A STUDY ON PARENT—CHILD RELATIONSHIPS AND CHILD DEVELOPMENT FROM AN ECO-PSYCHOLOGICAL STANDPOINT : A PROGRESS REPORT

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The introductory section presents the outline of this project which was undertaken in order to obtain a comprehensive understanding of development in preschool years from an ecologically valid standpoint.
Sixty children between 3 : 7 and 4 : 6 years of age (at the beginning of this project) and their parents were chosen as subjects. Half of them were from urban middle class families and the remaining half were from rural households.
The data collection procedures included parent interviews, observation of father-child and of mother-child interactions, naturalistic observations of the child's behavior and various child performance measures.
In the second section an analysis and interpretation of mother-child interaction patterns in a semi-structured situation is presented. In this section it is argued that a lag-2 sequential analysis of the mother-child interaction behavior is necessary.
The results obtained through the sequential analysis suggested a reciprocal interaction process ; that is, the child's responses to the maternal behavior are of critical importance to the pattern of mother-child interaction.
In the final section a comparison of rural and urban children's activities at home and in their neighborhood is presented.
In this comparison differences were found between rural and urban children in their daily interaction patterns. A low level of symbolic play was found here for the rural children. This may be due to the nature of their interaction patterns.

Key words: ecological study, rural-urban comparisons, mother-child interactions, symbolic play.

This research project was begun as a continuation of our previous study entitled "An eco-psychological study of parent-child relationships and child development" which was conducted over two years from 1976 to 1978 with 25 children and their parents.

The focus of the previous study was the collection of data on parent-child relation-

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ships and child development in three settings : in the home environment, in a controlled lab situation, and during an interview with the parents. We, however, did not feel that we had in this study solved satisfactorily the problem of ecological validity, for which earlier socialization research (utilizing such methods as retrospective maternal interviews and lab experiments) has been severely criticized. We felt that our data base was still weak for making generalizations to the child's socialization in the natural milieu. Thus, the present study was undertaken in order to obtain a more comprehensive understanding of development in the preschool years (4—5 years) from an ecologically valid standpoint.

In their daily life, preschool children live in many different contexts. Their social world consists of many worlds—e. g. family, peer group, and the preschool. Both the peer group and the preschool become significant socialization contexts in the preschool period. These milieus are now regarded as contributing much more extensively to the development of various competencies than was appreciated before.

Keeping this in mind we intended to observe the child's behavior in interactions with parents, siblings, peers and teachers, within the family, the school and the neighborhood. Through this endeavor we hoped to find variables significant for the study of preschoolers, and which would suggest educational conditions (including parent-child relationships) for promoting development.

Subjects

Sixty children between 3 : 7 and 4 : 6 years of age (30 males and 30 females) and their fathers and mothers were chosen as subjects in this project. Half of the subjects were from urban families living around the campus of Hokkaido University and the remaining half were from farm households living in a typical agricultural area in Hokkaido where the population density is the lowest in the nation and their homes are quite a distance from any neighbors.

Half of the subjects were chosen in October 1979 and half were chosen in October 1980. They were followed for approximately one year and the data were collected according to the procedures stated below over the course of the one year. The data collection was completed in November 1981.

Data Collection Procedure

(a) Parent interviews—Fathers and mothers were interviewed separately about their expectations for the child's development, their perceptions of the child's behavior, their teaching styles, and their daily life. In addition to this, mother interviews were conducted twice on separate occasion to gather information regarding the child's developmental history, the mother's life history, the mother's perception of her own personality, her child's personality and her own mother's personality, as well as more specific information on the child's daily routine.

(b) Observations of father-child and of mother-child interactions—Father-child and mother-child interactions were unobtrusively videotaped for 10 min. in a semi-structured situation. The situation was only minimally structured so that a variety of interactions could take place. Toys were made available to the parent and child : The toy was a 7×7 pegboard with 63 pegs of 4 different colors with which various patterns could be made.

Varbatim transcripts were made from the videotapes, and each session was analyzed according to two different methods, a frequency analysis and a sequential analysis.

The details of the method of analysis will be explained later in this report.

Besides these, global ratings of paternal, maternal and child behavior were made based on a seven-point scale.

(c) Naturalistic observations of the child's behavior—The child's activity in his/her home and neighborhood was observed and recorded narratively by two observers twice within a few days, once in the morning and once in the afternoon. The aim of this observation was to gather information concerning the types and duration of play, the types and number of settings which the child entered, and the persons with whom the child interacted.

The patterns of peer interactions were recorded narratively in a free play situation and in a structured group activity situation (each session for 30 min.). The observations of peer interactions were conducted at the day nursery that the child was attending so that the child-teacher interactions could also be recorded at the same time.

(d) Child performance measures—The following measures of child performance were obtained : i) School Readiness Test (number, quantity, reading etc.) ii) WIPPSI (Japanese version) iii) Memory Test (recall) iv) Motor Ability Test (hopping on one foot and using a scissors) v) Matching Familiar Figures Test (KRISP) vi) Role-Taking Task vii) Rating on Achievement Motivation (rated while the child was taking the WPPSI and School Readiness Tests). In addition to these measures, global ratings of the child's behavior at the day nursery were made by his/her teacher.

What follows is a preliminary report of the data analyzed so far.

MOTHER-CHILD INTERACTION PATTERNS IN A SEMI-STRUCTURED SITUATION

It has long been recognized that mother-child interaction plays an important role in child development. Many researchers have attempted to describe the characteristics of mother-child interaction in free play or structured situations, and explain individual differences in various abilities of the child by differences in the patterns of mother-child interaction. These studies have mainly focused on describing the mother's behavioral characteristics, and computing correlations between specific categories of maternal behavior and specific abilities of the child (e. g. Price, Hess, & Dickson, 1981).

However, interaction between a mother and child is a bi-directional process occurring through time (e. g. Lewis, & Rosenblum, 1974 ; Patterson, & Moore, 1979). The mother's behavior oriented to the child may be influenced by the preceding and subsequent behaviors of the child, and the child's behavior to the mother may be influenced by the preceding and subsequent behaviors of the mother. Although there has been a widespread recognition of the need to describe mother-child interaction in a way that captures this bi-directionality, the research has not yet been completely successful in doing so.

In recent years, sequential analysis has been recognized as an effective tool for describing and analyzing reciprocal interaction (Cairns, 1979 ; Lamb, Suomi, & Stephenson, 1979). However, there have been few attempts to apply sequential analysis to mother-preschooler interaction ; rather, sequential analysis has been employed mainly in mother-infant interaction (e. g. Brazelton, Koslowsky, & Main, 1974 ; Lewis, & Lee-Painter, 1974 ; Martin, Maccoby, Baran, & Jacklin, 1981) and peer interaction (e. g. Gottman, 1980). Moreover, many of the researchers who have used a sequential analysis have analyzed their data with a lag-1 analysis, analyzing only those behaviors that occurred immediately after

a chosen target behavior (e. g. Lewis, & Lee-Painter, 1974 ; Martin, Maccoby, Baran, & Jacklin, 1980). We claim here that a lag-2 analysis is necessary, since not only does a mother's behavior have an effect on the child's behavior but the child's behavior in turn will produce some change in the mother's subsequent behavior. In this study, both a frequency analysis and a lag-2 sequential analysis were used to describe the interaction between a sample of 4-year old children and their mothers in a semi-structured situation. The use of two methods of analysis allows a comparison and evaluation of the descriptions provided by each.

The mother and child were observed in a semi-structured situation. The mother was instructed to play freely, but to play with the child using a pattern construction toy, for which there were several model pictures available, as well. Four types of play themes were expected with this toy : Making patterns according to the models, making the patterns without models, using this toy in other ways, or not doing anything consistently. We expected that the choice of a play theme would reflect differences in the nature of mother-child interactions (Borduin, & Henggeler, 1981 ; Henggeler, Borduin, Rodick, & Tavormina, 1979). Thus, in addition to the over all analyses, we also carried out separate frequency analyses and sequential analyses on the data by separate interaction theme groups.

This study examines the following issues : First, does a sequential analysis provide a more adequate description of the reciprocal nature of mother-child interaction ; how does this description differ from that obtained through a frequency analysis ? Second, in what way do patterns and contents of mother-child interaction vary by the types of play themes, and if so, how do they vary ?

METHOD

1. Subjects

Subjects were 27 children and their mothers. Fourteen came from an urban area (7 males, 7 females) and 13 came from a rural area (5 males, 8 females). The children ranged in age from 3 : 11 to 4 : 11.

2. Procedure

Each mother-child pair was asked to spend ten minutes in free play with a pegboard. The pegboard had 63 multi-colored pegs that could be put into the holes on the board to make various patterns such as a tree, a house and so on. Two sets of materials were prepared, one for the mother and one for the child. The mother-child interaction was recorded using a video-tape-recorder.

3. Coding

The videotaped interactions were transcribed, and the transcriptions were divided into communication units, defined as the smallest unit of action or utterance comprising an uninterrupted idea or topic of play. Each communication unit was coded into 3 general categories as either a Progressive unit (one requiring some response), a Responsive unit (a communicative action/utterance requiring no response), or a Non-interactive unit (one that did not attempt to communicate anything). In addition, each communication unit was coded a second time into 11 more specific categories of child and maternal behavior. The five categories of child behavior were (1) asserting (information-seeking, demanding and self-asserting), (2) neutral (spontaneous behavior and self-reporting), (3) positive re-

sponding, (4) negative responding, and (5) other. The six maternal categories were (1) teaching, (2) other controlling behavior (motivating behavior and confirmative questions), (3) neutral (spontaneous behavior and self-reporting), (4) responding, and (5) other. The teaching behavior category consisted of two subcategories: direct controlling (direct teaching and commanding) and indirect controlling (indirect teaching, proposal and prompting questions).

RESULTS and DISCUSSION

1. Frequency analysis—total samples

The total number of behaviors in the 5 categories of child behavior were 2,653 ; the total in the six categories of mother's behavior were 2,706. The most common child behavior was neutral behavior, 1,111 observed (41.9%). There were 974 occurrences of positive responding (36.7%) ; 419 occurrences of asserting (15.8%) ; 100 occurrences of negative responding (3.8%) ; and there were 49 "other" behaviors (1.8%). The most frequent mother behavior was teaching, which was observed 1,326 (49%). In the breakdown of teaching behaviors, direct controlling behaviors accounted for 52.5%, and indirect controlling behaviors accounted for remaining 47.5%. There were 648 responding behaviors (23.9%) ; 384 neutral behaviors (14.2%) ; 271 other controlling behaviors (10%) ; and 77 "other" behaviors (2.8%).

These results suggest that the mothers played a controlling role in the interactions, while the children predominantly were involved in carrying out their play activities. This interpretation is confirmed by the analysis of the general communication unit categories (Progressive, Responsive and Non-interactive units). Of the mother's behaviors, 66 percent were categorized as Progressive units, 25.2 percent were Responsive units, and only 9 percent were Non-interactive units. Of the child's behaviors, 30 percent were Progressive units, 46.9 percent were Responsive units, and 22.2 percent were Non-interactive units. These results show that mothers played a leading role in the interaction and children took mainly a somewhat passive role. (It is possible, however, that some part of these results may be attributed to the mother's understanding the situation more as a task situation than as a free play situation : In 25 of the 27 pairs, the mother urged her child to make some kind of pattern using the pegboard.) Therefore, it is possible to conclude that there is a unidirectional interaction process, in which maternal behavior influences the subsequent child behaviors.

2. Frequency analysis—separate analysis by play themes

In the previous analyses, it was suggested that mothers played a controlling or leading role and that children took a passive or responsive role. Do these interaction roles vary according to the different play themes? We examined this problem using a separate frequency analysis for each play theme group. A total of 24 children provided data for the separate interaction theme analyses. Of these 24 children, eight spent the sessions making several patterns according to the model ("Model" group), eight made several of their own patterns ("non-Model" group), and eight engaged in a number of random activities, some with the pattern-construction toy ("Random" group). Of the three remaining children who were not included in the separate theme analyses, one child used the play material in an idiosyncratic way, and two of the children changed their play themes mid-

way through the session.

TABLE 1

Frequencies of mother and child behavior categories for each play theme gronp.

	Model group	non-Model group	Random group
Mother's behavior			
Teaching	453 (55.4%)	363 (44.2%)	408 (46.7%)
Direct controlling	290 (35.5%)	136 (16.6%)	201 (23.0%)
Indirect controlling	163 (20.0%)	227 (27.6%)	207 (23.7%)
Other controlling	50 (6.1%)	83 (10.1%)	125 (14.3%)
Neutral	67 (8.1%)	159 (19.4%)	144 (16.5%)
Responding	222 (27.2%)	193 (23.5%)	173 (19.8%)
Other	25 (3.1%)	23 (2.8%)	23 (2.6%)
Total	817	821	873
Child's behavior			
Asserting	148 (18.0%)	115 (14.6%)	188 (15.2%)
Neutral	345 (42.0%)	334 (42.3%)	336 (40.0%)
Positive responding	313 (38.1%)	320 (40.6%)	282 (33.5%)
Negative responding	6 (0.7%)	14 (1.8%)	77 (9.2%)
Other	9 (1.1%)	6 (0.8%)	18 (2.1%)
Total	821	789	841

The results of these analyses were as follows : The child behaviors were somewhat similar among the three groups, as shown in table 1. However, three significant differences were found : (a) The non-Model group children responded positively to the mother more than did the children in the Random group ($X^2= 8.63$, $df 1$, $p<0.01$) ; (b) the Random group children responded negatively to the mother more than did the children of either the Model group ($X^2= 62.15$, $df 1$, $p<0.01$) and (c) the non-Model group ($X^2= 42.08$, $df 1$, $p<0.01$).

In the analyses of the mother's behaviors, the mothers of the Model group showed teaching behavior more than either the mothers of the non-Model group ($X^2= 20.67$, $df 1$, $p<0.01$) or the Random group ($X^2= 12.82$, $df 1$, $p<0.01$). The mothers' teaching behavior was compared for use of direct controlling and indirect controlling. The frequency of direct controlling behaviors were different among the three groups ($X^2= 73.98$, $df 2$, $p<0.01$) : The Model group mothers used more direct controlling than did the Random group mothers, who in turn used more direct controlling than did the non-Model group mothers. The mothers of the non-Model group showed indirect controlling behaviors more than the mothers of the Model group ($X^2= 13.38$, $df 1$, $p<0.01$). Comparing these two types of controlling behaviors within each group, the mothers of the Model group used direct controlling more than indirect controlling ($X^2= 35.6$, $df 1$, $p<0.01$). In contrast, the mothers of the non-Model group used indirect controlling more than direct controlling ($X^2= 18.74$, $df 1$, $p<0.01$), while the mothers of the Random group used these two strategies equally. The frequencies of other controlling behaviors were different among the three groups ($X^2= 30.80$, $df 2$, $p<0.01$) : the Random group > the non-Model group > Model group. The mothers of the Model group showed neutral behaviors less than did the mothers of both the non-Model group ($X^2= 42.94$, $df 1$, $p<0.01$) and the Random group ($X^2= 26.57$, $df 1$, $p<0.01$).

Finally, the mothers of the Model group responded to the children more than did the mothers of the Random group ($x^2 = 12.75$, df 1, $p < 0.01$).

These results indicate that themes of play reflect differences in the contents of mother-child interaction, especially differences in maternal teaching styles. The mothers of the Model group produced teaching behaviors 10 percent more than did the mothers of the other two groups, and their dominant teaching strategy was a direct one. Also, consistent with this pattern, neutral behaviors were found less frequently for Model group mothers than for non-Model and Random group mothers. It may be possible to explain this pattern as due to the Model group mothers' concern with guiding their children's behavior toward more definite goals. The non-Model mothers, on the other hand, appeared less concerned with using the situation as a teaching opportunity ; rather they seemed to be more considerate of the child's perspective, and more interested in sharing the activity with the child. Non-Model group mothers often constructed patterns with the second set, while the child was constructing his/her own patterns.

In the Random group, the children produced negative responses to the mothers in about 10 percent of their total behaviors. The mothers in this group produced more other controlling behaviors than did the mothers in the other two groups. The Random group mothers produced the same number of neutral behaviors as did the non-Model group mothers, and both produced more neutral behaviors than did the Model group mothers. In the Random group, the mothers' behaviors appeared to be influenced by the children's negative responding. That is, when the mother's initial teaching efforts (which were as frequent as for non-Model group mothers) were rejected by the child, she was forced to try other methods ; therefore she resorted to other controlling methods more often than did mothers in the other two groups. In addition, it appeared that even the neutral behaviors produced by these mothers had a controlling function since their neutral behaviors frequently served as an example or prompt for the child.

Overall, these separate analyses, confirm the results of the first analyses : The mother plays a controlling role in the interaction, while the child is a generally responsive/passive participant.

3. Sequential analysis—total samples

A lag-2 sequential analysis was performed using event sequence data. Two transition probabilities were computed for each criterion behavior, one for the behavior antecedent to the criterion, and one for the behavior subsequent to the criterion. Four behavior categories were chosen as criterion behaviors : Mother's teaching, mother's responding, child's neutral behavior and child's positive-responding. These categories were chosen for the analysis because they were the most frequently observed categories, and because they had played an important role in the previous frequency analyses.

Table 2 shows the transition probabilities for the combined sample ; and figure 1 shows the transition probabilities that were found to be above chance level.*

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* To test whether the observed transition probabilities exceeded chance level, a binominal test was used. If z-scores > 1.96, the observed transition probabilities can be considered as having exceeded chance level at a .05 level of significance (Gottman & Bakeman, 1979).

TABLE 2

Transition probabilities between mother and child behavior categories for all samples

Antecedent behavior		Criterion behavior	Subsequent behavior	
Teaching	147 (13.2%)		Teaching	422 (37.9%)*
Other controlling	25 (2.2%)		Other controlling	115 (10.3%)
Neutral	59 (5.3%)	C's Neutral	Neutral	62 (5.6%)
Responding	170 (15.3%)	behavior	Responding	309 (27.8%)*
Other	33 (3.0%)	(1,112)	Other	37 (3.3%)
No antecedent	678 (61.0%)*		No subsequent r.	167 (15.0%)
Teaching	670 (68.7%)*		Teaching	429 (44.0%)*
Other controlling	162 (16.6%)		Other controlling	82 (8.4%)
Neutral	72 (7.4%)	C's Positive	Neutral	64 (6.6%)
Responding	61 (6.3%)	responding	Responding	191 (19.6%)*
Other	10 (1.0%)	(975)	Other	25 (2.6%)
			No subsequent r.	184 (18.9%)
Asserting	176 (13.5%)		Asserting	168 (12.9%)
Neutral	428 (32.7%)*		Neutral	141 (10.8%)
Positive responding	441 (33.7%)*	M's	Positive responding	676 (51.7%)*
Negative responding	54 (4.1%)	Teaching	Negative responding	78 (6.0%)
Other	31 (2.4%)	(1,307)	Other	33 (2.5%)
No antecedent	177 (13.5%)		No subsequent r.	211 (16.1%)
Asserting	150 (23.1%)*		Asserting	79 (12.2%)
Neutral	307 (47.4%)*		Neutral	173 (26.7%)*
Positive responding	180 (27.8%)*	M's	Positive responding	64 (9.9%)
Negative responding	3 (0.5%)	Responding	Negative responding	3 (0.5%)
Other	8 (1.2%)	(648)	Other	5 (0.8%)
			No subsequent r.	324 (50.0%)*

*$p<0.05$

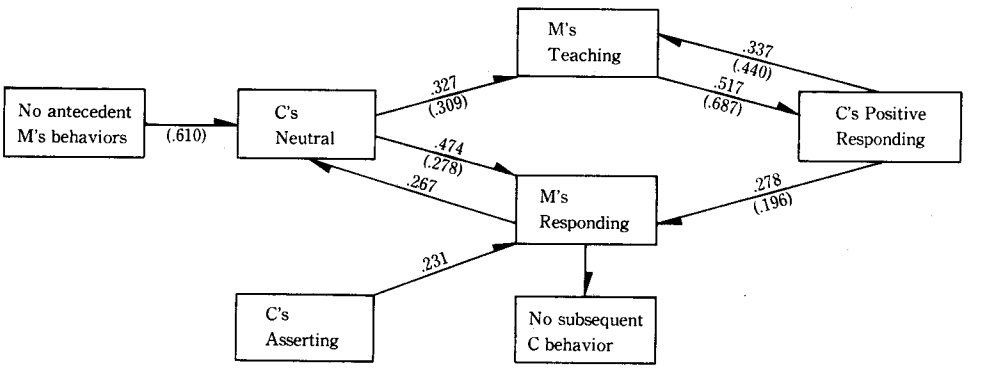

FIGURE 1 Transition probabilities between mother and child behavior categories for all samples.
(The numbers in parentheses are the transition probabilities with the child's behavior as criterion behavior. When the mother's behavior is the criterion behavior, the transition probabilities are shown without parentheses.)

Of the children's neutral behaviors, 61 percent were independent of any antecedent maternal behaviors, but they were followed by the mother's responding (27.8%) and teaching (30.9%). About 60 percent of them were given some information by mothers. Of the children's positive responses, 68.7 percent were in response to mother's teaching, and they were followed by the mother's additional teaching (44%) or responding (19.6%).

Mothers' teaching behaviors were produced in response to the children's neutral behaviors (32.7%) and positive respondings (33.7%) and they were followed by the children's positive respondings (51.7%). Mothers' respondings followed children's neutral behaviors most frequently (47.4%); they also followed children's positive responding (27.8%) and children's asserting (23.1%). Mothers' responding behaviors were followed by children's neutral behaviors (26.7%) ; however, 50 percent of the mothers' responding resulted in no subsequent behavior from the child.

From these results, we can infer three different types of interaction patterns (see figure 1) :

(1) C's neutral → M's teaching → C's positive responding → M's teaching → C's positive responding ⇢
M's responding

(2) C's neutral → M's responding → C's neutral → M's responding ⇢

(3) C's neutral → M's responding →

These patterns indicate that many of the interactions were very progressive in nature. In all patterns, the responsiveness of the children seems to have been of critical importance for the continuation of the interaction.

4. Sequential analysis—separate analysis by play themes.

The results of separate sequential analyses of the individual play theme groups are shown in table 3, 4, 5 and figure 2, 3, 4.

The interaction patterns indicated by the Model and non-Model group were very similar to the one obtained in the overall analysis (compare figure 1 to figure 2 and 3), although there were some differences in the transition probabilities between the two groups. The children in the Model group responded positively to the mother's teaching more often than did the child of the non-Model group ($X^2 = 24.18$, df 1, $p < 0.01$), and the children's positive responding was followed by the mother's teaching in the Model group more than in the non-Model group ($X^2 = 7.79$, df 1, $p < 0.05$).

The patterns and transition probabilities in the Random group were clearly different from those of the other two groups. The major differences were as follows : (1) the probability with which the mother responded to the child's positive responding did not exceed chance level ; (2) the probability of neutral behavior by the child occurring after the mother's responding did not exceed chance level ; (3) the probability of no behavior occurring in response to mother's teaching and (4) in response to the child's positive responding was above chance level in both cases ; and (5), the child's positive responding was followed less frequently by the mother's teaching than in the other two groups (with Model group : $X^2 = 17.43$; with non-Model group : $X^2 = 13.19$, df 1, $p < 0.01$). These results suggest two types of interaction patterns (see figure 4) :

(1) C's neutral → M's teaching ⇄ C's positive responding ⇄ M's teaching ⇢

TABLE 3

Transition probabilities between mother and child behavior categories for Model group

Antecedent behavior		Criterion behavior	Subsequent behavior	
Teaching	54 (15.6%)		Teaching	146 (42.2%)*
Other controlling	8 (2.3%)		Other controlling	26 (7.5%)
Neutral	13 (3.8%)	C's Neutral	Neutral	15 (4.3%)
Responding	61 (17.6%)	behavior	Responding	105 (30.3%)*
Other	9 (2.6%)	(346)	Other	11 (3.2%)
No antecedent	201 (58.1%)*		No subsequent r.	43 (12.4%)
Teaching	251 (80.2%)*		Teaching	160 (51.1%)*
Other controlling	25 (8.0%)		Other controlling	14 (4.5%)
Neutral	18 (5.8%)	C's Positive	Neutral	13 (4.2%)
Responding	16 (5.1%)	responding	Responding	64 (20.4%)
Other	3 (1.0%)	(313)	Other	4 (1.3%)
			No subsequent r.	58 (18.5%)
Asserting	76 (17.1%)		Asserting	74 (16.7%)
Neutral	150 (33.8%)*		Neutral	53 (11.9%)
Positive responding	159 (35.8%)*	M's	Positive responding	254 (57.2%)*
Negative responding	6 (1.4%)	Teaching	Negative responding	8 (1.8%)
Other	4 (0.9%)	(444)	Other	4 (0.9%)
No antecedent	49 (11.0%)		No subsequent r.	51 (11.5%)
Asserting	53 (23.9%)		Asserting	29 (13.1%)
Neutral	99 (44.6%)*		Neutral	61 (27.5%)*
Positive responding	66 (29.7%)*	M's	Positive responding	17 (7.7%)
Negative responding	0	Responding	Negative responding	0
Other	4 (1.8%)	(222)	Other	3 (1.4%)
			No subsequent r.	112 (50.5%)*

*$p<0.05$

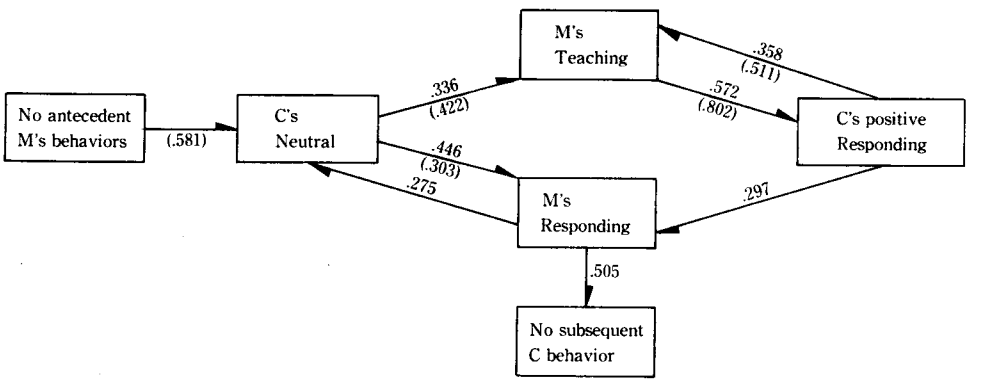

FIGURE 2 Transition probabilities between mother and child behavior categories for Model group.
(The numbers in parentheses are the transition probabilities with the child's behavior as criterion behavior. When the mother's behavior is the criterion behavior, the transition probabilities are shown without parentheses.)

TABLE 4

Transition probabilities between mother and child behavior categories for non-Model group

Antecedent behavior		Criterion behavior	Subsequent behavior	
Teaching	47 (14.1%)		Teaching	106 (31.7%)*
Other controlling	7 (2.1%)		Other controlling	45 (13.5%)
Neutral	21 (6.3%)	C's Neutral	Neutral	19 (5.7%)
Responding	61 (18.3%)	behavior	Responding	97 (29.0%)*
Other	12 (3.6%)	(334)	Other	10 (3.0%)
No antecedent	186 (55.7%)*		No subsequent r.	57 (17.1%)
Teaching	200 (62.5%)*		Teaching	138 (43.1%)*
Other controlling	61 (19.1%)		Other controlling	28 (8.8%)
Neutral	32 (10.0%)	C's Positive	Neutral	33 (10.3%)
Responding	22 (6.9%)	responding	Responding	61 (19.1%)
Other	5 (1.6%)	(320)	Other	7 (2.2%)
			No subsequent r.	53 (16.6%)
Asserting	41 (11.7%)		Asserting	36 (10.2%)
Neutral	108 (30.6%)*		Neutral	48 (13.6%)
Positive responding	140 (39.7%)*	M's	Positive responding	198 (56.1%)*
Negative responding	8 (2.3%)	Responding	Negative responding	12 (3.4%)
Other	4 (1.1%)	(193)	Other	6 (1.7%)
No antecedent	52 (14.7%)		No subsequent r.	53 (15.0%)
Asserting	39 (20.2%)		Asserting	21 (10.9%)
Neutral	99 (51.3%)*		Neutral	64 (33.2%)*
Positive responding	55 (28.5%)*	M's	Positive responding	24 (12.4%)
Negative responding	0	Teaching	Negative responding	0
Other	0	(353)	Other	0
			No subsequent r.	84 (43.5%)*

* $p < 0.05$

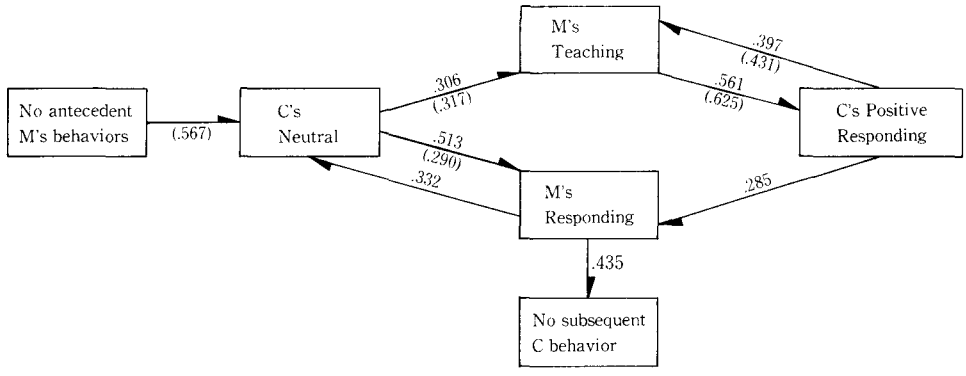

FIGURE 3 Transition probabilities between mother and child behavior categories for Model group.
(The numbers in parentheses are the transition probabilities with the child's behavior as criterion behavior. When the mother's behavior is the criterion behavior, the transition probabilities are shown without parentheses.)

TABLE 5

Transition probabilities between mother and child behavior categories for Random group

Antecedent behavior		Criterion behavior	Subsequent behavior	
Teaching	38 (11.3%)		Teaching	132 (39.3%)*
Other controlling	9 (2.7%)		Other controlling	37 (11.0%)
Neutral	23 (6.8%)	C's Neutral	Neutral	24 (7.1%)
Responding	38 (11.3%)	behavior	Responding	77 (22.9%)*
Other	8 (2.4%)	(336)	Other	10 (3.0%)
No antecedent	220 (65.5%)*		No subsequent r.	56 (16.7%)
Teaching	170 (60.1%)*		Teaching	119 (42.0%)*
Other controlling	68 (24.0%)		Other controlling	27 (9.5%)
Neutral	21 (7.4%)	C's Positive	Neutral	16 (5.7%)
Responding	22 (7.8%)	responding	Responding	58 (20.5%)
Other	2 (0.7%)	(283)	Other	3 (1.1%)
			No subsequent r.	60 (21.2%)*
Asserting	43 (10.5%)		Asserting	49 (12.0%)
Neutral	133 (32.6%)*		Neutral	34 (8.3%)
Positive responding	120 (29.4%)*	M's	Positive responding	175 (42.9%)*
Negative responding	37 (9.1%)	Teaching	Negative responding	55 (13.5%)
Other	10 (2.5%)	(408)	Other	11 (2.7%)
No antecedent	65 (15.9%)		No subsequent r.	84 (20.6%)*
Asserting	47 (27.2%)*		Asserting	24 (13.9%)
Neutral	79 (45.8%)*		Neutral	37 (21.4%)
Positive responding	42 (24.5%)	M's	Positive responding	22 (12.7%)
Negative responding	3 (1.9%)	Responding	Negative responding	3 (1.9%)
Other	2 (1.2%)	(173)	Other	2 (1.2%)
			No subsequent r.	85 (49.1%)*

* $p<0.05$

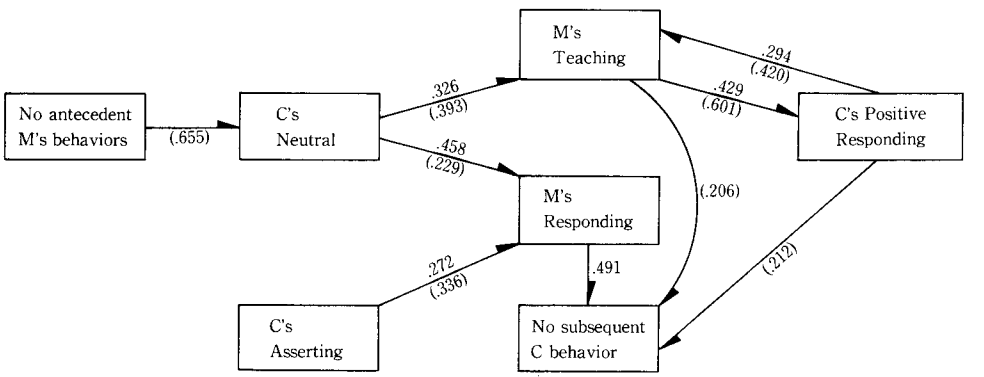

FIGURE 4 Transition probabilities between mother and child behavior categories for Model group.
(The numbers in parentheses are the transition probabilities with the child's behavior as criterion behavior. When the mother's behavior is the criterion behavior, the transition probabilities are shown without parentheses.)

(2) C's neutral → M's responding →
clearly these patterns were very different from the ones obtained for the total sample, and for the Model and non-Model groups. These patterns indicate that mother-child interaction in the Random group was not as progressive compared to the interactions observed in the other two groups, possibly due either to the low level of responsiveness in the mother or in the child.

CONCLUSION

The results of the frequency analyses indicated that the mother played a controlling or leading role most often in the interaction sessions while the child played a responsive or passive role most frequently. From these results, we may speculate that there is a unidirectional interaction process occurring in which maternal behaviors influence the subsequent child behaviors. However, the results obtained through the sequential analyses have suggested a reciprocal, bi-directional interaction process; that is, the child's responsiveness to the maternal teaching and responding behaviors is also of critical importance to the pattern of mother-child interaction. Thus, there is the possibility of missing important elements in the interaction process if only a frequency analysis is used.

The results of this study have also indicated that there are substantial differences in both the contents and patterns of interaction as seen in the separate play theme groups. In many studies in the past, researchers have observed mother-child interactions in free play situations or semi-structured situations. However, they have not been concerned with the types of play that have occurred. One of our own studies (Tajima & Miyake, 1980) is no exception. The results of this study have shown that investigation of this aspect of the mother-child interaction can be an important and informative variable.

THE COMPARISION OF AGRICULTUAL AND URBAN CHILDREN'S ACTIVITIES AT HOME AND IN THEIR NEIGHBORHOOD

Many researchers have shown that there are differences in preschooler's daily activities and play due to differences in their home environments (Smilansky, 1968, Feitelson & Ross 1973, Hollos & Cowan 1973, Rosen 1974, Rubin et al. 1976, Tizard et al. 1976, Feitelson 1977, Dunn & Wooding 1977, Smith 1977, Griffing 1980, Udwin & Shmukler 1981). These researchers have suggested that socially disadvantaged children, in comparison with middle-class children, demonstrate less imaginative play (Smilansky 1968, Feitelson & Ross 1973, Rosen 1974, Tizard et al. 1976, Smith 1977), less group play but more parallel and solitary play (Rubin et al. 1976, Griffing 1980), more manipulative use of toys (Smilansky 1968, Tizard et al. 1976) and less need for help from their mothers in developing fantasy play episodes (Dunn & Wooding 1977, Udin & Shmukler 1981). But, accepting Udwin & Shmukler's claim that a number of home background factors are culture-bound, we should be cautious about generalizing these results to children in Japan.

Japanese researchers, on the other hand, have concentrated on differences in children from agricultural vs. urban areas (Ohhira 1962, Agarie & Ohnishi 1964, Sugimura 1980). Azuma and Kashiwagi (1980) suggested that, in Japan, families in agricultural areas are very distinct from families in urban areas, both in family members and home and educational environment. However, the studies done generally have not been concerned with

the child's free activities and have not observed the children directly. Therefore a observational study at home is needed. Agricultural children's activities were expected to contrast with the low-SES children investigated in preceeding studies who lived in overcrowded environments.

This section presents a preliminary analysis of data from a study utilizing an eco-psychological approach to the description of child-parent relationships and its influence on child development. In this study, urban and agricultural children were observed in their daily activities at home and in their neighborhood area. The purpose of the study was to examine whether there were any differences between these two groups in types/form of their activities.

In particular, the study compared the urban and agricultural children's activities on the following points :

(1) To what extent were the children's activities comprised of novel and recurring themes?

(2) In what way were activity themes characteristically terminated and by whom ?

In order to realize these purposes, this study used a sequential analysis following Smith's (1977) suggestion that it is important to find the rule structures inherent in play sequences rather than simply obtaining quantitative data. In this way it should be possible to more systematically describe the activities observed.

METHOD

1. Subjects

A total of 28 preschool boys and girls comprised the sample. Fifteen children (8 boys and 7 girls) aged 56 months to 66 months (mean = 61mos.) were from an urban (U) area. Thirteen children (8 boys and 5 girls) were from an agricultural (A) area. The age range of the children was 54 months to 64 months, with a mean of 59 months.

2. Observation procedure

A pair of observers visited the children's homes and asked family members to maintain their usual behavior and attitude toward the child. They observed the child and described all of his/her activities for 30 minutes in the morning of one day and in the afternoon of a succeeding day (within 2 days of the first session). The activity descriptions were recorded on recording paper sectioned into two-minute observation intervals. During the observation, the subjects were not restricted in either location or activities. After each observation, the two observers talked with each other and made a complete combined protocol.

3. Definition of categories of activities

Each protocol was coded into the categories shown in table 1. The definition of each category was as follows :

(1) Activity theme

When a child produced a sequence of acts in one context which related to the same object(s) or aim(s), we described the action sequence as having a theme ; for example, as shown in table 1, sliding, swinging, make-believe, conversation, or so on. These themes were then divided into two subcategories ; Novel (N) and Recurrent (R). A Novel theme was one which was occurring for the first time in the observation period. If the same theme occurred again later, it was coded as "Recurrent".

(2) Sequence of acts

The one or more constituent act(s) comprising each activity theme were identified (see table 1). In table 1, the first activity theme, sliding, consisted of three constituent acts and the second theme, looking-around, is consisted of one only.

Each constituent act was then classfied as either Novel (N), Recurrent (R) or Extended (E). Novel acts were those which occurred first within an activity theme and, therefore, the number of Novel acts was equal to the number of themes in a protocol. When the same act occurred again, it was classified as Recurrent. When an act developed the sub-theme of the act immediately prior to it, it was classified as an Extended act.

(3) Termination of an activity theme

TABLE 1

An example protocol

(Observed in a park. A : Subject; B : Peer; C : Peer.)	Activity theme	Termination	Constituent act	Activity companion	Interaction level	Symbolic act
Goes to a slide alone. Climbs up it and slides down.	N		N	—	SO	—
Again climbs up and slides down.			R	—	SO	—
Again climbs up it.		C	R	—	SO	—
On the platform, looks around.	N	ID	N		SN	—
Slides down it.	N		N	Peer	One-way	—
Goes to where B is swinging ; gets on the swing next to B's swing.						
Stands up and kicks to swing higher.			E	—	SO	—
Says "Let's race," and kicks the swing higher. (But, B doesn't reply.)			E	Peer	One-way	—
Saying "I'm done," gets off the swing.		C	R	—	SO	—
Goes over to the slide and climbs up.	R	IR	R	—	SO	—
(C comes to the slide.) C says to A : "Let's play subway". A agrees.	N		N	Peer	Two-way	—
(C climbs up the side.) A and C slide down together like a subway train.			E	Peer	Two-way	+
Again the same play is repeated.		ID	R	Peer	Two-way	+
A hears an ambulance siren and goes to the road alone. (C stays on the slide.)	N		N	—	SO	—
An emergency-car passes and comes back to the park.		F	R	—	SO	—

(+ : occurred ; N : Novel ; R : Recurrent ; C : Closed ; F : Finish ; IR : Interrupted ; E : Extended ; SO : Self/Object ; SN : No Activity)

Causes of termination of an activity theme were classified as to whether the subject him/herself (self) or whether another person or an object (other) caused the end of the activity theme. "Self" had two sub-categories, Finish (F) and Closed (C). "Finish" indicated the end of an activity theme because the child had attained the intended goal. On the other hand "Closed" indicated that a subject stopped midway in the course of one activity theme and began another one.

Some activity themes had only a "Closed" termination possible : for example, swinging, sliding, make-believe play and looking at an object. In contrast with these, such themes as response to a question, putting toys in order, and doing papercraft could be terminated by "Finish" if the goals were accomplished, or terminated by "Closed" if the goals were not accomplished. To some extent, the amount of "Closed" or "Finished" terminations may be dependent on the children's preferences in type of activities.

The category of "Other" also was classified into two sub-categories, Interrupted (IR) and Induced (ID). "Interrupted" was defined as those cases in which an activity theme was broken off and another one begun due to an interruption by someone. "Induced" referred to cases where a child moved from the old activity theme and selected a new one because he/she was attracted to an event or to someone else's play.

(4) Activity companions and the level of interaction

An activity companion was identified as either a peer, a sibling, a family adult or a stranger (since no stranger interactions were observed, this category was later dropped).

Any of the subject's behavior directed toward the observers was eliminated from the data. Interaction with an activity companion was decribed as either a one-way interaction, i. e., where companions attempts to communicate/behave with the subject were not received or *vice versa* ; or as a two-way interaction, i. e., where there was mutual and cooperative communication/activity between the subject and his/her companion(s). If there were no activity companion(s) present, then the child's activity was identified as either self or object focused (SO) or as involving no activity (SN).

(5) Symbolic acts

When a child used an object in imaginative play as if it were a different object or person, or used an object in a unique way, the acts involved were classified as symbolic acts.

4. Reliability of the categorization

Two independent coders coded three of the 28 samples with a reliability of 82.4%. Since this rate demonstrated a sufficiently high level of agreement, the remainder of the data were coded by one coder only.

RESULTS and DISCUSSION

I. Activity theme analysis

(1) Differences by type

The agricultural and urban children were compared for the frequency of Novel and Reccurrent activity themes. No significant differences were found either by Wilcoxon U-tests or by Chi-square test.

(2) Duration

A duration unit was defined as the number of two-minute observational units through which a child continued the same activity. Neither the mean duration nor longest duration indicated any significant differences between agricultural and urban children. Both groups of children continued an activity theme for equivalent lengths of time.

(3) Termination

There were no significant differences for mean number of terminations or for the source of terminations (Self or Other). Thus, these results indicate that the agricultural

and the urban groups were analogous in their terminations.

However, differences did occur for the sub-categories Finish *vs.* Close and Interrupted *vs.* Induced (see fig. 1). Agricultural children tended to end their activity themes more often with "Finish", but more "Closed" terminations were found for the urban children. Terminations in the agricultural group were also characterized as more likely to be ended by "Interruption", while urban children's terminations were more frequently ended indirectly ; i. e., were "Induced" ($X^2(3) = 42.4$, $p<.001$).

The differences between the two groups on each of these four sub-categories were also significant by Wilcoxon U-tests (F : U = 56, $.10>p>.05$; C : U = 51, $.05>p>.01$; IR : U = 57, $.10>p>.05$; ID : U = 58.5, $.10>p>.05$) (see fig. 1).

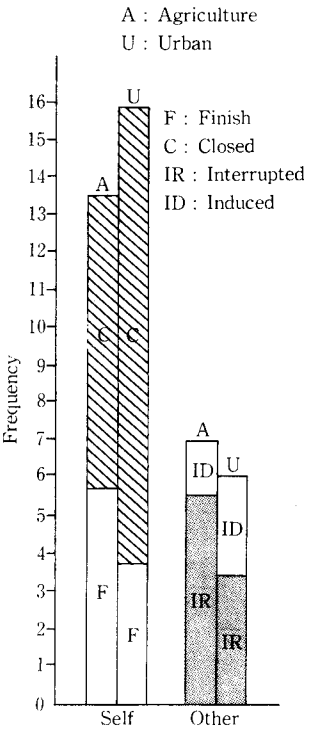

FIGURE 1
Termination of activity

II. Constituent act analysis

(1) Differences by type

Table 2 shows a comparison of agricultural and urban children for the frequency of three sub-categories of constituent acts, Novel, Recurrent and Extended. More recurrent acts were found for agricultural children than for urban children (Wilcoxon U = 53, $.05>p>.01$). Thus agricultural children were more repetitive in their constituent acts. But because the difference in Extended acts (E) were not significant, it seems that both groups of children had the same degree of ability to extend or develop prior acts.

TABLE 2

Types of constituent acts

	N		R		E		Chi-square
	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	
A	9.00	3.61	18.27	5.53	12.38	4.96	*ns*
U	10.13	3.64	14.12	10.02	12.27	5.68	
U-test	*ns*		53*		*ns*		

(*p<.05, A : Agricultural ; U : Urban ; N : Novel ; R : Recurrent; E : Extended)

(2) Continuity of acts

Agricultural and urban children were compared for the number of acts comprising one activity theme. As figure 2(a) shows, there were no differences found for the two groups. The results show that for both groups the majority of activity themes involved only one act ; thus for the most part, the children's activities did not continue on one theme for every long and were very simple in structure.

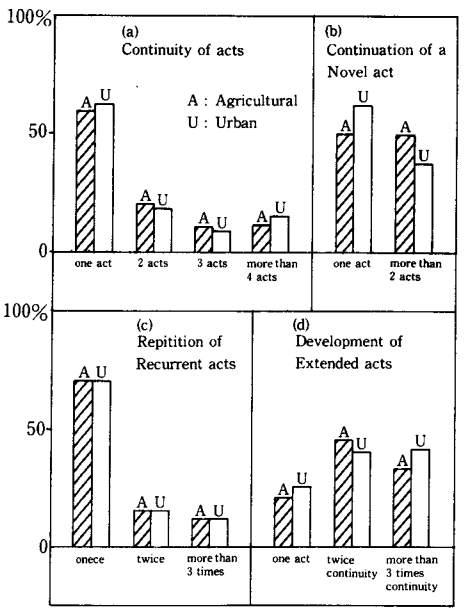

FIGURE 2
Continuity of constituent acts

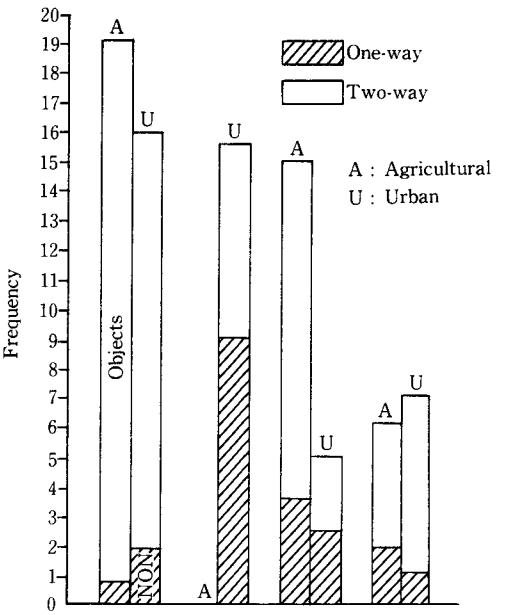

FIGURE 3
Companion and the level of interaction

The children were next compared for continuation of a Novel act (N), repetition of Recurrent acts (R) and degree of development by Extended acts (E) to the prior to it. The

results are presented in figures 2 (b) to (d). A near significant difference was found only for the continuation of Novel acts, figure 2 (b) indicating that agricultural children continued a new theme with more constituent acts than did urban children ($X^2(1) = 2.83$, $.10 > p > .05$).

Referring back to the data on Novel, Recurrent and Extended acts in table 2, the only difference found was a higher number of Recurrent acts for the agricultural group children. Thus, the greater continuity found after a Novel act for the agricultural children reflects the fact that they spend more time in one type of activity than do urban children.

Contrastingly, the results of Recurrent and Extended acts demonstrated a difference in the nature of Recurrent and Extended acts, rather than a difference between the two groups. An Extended act was likely to be followed by another Extended act, while a Recurrent act was apt to change to an Extended act or to move toward termination of the activity theme.

III. Interaction with companions

(1) Activity companion

Figure 3 shows the results for type of companion. A distinction between the agricultural and the urban children was found for frequency of interaction with siblings and peers. Although agricultural children interacted with their siblings more than urban children (Wilcoxon U = 34, $p < .01$), they had very little contact with peers ($X^2(2) = 87.96$, $p < .001$). The frequency of interaction with family adults* was about equal for the two groups. Thus, it seems that agricultural children's lack of peers as companions is compensated for by their play with siblings.

(2) Levels of interaction

The mean number of interactions with companions, of solitary activities (Self) and of one-way and two-way interaction indicate both agricultural children and urban children were equivalent in amount of time spent alone (Wilcoxon U = 66, *ns.*) and in activities with others (Wilcoxon U = 70, *ns.*).

However, in levels of interaction with companions, urban children engaged in more one-way interactions than did agricultural children ($X^2(1) = 7.58$, $.05 > p > .01$). As shown in figure 3, agricultural children's play with siblings was mostly two-way (CR = 2.21, $.05 > p > .01$), while urban children's play with their peers was approximately 50% one-way interaction. However, interaction with the family adult (mother) for both involved more two-way than one-way interaction. Thus, the overall difference between the groups in one-way interactions may be due to these differences found by play companion for the two groups.

As seen in the data presented in table 3, the agricultural children and the urban children produced equivalent numbers of extended acts both in solitary play and in play with family adults. In this comparison also, the same pattern of interaction for subject group by play companion, reported above, was found. Urban children produced more Extended acts with peers than with siblings while agricultural children produced more Extended acts with siblings (there being no play with peers).

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*) Of interaction with family adults, 91.7% were with the mother for the agricultural group, 100% were with the mother for urban group.

TABLE 3

Extended acts by play companion

	Self	Peer	Siblings	Family Adult	Chi-square
A	5.00	—	4.85	2.54	*** 31.80
U	4.73	3.87	1.24	2.43	
U-test	*ns*	39**	28**	*ns*	

(**p<.01, ***p<.001, A : Agricultural; U : Urban).

This again shows that the predominated play companion in each group, and that the agricultural child-sibling interaction served the same function as did the urban child-peer interaction.

Ⅳ. Symbolic acts analysis

Symbolic acts comprised only 16.7 per cents of the acts observed for the urban group, and were only 6.7% of the total acts observed in the agricultural group, as shown in table 4. In addition, one-third of the subjects did not produce any symbolic acts at all. There was a smaller amount of symbolic play found for the agricultural children compared to the urban children. These results may be analogous to the results of the Western studies based on SES referred to in the introduction to this chapter.

TABLE 4

Symbolic acts

	Frequency	U-test	Occurrance rate	Chi-square	No. of Ss		Sign test
					Shown	Didn't	
A	2.69	57.5△	6.7	4.27△	17	6	*ns*
U	5.00		16.7		11	4	CR=1.81△

(△: .05<p<.10, A : Agricultural; U : Urban).

Ⅴ. Correlations between sub-categories

The results showed that there were differences in activities between agricultural children and urban children in ① types of termination, ② companions ③ symbolic acts. In the following part of this paper, correlations between these measures will be examined in order to further describe these differences (see table 5). It should be noted that these

coefficients are based on a small number of subjects, and thus are more suggestive of relationships between the variables, rather than conclusive.

TABLE 5

Correlation between categories

Category	Relationships	Group	r.	Signif. level
Within terminations	C × ID	A	.557	*
		U	.419	*ns*
		Total	.432	*
	IR × F	U	.706	***
	ID × F	A	.824	***
Termination vs. Interaction	IR (siblings) × Sibling (one-way)	A	.447	*ns*
	× Sibling (two-way)	A	.532	△
	IR (FA) × FA (one-way)	A	.856	***
	FA (two-way)	A	.645	*
Termination vs. Constituent acts	F × E	U	.647	**
	IR × E	U	.616	**
	IR (FA) × E (FA)	A	.552	**
	IR (siblings) × E (siblings)	A	.540	*
IR × Symbolic acts		A	.471	△
Symbolic acts × E		A	.584	*
		U	.331	*ns*
		Total	.397	*
IR × Duration (themes)		Total	−.356	△
Termination vs Solitary	SO × C	A	.521	△
	ID	A	.485	△
Solitary vs. Interaction	SO × Peers	U	−.089	*ns*
	× Siblings	A	−.226	*ns*
	× FA	A	−.328	*ns*
		U	−.625	**
Solitary vs. Level of Interaction	SO × one-way	A	−.159	*ns*
		U	.121	*ns*
		Total	−.102	*ns*
	SO × two-way	A	−.477	△
		U	−.327	*ns*
		Total	−.381	△
Within companions	FA × Peers	U	−.285	*ns*
	× Siblings	A	−.397	*ns*

(△ : $p<.10$; * : $p<.05$; ** : $p<.01$; *** : $p<.001$)
(FA : Family adults ; C : Closed ; F : Finish ; IR : Interrupted ; ID : Induced ; SO : Self/Object ; A : Agricultural ; U : Urban)

(1) Within the sub-categories of termination

"Closed" (C) correlated with "Induced" (ID) in the agricultural group ($t = 2.23$, $p<.05$). This suggests that the agricultural children who terminated activity themes by themselves were for the most part influenced by others "indirectly". "Finish" (F) was found to be correlated with "Induced" (ID) in the agricultural group and with "Interruption" (IR) in the urban group. Thus, it is suggested that goal-directed activities (Finish) occurred in different contexts for the two groups. That is, urban children may carry out tasks even though "Interrupted" by other persons, while agricultural children carry out their goals only when the influence of other persons was indirect.

(2) Correlations between types of termination and activity companions

Correlations between types of termination and activity companions suggest that in the agricultural group "Interruption" (IR) was related to the frequency of two-way interactions with family adults (mainly the mother and minorly the grandmother) (see table 5). This may indicate that in agricultural homes, two-way mother-child interaction leads the mother to interrupt her child's activities. This relationship was not found in the urban group.

(3) Inter-correlations between termination, Extended acts and Symbolic acts

Correlations between "Interruption" and "Extended" acts were found in both groups (see table 5). In the agricultural group, "Interruption" also was related to symbolic acts, and symbolic acts correlated with "Extended" acts.

To summarize the relations mentioned above, there were the following interactions between categories : ① IR–E–Symbolic, for the agricultural group ; ② IR–E–F, for the urban children. These are outlined in figure 4. These outlines suggest that the effect of "Interruption" differs for the two groups : for the urban children, "Interruption" does not have the effect of ending goal-directed activities ; however, for the agricultural children, "Interruption" tends to end goal directed activities by eliciting mutual interaction and elaboration of the children's acts. As pointed out by Singer (1973) relatively long periods

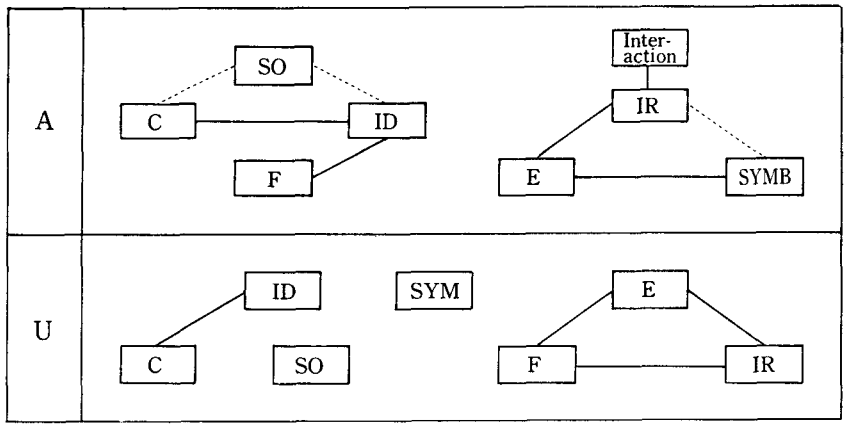

FIGURE 4 Schematic representation of the relationships between sub-categories —— Strong relation ····· Week relation
(C : Closed ; F : Finish ; IR : Interrupted ; ID : Induced ; E : Extended acts ; SYMB : Symbolic acts ; SO : Self/Object)

of undisturbed free time are a prerequisite for the unfolding of plots and themes which would be the essence of symbolic acts. Such free time will be available when adults (mother) regard children's play as a legitimate occupation. Thus, as shown in table 5, the result that agricultural children showed less symbolic play than urban children might be explained by this difference in the role of "Interruption" between two groups.

(4) Correlations between solitary activities and activity companions

An interacting negative correlation was obtained for the urban group between solitary activities and frequency of interaction with an adult family member. A similar correlation did not occur for the agricultural group and may indicate that urban mothers are more apt to let their children play on their own without interruption.

Overall the results indicate that urban children and agricultural children differ in their systems : for the urban children, there is, on one hand, mutual, two-way interaction with their mothers, and, on the other hand predominatedly one-way, non-comunicative interaction with peers. Agricultural children do not have such independent systems. Rather, their interactions with siblings and family adults occur together in one context.

(5) Correlations between solitary activities and types of termination

A trend in the data may have occurred with regard to solitary acts and types of termination. Some relationships approached significance and suggested that when agricultural children played alone they terminated their activity on their own (Closed) or through the indirect influence of others (Induced). Thus, agricultural children were somewhat independent of others in their solitary play. However, when interacting with others, their terminations were frequently by "Interruption".

Urban children's terminations do not show such possible correlations and thus in both solitary play and play with others, any kind of termination was equally like to occur.

CONCLUSION

This study has shown that there are differences between agricultural and urban children in their daily social interaction patterns, and within these, in the types of interactions that occur. The data in this study may be comparable with the results obtained in Western research on low SES groups ; however the children in this study come from a different physical environment (predominately low-population rural versus over-populated urban) than the children in those low SES groups.

A low level of symbolic play was found here for the agricultual children as has also been reported for low SES urban children in Western research (Smilansky 1968, Feitelson & Ross 1973, Rosen 1974, Rubin et al. 1976, Tizard et al. 1976, Smith 1977, Griffing 1980, Udwin & Shmukler 1981). The results of this study may suggest that the low level of symbolic play found for low SES children may be due to the nature of their social interaction patterns.

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