Child: care, health and development, 1986, **12**, 121–134.

A developmental exploration of language used to accompany symbolic play in young, normal children (2–4 years old)

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Accepted for publication 12 September 1985

Summary Observation of play can provide crucial information about a child's developmental level of language. To make this information available categorization and measurement are necessary. By defining, from a cognitive and pragmatic point of view, separate but parallel measures of play and language it was possible to define four different levels of symbolic functioning: (i) representational play; (ii) conceptual play; (iii) programmatic play; and (iv) script play. Careful longitudinal descriptions of language used to accompany symbolic play of ten 2–4-year-old children are presented. Interesting developmental trends in play and cognitive and pragmatic organization of language were found. Gradually language production was considered as the primary mode for symbolic expression between the ages of 2;6 (2 years; 6 months) and 3 years. Language production increased dramatically between the ages of 3 and 3;6, and became better differentiated from the play context. The scientific study of child language using an analytic tool, such as a play procedure, to describe and analyse spontaneous production of spoken language, with a cognitive and pragmatic framework contributes not only a more accurate understanding of normal play and language development, but may also have an efficient clinical value. Suggestions for and implications of exploring components of language used in a standardized play situation are discussed in reference to developmentally disabled children.

Since the acquisition of language is one of the most critical achievements of human development it is very important to have a

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procedure, such as play, to explore a child's development of language. Although the relationship between language and play has become an established goal in research, many investigators have concentrated their efforts on early language development, giving general support to Piaget's (1945) formulation that 'play and language are both aspects of the "semiotic" ability appearing at the end of the second year'.

It has been suggested that trends in the development of play have their parallels in language. (i) Two-word utterances emerge at the same time as doll centered play (Lowe 1975; Whittaker 1980; Terrell *et al.* 1984). (ii) Level 4 (combinatorial symbolic play) and level 5 (planned symbolic play) of symbolic play behaviour are associated with the transition from single-word to multiword utterances which is paralleled in language (McCune-Nicolich 1977; 1978; 1981). (iii) Early language learners also show a greater amount of appropriate play, representational play and gestures and imitation (Rosenblatt 1977). (iv) Symbolic play is a strong correlate of early language development according to the mean length of utterance (M.L.U.) stages (Casby & Ruder 1983). (v) There is a close relationship between production of animate-inanimate components of language and play (Corrigan 1982).

Yet, in spite of the relevance of knowing the extent to which young children engage in play in the course of their early language development, few studies have examined the developmental pattern of play and language later than the age of 2 years. Dillon-Goodson & Marks-Greenfield (1975) investigated the role of three structural principles — hierarchical complexity, interruption and role change — in the development of children's constructive play. They found the three principles to be formally parallel to dimensions of language structure in children of ages 2–6. Udwin & Yule (1983) demonstrated significant correlations between imaginative play and expressive and comprehensive language abilities in a clinical group, as compared to a group of younger normal speakers, aged 3–5 years. Nelson & Seidman (1984) reported two studies of peer play with scripts represented by pre-school dyads in a day-care setting. Their analyses were based on talk accompanying play, on the grounds that this reflects the thematic episodes of play itself.

To what extent do 2–4-year-old children use language to accompany symbolic play? A 2-year-old child who is given a set of toys first explores each toy separately and can give a name to it. Then he tries out various motor schemes such as banging or hiding the toys together, or lining them up and saying 'Voilà', 'ça y est' or 'c'est dur!'. The play

of children at age 2 is dominated by the physical properties and functions of the materials being used, whereas children of between 3 and 4 years old adapt materials to generate language. For instance, in putting a doll to bed a 3-year-old boy presents a real programme by saying, 'le bonhomme i va au dodo' ('baby is going to bed') while making the doll climb the staircase, walk into the bedroom and go to bed before saying 'Sois gentil! Dors bien. Ne te découvre pas!' ('Be good, sleep well. Don't take your blanket off'). Most observations of 2–4-year-old children show that play activity is based on the child's ability to think and express himself verbally and non-verbally.

The main purpose of this research concerning children's play was to devise a means of analysing components of language in order to (i) trace action-based and linguistically-based play development in normal children over a 2-year period, beginning at the age of 2 years, and (ii) describe changes in the way language is used during play throughout this period, in order to gain an insight into the developmental process with regards to a clinical population.

METHODS

Subjects

Twenty subjects were contacted and scheduled for The Symbolic Play Test (Lowe & Costello 1976), and 10 subjects (five boys and five girls) were selected as subjects for the longitudinal observations described in this study. Each subject was 2 years old (plus or minus 2 weeks) at the onset of the study. The 10 children selected met the following criteria: (i) normal auditory acuity; (ii) homogeneous non-verbal cognitive functioning, as demonstrated by the scores on the symbolic play test (mean scores: $\bar{x}$ = 25·8, s.d. 2·3); (iii) two-word utterances in spontaneous speech. Parents of the 10 children selected were monolingual, college educated and of middle income status according to Chevrie-Muller's criteria (Chevrie-Muller *et al.* 1981).

Procedure

Each child was visited individually in his/her home by the same observer at a time of the morning when only the mother was present and when the mother reported the child to be most alert. At the beginning of the session the observer asked the mother for a suitable room in the house where no toys other than those for the observation

would be visible. Child, mother and observer sat on the floor or around a very low table and the session was recorded with portable video equipment (camera and videotape continuously controlled by a timer) for 20 min. A microphone hung directly overhead to record speech.

At each session, with 3 month intervals, the observer gave the child a bag containing 21 miniature toys and a small doll's house with four small family figures, one dog, eleven miniature replicas of household furniture (one double bed, two single beds, four chairs, two armchairs, one round table and one low table) and five 'highly structured' toys according to Pulaski's (1973) criteria (one rocking horse, one push chair, two cars and one staircase). The observer started the session by telling the child that 'You can play with these toys in the doll's house anyway you like. When you are finished you should tell me.' The mother was instructed to be supportive and responsive. Both spontaneous and elicited play and language were videotaped and transcribed by the observer on to special sheets with five columns which indicated the development and organization of language corresponding to each utterance, in serial form. To illustrate how the transcriptions were coded the Appendix presents nine brief excerpts (in French) corresponding to data videotaped at each of the nine age levels for the same child, in the same context of play, varying from 1 to 2 min. The coding system for the four levels of symbolic play is given in Table 1. Table 2 gives the coding system for cognitive organization of language and Table 3 for pragmatic organization of language.

RESULTS

Nine play sessions were analysed for each child to obtain developmental trends in symbolic play, cognitive and pragmatic organization of language. Results, as shown in Tables 4, 5 and 6, depict the number of children for each category who consistently demonstrated the variations of trends (onset and functioning of a behaviour).

Development trends of play (Table 4)
Representational play had developed in all children by the age of 2;3 years. This development was completed before conceptual play which was first shown consistently by four children at 2;6 years. However, all the children did not show this until 3;6 years. There is an overlap in the

TABLE 1. Levels of symbolic play. The play coding system was developed by the author in order to demonstrate the relations and the dynamics between perceptual and conceptual organization of verbal and non-verbal behaviour

Level	Organization	Definition	Example (car)
1	Representational	Representation of something by something else by acting out	*action*: child drives car and makes 'vroum' sound
2	Conceptual	Classification of actions with language as anticipating	Child says 'Daddy is taking the car to the garage' and manipulates car
3	Programmatic	Organization of sequences of actions into scenes with or without language	Sequences of actions; child drives car to garage and says 'the car is in the garage'
4	Scripts	Organization of play with themes	Child describes a script in a garage

TABLE 2. Cognitive organization of language. The cognitive based coding system referred to spontaneous verbal behaviour including particularly the notions of space, time and causality in a predetermined check-list of specific words in an utterance

Type	Categorization	Definition
1	Space	A reference to dimensions such as verticality, position, laterality, distance, internality, expressed by prepositions (at the top, at the bottom, below, behind, on, under, in the centre, near, far, inside, outside)
2	Time	A reference to objects, actions and events among the following tenses (past, future, conditional) and the following adverbs (now, already, soon, first, after)
3	Causality	A reference to event changing from an initial state to a final state and expressed by causal notions children encode (e.g. because) and by causal questions (e.g. why?)

TABLE 3. Pragmatic organization of language. The pragmatic based coding system referred to child's types of speech acts defined by Prutting *et al* (1978) for requests and responses. Two additional categories of naming and initiating dialogues within the play were included. Only speech acts coded as appropriate, non-imitative and unprompted were counted for the purposes of this study

	Categorization	Definitions	Example
1	Naming	Common and proper nouns that label objects, people, events, locations . . .	holding the car: 'what is this?'
2	Requesting action	Words and sentences that solicit or initiate an action or encourage the continuation of actions	holding a toy: 'what is it going to do now?'
3	Requesting information	Words and sentences that solicit information about objects, actions, persons and locations	'Where is the car?'
4	Responses	Words and sentences in relation to verbal intervention from an adult	Adult: What are you doing now? Child: The family is going on holiday by car
5	Initiating dialogues within the play	Words and sentences that regulate interpersonal contact between family figures	Child: Who is going to drive? Child: Him, the male doll.

TABLE 4. Developmental trends of play in 2–4-year-old children (n = 10)

Play variables	Age (years and months) 2	2;3	2;6	2;9	3	3;3	3;6	3;9	4
Representational	8	10							
Conceptual			4	6	6	8	10		
Programmatic				2	4	7	7	8	10
Script								1	3

development of level 2 and 3 (Table 1) between 2;9 and 3;6 years. At the end of the study three children had shown consistent evidence of script play.

Cognitive trends of language (Table 5)
All space categories were used, apart from 'in the centre' which was found in six children aged 3;9 and eight children aged 4. Concerning the time categories, the conditional had been acquired by only two

TABLE 5. Cognitive trends in 2–4-year-old children (n = 10)

		Age (years and months)								
		2	2;3	2;6	2;9	3	3;3	3;6	3;9	4
Space										
1	Top, (at the)	3	6	8	8	10				
2	Bottom, (at the)	3	8	10						
3	Below					2	6	8	10	
4	Behind					2	6	8	10	
5	On					8	10			
6	Under					2	6	8	10	
7	In the centre								6	8
8	Near						8	10		
9	Far						8	10		
10	Inside	2	8	10						
11	Outside			8	10					
Time										
1	Past	2	6	8	10					
2	Future				2	6	8	8	10	
3	Conditional									2
Adverb										
1	Now				2	4	6	8	10	
2	Already									6
3	Soon									6
4	First							2	6	8
5	After							2	6	8
Causality										
1	Because		1	2	8	10				
2	Why?		2	4	8	10				

children aged 4. Past tense had been acquired by all children aged 2;9 and future tense by age 3;9.

Four of the five adverbs, 'soon', 'already', 'first' and 'after', were not acquired by all the children. In contrast, 'because' and 'why?' had been acquired at an early age, between 2;3 and 3 years.

Pragmatic trends of language (Table 6)

Other than the one requesting information and initiating dialogues, all the categories had been demonstrated at the beginning of the follow-up study: naming from age 2 to 2;6, requesting actions from age 2 to 2;9 and responses from age 2 to 2;6.

TABLE 6. Pragmatic trends of language in 2–4-year-old children (n = 10)

Pragmatic variables	Age (years and months) 2	2;3	2;6	2;9	3	3;3	3;6	3;9	4
Naming	6	8	10						
Requesting actions	6	6	8	10					
Requesting informations			3	4	6	10			
Responses	2	8	10						
Initiating dialogues within the play			4	6	8	10			

DISCUSSION

In the study discussed here there appears to be an orderly progression in symbolic play which provides the coding scheme for language accompanying play. Symbolic play may prove to be a useful tool for assessment of children with language disorders. By examining four levels of language accompanying symbolic play in 2–4-year-old normal children, an attempt has been made to provide a comprehensive method which explores the emergence, functioning and development of language production within a cognitive and pragmatic framework. Most investigators of symbolic play and language development use different sets of toys to explore language so that comparability is limited and generalization of findings is difficult across studies. The resolution of this issue does not concern us here. We have proposed a set of 21 toys in a standardized manner which can be used to capture the range of verbal and non-verbal organization of behaviour in children with language delay. For example, if two children, whose language is below the two-word utterance level, differ in such a way that one exhibits age-appropriate 'programmatic play' and the other does not, different aetiologies for language delay are suggested. Play can thus be considered a valuable procedure to help describe language. First, is the child manipulating toys and does he make some comments on his/her actions or is the child first reporting sequences of actions, scripts, and demonstrating conceptual abilities underlying language and action? It has been observed that the child shifts from using predominantly what has been termed 'performative' utterances

to using 'reportative' utterances (Gruber 1967). Our data suggest that the overt actions associated with performative utterances diminish in frequency at age 2;6 whereas reportative utterances increase from age 2;6 to 3;6. There is a change in programming the conjunction of action and language development for output purposes in play. In a first step, *action precedes language* while later *language precedes action or sequences of action*. These findings can therefore be used to precisely delineate cognitive processes underlying language.

The description of the way young children produce language and express cognitive and communicative organization of their behaviour is far from complete in the literature (Dale *et al.* 1981). This is especially true of the pragmatic component of language where no longitudinal description has been systematically carried out using play in young children. In order to gain a better understanding of the cognitive and pragmatic components of language, follow-up studies are necessary. Not only will this longitudinal data enable us to trace developmental trends but it will add greatly to the body of knowledge about the real facts of language acquisition and development. This knowledge, in turn, will provide further information about the behavioural and neuropsychological functioning of an organism which acquires language. Only longitudinal descriptions can provide the basis for describing differences among children in the relationship between their play and language development. It is surprising that there have been so few studies of play concerning speech and language production in children with language disorders, since the relationships between language and action, and language and symbolic play are of critical significance. Rutter (1972), in a brief review of research on language and play, gave a central place to thought, which he called 'inner language', in explaining the relationship between language handicap and a child's play. Mentally retarded children and children with a developmental language disorder do not show any marked differences from normal children in their overall play patterns, but children with impaired language do not develop symbolic play consistently (Hulme & Lunzer 1966; Lovell *et al.* 1968). Zelazo & Kearsley (1980) also suggested that play may provide a means of assessing cognitive competence in developmentally delayed children, particularly those with language disabilities. Sherman *et al.* (1983) demonstrated that linguistic capacity and peer play performance are the most important discriminators of developmental disorders. Such an empirical approach to classifying developmental disorders induces

predictive measures which need to be further validated by the type of longitudinal data used in this study.

In considering future applications of play with language acquisition and development in clinical populations, what appears to be the most relevant in this study is the fact that measures of play with cognitive and pragmatic organization of language demonstrate the capacity to differentiate children with regard to their individual development.

Because the categories proposed in this study and some potentially useful insights into the levels of play with language are currently used in clinical populations (Le Normand & Chevrie-Muller, unpublished), future work should enlarge and further refine the repertoire of behaviours already identified. This study has performed the important primary empirical step of articulating a theoretical developmental psycholinguistic and play research pattern on which subsequent clinical investigations may be used.

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APPENDIX

Pragmatic coding system: categories of speech acts

N = naming
A = requesting action
I = requesting information
R = responses to questions from adults
In = initiating dialogues with the play figurines

Excerpt 1: representational play (Level 1)

Age 2	N	A	I	R	In
Child hides horse in the garage saying:					
(1) 'Coucou! coucou cheval!'	×	×			
Child hides table in the garage saying:					
(2) 'attends!'					
(3) 'Oh! coucou cheval!'	×				
Child hides chair in the garage saying:					
(4) 'coucou! à cheval encore!'	×				
Child hides dog-toy in the garage saying:					
(5) 'coucou nounours!'	×				
Child hides another chair in the garage saying:					
(6) 'coucou cheval!'	×				

Time = 2'

Excerpt 2: representational play (Level 1)

Age 2;3	N	A	I	R	In
Child intentionally hides car in the garage saying:					
(1) 'Oh! *Où* il est petite voiture?"			×		
Mother:					
(1) 'Où tu l'as mis?'					
Child:					
(2) 'C'est caché *dans* le garage, on la voit plus'				×	
Child opens the garage and says:					
(3) 'C'est là! voilà!'					
Child holds the blue car and says:					
(4) '*Maintenant*, le bleu!'					
Three cognitive space-time utterances					
Time = 01·50'					

Excerpt 3: conceptual play (Level 2)

Age 2;6	N	A	I	R	In
Child says:					
(1) 'i va aller *dans* le garage toute la famille'					
play: child intentionally makes one family figure walk					
(2) 'C'est quoi *derrière*?'			×		
child goes behind the house					
Mother:					
(1) 'Tu vois, c'est la porte du garage qui ferme'					
Child:					
(3) 'C'est quoi çà?' holding the car			×		
Mother:					
(2) 'On pourrait dire peut-être que c'est la voiture de la dame.'					
Child:					
(4) 'Ah oui!'				×	
2 cognitive time utterances					
Time = 1·80'					

Excerpt 4: conceptual play (Level 2)

Age 2;9	N	A	I	R	In
Child:					
(1) 'Le garage, c'est pour les voitures' and points to the garage					
(2) 'Le monsieur, i va conduire' and acts placing the male doll in the car					
(3) 'Qui va conduire?'					×
(4) 'Oh! c'est la dame!' and acts placing the female doll in the car					
(5)'*Maintenant*, i sort de la voiture, i la laisse *dans* le garage, voilà!'					
2 cognitive space-time utterances					
Time = 1'					

Excerpt 5: programmatic play (Level 3)

Age 3	N	A	I	R	In
Child initiates:					
(1) 'le chien i va rentrer *dedans*' and acts					
(2) 'il a pas peur'					

	N	A	I	R	In
(3) 'i vont entrer tous les deux *dans* le garage' and acts					
(4) 'alors i va entrer *dans* le garage'					
(5) 'i va aller *derrière* la voiture' and acts					
(6) 'i zont peur alors i zont peur'					

4 cognitive space utterances
Time = 1'

Excerpt 6: programmatic play (Level 3)

Age 3;3	N	A	I	R	In
Child:					
(1) 'y 'a quelqu'un dans le garage?'					×
(2) 'oh oui! y'a quelqu'un!'					
Initiates					
(3) 'lui, i peut pas rentrer!'					
Mother:					
(1) 'Mais pourquoi?'					
Child:					
(4) 'i peut pas rentrer dans le garage, alors i peut pas rentrer'				×	
Mother:					
(2) 'Mais pourquoi, ils veulent tous rentrer?'					
Child:					
(5) 'i veut rentrer les bonhommes *parce qui* pleut dehors.'				×	

1 cognitive causality utterance
Time = 1·20'

Excerpt 7: programmatic play (Level 3)

Age 3;6	N	A	I	R	In
Child organizes a scene					
(1) 'on va en voiture' addressed to family figures					×
(2) 'Vous, vous prendez votre poussette' addressed to family figures					
(3) 'Ah! i faut chercher de l'essence!' addressed to family figures					×
(4) 'Le garagiste, c'est fermé!' addressed to family figures					×
(5) 'On va mettre de l'essence, voilà, ça y est!'					×

Time = 1'

Excerpt 8: programmatic play (Level 3)

Age 3;9	N	A	I	R	In
Child organizes a scene					
(1) 'Le monsieur, i va au travail alors i va chercher sa voiture au garage'					
Mother:					
(1) 'Qu'est-ce qui fait comme travail?'					
Child:					
(2) 'i vend des pâtes'				×	

Time = 1'

Excerpt 9: script play (Level 4)

Age 4	N	A	I	R	In
Child organizes a script					
(1) 'C'est lui le bébé, il est très malade alors il faut que j'appelle l'ambulance pour le conduire à l'hôpital. Allo l'ambulance! Bébé est très malade. Il faut venir le chercher d'accord . . . et l'ambulance vient' and acts					×

Time = 1'