appropriately all play objects. Half of the items reached at least 50% frequency. The toys in Set 1 were most versatile in provoking both functional-relational and symbolic play. The most typical actions within this set were “relates spoon to cup or saucer”, “feeds self with spoon”, or “drinks from cup”, “combs or brushes own hair” and “discriminative handling of doll”. Incidence of these actions varied between 68% and 96%. Two-thirds of the children related doll to bed and blanket/pillow to bed in Set II, and moved truck or trailer about and related log/logs to truck or trailer in Set III.

Children produced, on average, 16 different play activities ($M = 16.2$, SD = 4.6). Out of these acts more than half were functional-relational guided toy manipulation without pretence and less than half were symbolic play (Table 3). Self- and other-directed pretence constituted the majority of the children’s symbolic play. Substitutive play acts were very rare. Compared to Lowe’s (1975) findings, our 18-month-olds displayed more doll-directed play, in particular with Sets II and III. As in language measures no gender difference emerged in play. Child’s birth order, however, exerted an effect on symbolic play. First-borns displayed more symbolic play ($F(1,118) = 4.86, P < .05$), than did children having older siblings. Parental educational level did not differentiate children’s play and language skills.

**Language-Play Relations**

Spearman correlations showed that the total SPT score was significantly related only to the CDI vocabulary production ($r = .16, P < .05$) and verbal comprehension on the RDLS ($r = .40, P < .001$) (Table 4). Correlations to

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>(SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocabulary production</td>
<td>39.79</td>
<td>(55.68)</td>
<td>0-302</td>
</tr>
<tr>
<td>Use of suffixes</td>
<td>1.98</td>
<td>(2.21)</td>
<td>0-12</td>
</tr>
<tr>
<td>Mean length of three</td>
<td>1.38</td>
<td>(0.97)</td>
<td>0-6</td>
</tr>
<tr>
<td>longest utterances</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RDLS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal comprehension</td>
<td>14.00</td>
<td>(5.03)</td>
<td>4-27</td>
</tr>
<tr>
<td>Expressive language</td>
<td>10.65</td>
<td>(3.59)</td>
<td>3-22</td>
</tr>
</tbody>
</table>


**TABLE 2**

Toy Material of the Symbolic Play Test and Percentage of Toddlers Displaying the Observed Behaviour

<table>
<thead>
<tr>
<th>Toy Material</th>
<th>Observed Play Behaviour</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set I: doll, cup, spoon, saucer, comb, brush</td>
<td>1. Discriminative handling of doll (exploring doll's hair, dress, shoes, etc.)</td>
<td>73.2</td>
</tr>
<tr>
<td></td>
<td>2. Symbolic handling of doll (e.g. kissing, hugging, walking, etc.)</td>
<td>18.7</td>
</tr>
<tr>
<td></td>
<td>3. Relates spoon to cup or saucer</td>
<td>95.8</td>
</tr>
<tr>
<td></td>
<td>4. Places cup on saucer</td>
<td>48.9</td>
</tr>
<tr>
<td></td>
<td>5. Stirs in cup, &quot;picks up food&quot; from saucer</td>
<td>55.0</td>
</tr>
<tr>
<td></td>
<td>6. Feeds self (with spoon or &quot;drinks&quot; from cup)</td>
<td>66.5</td>
</tr>
<tr>
<td></td>
<td>7. Combs or brushes own hair</td>
<td>70.8</td>
</tr>
<tr>
<td></td>
<td>8. Feeds doll</td>
<td>34.8</td>
</tr>
<tr>
<td></td>
<td>9. Combs or brushes doll's hair</td>
<td>22.7</td>
</tr>
<tr>
<td></td>
<td>10. Feeds other persons</td>
<td>24.3</td>
</tr>
<tr>
<td></td>
<td>11. Combs or brushes other person's hair</td>
<td>16.4</td>
</tr>
<tr>
<td>Set II: doll, bed, blanket, pillow</td>
<td>1. Discriminative handling of doll</td>
<td>37.5</td>
</tr>
<tr>
<td></td>
<td>2. Relates doll to bed (lies or sits doll on bed)</td>
<td>80.1</td>
</tr>
<tr>
<td></td>
<td>3. Relates blanket/pillow to bed without doll</td>
<td>73.2</td>
</tr>
<tr>
<td></td>
<td>4. Relates blanket or pillow to doll (covers doll with blanket, wraps doll into blanket, lies doll on blanket or pillow)</td>
<td>27.9</td>
</tr>
<tr>
<td></td>
<td>5. Puts doll to bed, involving doll, bed, and blanket (and/or pillow)</td>
<td>45.7</td>
</tr>
<tr>
<td></td>
<td>6. Substitutive use of blanket/pillow (e.g. wipes face, mouth)</td>
<td>8.4</td>
</tr>
<tr>
<td>Set III: truck, trailer, mun. logs</td>
<td>1. Discriminative handling of toys (e.g. spins wheels)</td>
<td>19.4</td>
</tr>
<tr>
<td></td>
<td>2. Moves truck or trailer about</td>
<td>86.7</td>
</tr>
<tr>
<td></td>
<td>3. Relates log (logs) to truck or trailer</td>
<td>75.4</td>
</tr>
<tr>
<td></td>
<td>4. Places man in truck or trailer</td>
<td>40.3</td>
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<tr>
<td></td>
<td>5. Places man in driver's seat</td>
<td>47.8</td>
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<tr>
<td></td>
<td>6. Joins truck and trailer (correct position; child needs not succeed, but intention must be clear)</td>
<td>30.4</td>
</tr>
</tbody>
</table>

**TABLE 3**

Percentage of Nonsymbolic and Symbolic Play

<table>
<thead>
<tr>
<th>Play Variable</th>
<th>Mean (%)</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional-relational guided toy manipulation</td>
<td>51.22</td>
<td>(11.36)</td>
</tr>
<tr>
<td>Symbolic play</td>
<td>48.78</td>
<td>(11.37)</td>
</tr>
<tr>
<td>Pretend self</td>
<td>16.08</td>
<td>(9.50)</td>
</tr>
<tr>
<td>Pretend other</td>
<td>34.69</td>
<td>(12.54)</td>
</tr>
<tr>
<td>Substitution pretence</td>
<td>1.01</td>
<td>(2.82)</td>
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</tbody>
</table>
other language measures were positive but they did not reach significance. This result was contrary to the expectations elicited by earlier studies involving developmentally delayed children. On the other hand, statistically significant positive correlations were found between percentage of symbolic play and all language variables. Symbolic play correlated with Verbal Comprehension \((P < .001)\) and Expressive Language on the RDSLs \((P < .01)\), the CDI vocabulary production \((P < .01)\), use of suffixes \((P < .05)\), and MLLU \((P < .05)\).

The results indicated that 18-month-old children free symbolic actions from their own body and start to direct them toward inanimate (doll) and animate (mother, experimenter) objects. Other-directed pretence correlated significantly with CDI vocabulary production \((r = .16, P < .05)\), MLLU \((r = .18, P < .05)\), and Verbal Comprehension \((r = .48, P < .001)\) on the RDSLs. Correlation between self-directed pretence and the RDSLs Verbal Comprehension on the other hand was negative \((r = -.16, P < .05)\). No significant correlations emerged between substitutive acts and language variables.

Variation of Symbolic Play within the Language-based Subgroups

There was a large variation in children’s production skills (see Table 1). To analyse further the language-play relationship, two subgroups were formed based on the parent-reported productive vocabulary. The subgroup named as late talkers consisted of 22 children whose productive vocabulary on the CDI was less than 10 words \((M = 5)\). No word combinations or suffixes had been reported for these children. Twenty-one children who produced over

<table>
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<tr>
<th>Measures</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td><strong>CDI</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>1. Vocabulary production</td>
<td>.74***</td>
<td>.82***</td>
<td>.60***</td>
<td>.82***</td>
<td>.16*</td>
<td>.25**</td>
</tr>
<tr>
<td>2. Use of suffixes</td>
<td>.77***</td>
<td>.28***</td>
<td>.68***</td>
<td>.01</td>
<td>.19*</td>
<td></td>
</tr>
<tr>
<td>3. Mean length of 3 longest utterances</td>
<td>.56***</td>
<td>.74***</td>
<td>.14</td>
<td>.20*</td>
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<tr>
<td><strong>RDSLs</strong></td>
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<tr>
<td>4. Verbal comprehension</td>
<td>.37***</td>
<td>.40**</td>
<td>.47***</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Expressive language</td>
<td>.12</td>
<td>.22**</td>
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<td><strong>SPT</strong></td>
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<tr>
<td>6. Total score</td>
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<tr>
<td>7. Percentage of symbolic play</td>
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<td>.41***</td>
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</table>

* \(P < .05\); ** \(P < .01\); *** \(P < .001\).
85 words (M = 139), combined 3–4 words into sentences, and mastered at least as many suffixes, comprised the subgroup of early talkers. Group comparisons on the play variables revealed no differences in the total SPT score. The late talkers, however, had significantly more functional-relational toy manipulation than the early talkers \(F(1,41) = 8.64, P < .01\). Early talkers, on the other hand, had a higher percentage of symbolic play \(F(1,41) = 7.68, P < .01\), and more other-directed (doll and adult) pretence \(F(1,41) = 2.85, P < .10\). No group differences were found in self-directed and substitution pretence.

Correlational analyses conducted separately for early and late talkers showed significant correlations in both groups between play variables and the RDLS Verbal Comprehension (Table 5). Interestingly, language comprehension correlated significantly \((P < .01)\) with the SPT score among late talkers but not among early talkers. In the subgroup of early talkers, Verbal Comprehension correlated positively with percentage of symbolic play \((P < .05)\), and other-directed pretence \((P < .01)\), but negatively with self-directed pretence \((P < .05)\). In the subgroup of late talkers, only other-directed pretence and Verbal Comprehension were significantly correlated \((P < .05)\).

**DISCUSSION**

Several aspects of early language (productive vocabulary size, use of suffixes, utterance length, verbal comprehension, and expressive language) were tapped and different methods of data collection (parental report and structured tests) employed to explore interrelations within language measures and their associations to play. Symbolic play was observed in a structured play situation in which coding of play activities was based on children's nonverbal behaviour. The CDI parental report and the Reynell

**TABLE 5
Language-Play Correlations in Language-based Subgroups**

<table>
<thead>
<tr>
<th>Play Variables</th>
<th>RDLS</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Verbal Comprehension</td>
<td>Expressive Language</td>
<td>Early Talkers</td>
<td>Late Talkers</td>
<td>Early Talkers</td>
<td>Late Talkers</td>
</tr>
<tr>
<td><strong>SPT</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total score</td>
<td>.31</td>
<td>.50**</td>
<td>-.03</td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of symbolic play</td>
<td>.36**</td>
<td>.26</td>
<td>.02</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Pretend self</td>
<td>-.46**</td>
<td>-.23</td>
<td>-.13</td>
<td>.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Pretend other</td>
<td>-.59**</td>
<td>.36**</td>
<td>.10</td>
<td>-.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Substitution pretence</td>
<td>.27</td>
<td>.24</td>
<td>.23</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P < .05, **P < .01.
Developmental Language Scales were used to assess language skills. Our findings, together with those reported earlier (Bates et al., 1994; Fenson et al., 1994), indicate that the CDI parental report provides a valid evaluation of child language correlating significantly with more structured measures of language. Despite the inevitable personal variation in the parents' reports, the CDI appears to discriminate reliably children's language skills. Parents in the present sample are committed to an intensive longitudinal study, and, therefore, perhaps likely to pay close attention to the objectivity of their reports which can contribute to the finding of good correspondence between the independent language measures.

Our findings showed significant associations between 18-month-olds' language and their symbolic play. Out of the play categories other-directed pretence (doll adult) correlated most strongly with language comprehension and production. Therefore, support was found for Sigman and Sena's proposition (1993) that doll-directed play is a specific correlate of language skills. Relations between language and play were stronger when percentage of symbolic play rather than the total symbolic play test (SPT) score was used as the measure of play competence. The findings give support to the claim that language-play relations that emerge in empirical studies depend at least partly on how play is defined and what methods are used (Shore et al., 1984; Tamis-LeMonda & Bornstein, 1990, 1993). Play competence appears to encompass two different underlying mental capacities—exploratory competence and representational competence—which have different origins and correlates. The total SPT score containing both of these aspects did not strongly discriminate play behaviour in the total sample. The SPT score, however, gained in significance when analyses were conducted in subgroups which were homogenous according to expressive language reported by parents. Significant association was found between the SPT score and language comprehension among children with low productive vocabulary. Similar associations between the SPT and language skills have earlier been found in mentally retarded children (Sarimski & Suss-Burghart, 1991), and in autistic children (Whyte & Owens, 1989). The subgroup of early talkers, on the other hand, displayed more symbolic play, which was attributed mainly to other-directed pretence. In fact, a significant negative association occurred between self-directed pretence and language comprehension among early talkers. As an aspect of symbolic play that emerges early in development, self-directed pretence may not have as strong discriminative validity in this age as the other-directed pretence. The low proportion of substitutions, which was evident in both groups, may be due to the fact that the play materials were not ideally suited for this type of pretence.

Tamis-LeMonda and Bornstein (1994) have suggested that semantic diversity in expressing language-meaning categories would be a stronger
correlate of symbolic play at 20 months of age than vocabulary size or utterance length. We found that with 18-month-old children the percentage of symbolic play correlated significantly with many aspects of language (i.e. productive vocabulary size, utterance length, and use of suffixes). In line with findings by Sigman and Sena (1993), play competence correlated higher with language comprehension than with language production. In the present study, this held true for both the SPT score and the percentage of symbolic play involving pretence play only. This pattern of results suggests that comprehension is a more sensitive measure of language competence at 18 months of age.

Toddlers in our sample exhibited symbolic play twice the amount that Tamis-LeMonda and Bornstein (1994) reported for 20-month-old children. Various factors may contribute to this difference. Extent of symbolic play is highly sensitive, both to the type of play material used and to the availability of the mother (McCune, 1995). Although play material in both types of procedures consists of toys familiar to all children, the number of toys is smaller in the Symbolic Play Test than in the free play situation employed by Tamis-LeMonda and Bornstein. The restricted selection of toys may, however, encourage other-directed play more as the push for exploration is smaller than in free play with a large set of new toys. In the SPT procedure, the successive sets of toys are given in a way which maximally focuses the child on manipulating the toys available and makes off-task behaviour less likely. Consistent evidence tells us that toddlers prefer to play in the presence of their mothers (Slade, 1987). In our study, the mother was present providing a safe atmosphere for the child without participating in the play. When mother actively engages in a play situation, she generally takes room for her own play by organising toys, and structuring and monitoring the child’s activities (O’Reilly & Bornstein, 1993). The strength of the free play situation is ecological validity but it brings with it difficulties in separating the contribution of each participant.

Overall, our findings indicated that the Symbolic Play Test functions well at this age level. The structured nature of the test makes it an appealing tool for screening purposes in comparison to the time-consuming procedures of abstracting data from unstructured free play. In line with Lowe and Costello (1976), no gender differences were found in play behaviour. Nor were there differences in children’s play measures as a function of maternal educational level. However, perhaps due to more opportunities for collaboration with their parents, first-born children exhibited significantly more symbolic play than did children having older siblings. A promising direction for further development of the Symbolic Play Test is the analysis of nonsymbolic and symbolic play as separate domains. This corresponds with the approach applied in analyses of levels of play in unstructured free play situations (e.g. Tamis-LeMonda & Bornstein, 1989, 1994). Another issue needing further
clarification is whether the test's scanty material, especially with respect to
substitutive play, is suitable for research with older children.

Further research on the stability of play behaviour and the validity of early
play measures in prediction of later cognitive development is needed
(O'Reilly & Bornstein, 1993; Sigman & Sena, 1993). These issues are of
particular interest to us as we follow our sample up to school-age and hope to
identify factors that might be related to the development of representational
skills, and skills needed in fluent reading. Accumulation of predictive
information is especially relevant for the use of play observation techniques
in diagnostic purposes. The understanding of normal development of
symbolic play and its relation to language forms the basis for the assessment
of symbolic competence in developmentally delayed children, particularly
those having language problems (Lyttinen, 1991).

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