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ABSTRACT

This study recorded the pretend play behavior of a total of 22 boys and girls aged 20 and 26 months to determine the effects of age, sex, toy type, and order of toy presentation on the amount of pretending observed during two home visits. Each visit consisted of three segments: two play episodes of 10 minutes each and an intervening segment of approximately 40 minutes in which each child performed on standard cognitive tasks. During the play episodes each child was presented with high prototypical toys and less prototypical toys. An observer continuously tracked the child's activities on a tape recorder with a 10-second time base and a coded observation schedule; the tapes were transcribed to obtain for each play episode measures of "pretend frequency," "variation on pretend," and "total play activity." Results indicate that (1) although pretending with less prototypical toys was depressed when children were 20 months of age, it increased with age for both sexes; (2) with highly prototypical materials, girls' pretending increased between 20 and 26 months of age, whereas boys' pretending decreased; and (3) pretending increased as children became more familiar with the situation. These findings are discussed in terms of theoretical formulations which interpret early pretending as an index of the child's acquisition of mental representations which code objects, activities, and social rules. (GO)

Cognitive and Social Dimensions of Pretending in Two-Year-Olds

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Abstract

The study examined the pretend play of boys and girls between 20 and 26 months of age. Pretending was expected to vary as a function of toy-type (i.e. whether the play materials were highly prototypical objects such as cup-like cups, truck-like trucks, or baby-like dolls). Children's ability to pretend with less prototypical materials was expected to improve with age. On the basis of previous research, sex differences were expected to appear within this age range. The results were as follows: (a) Although less prototypical materials depressed pretending at 20 months (for boys more than girls), pretending with these materials increased with age for both sexes. (b) With highly prototypical materials, girls' pretending increased between 20 and 26 months of age, whereas boys' pretending decreased. In addition, the results indicate that pretending increases as children become familiar with the situation. The findings were discussed in terms of theoretical formulations which interpret early pretending as an index of the child's acquisition of mental representations which code objects, activities and social rules.

Cognitive and Social Dimensions of Pretending in Two-Year-Olds

A child pretends to drink out of an empty cup. He tips his head back as if to drain the last drop of liquid. Sometime later he pretends to drink out of a shell which he then uses to feed a doll. This typical sequence illustrates several noteworthy features of pretend behavior. First, a well-established behavior (drinking) is apparently disconnected from its customary content (food consumption) but retains many of its contextually relevant details. Second, neither a consumable substance nor a particular utensil appear to be necessary for its occurrence. Finally, the direction of the child's behavior shifts from feeding-self to feeding an inanimate representation of an animate object. Observers of young children generally agree that pretend is an intriguing phenomenon of early development--in part, because it parallels recognizable functional behaviors and, in part, because it increases dramatically in frequency and complexity during the second year of life. Extensive documentation of children's pretending during this period can be found in baby biographies and in observational studies (Valentine, 1937; Sinclair, 1970; Inhelder, Sinclair, Lezine & Stambak, 1972). In addition, Piaget's (1962) observations of his own children provide a finely detailed description of the early forms of pretending.

Although investigators have speculated extensively regarding cognitive aspects of early pretend (Stern, 1924; Bühler, 1930; Piaget, 1962), there have been relatively few attempts to develop experimental paradigms which would illuminate significant aspects of the cognitive components of this activity. In view of the paucity of research it is of interest that investigators using different procedures and research settings have noted a relationship between materials and pretending. For example, Pulaski (1970) found that 5-year-olds with a high disposition

for fantasy preferred minimally structured toys (such as clay and blocks), whereas children with low fantasy predispositions preferred highly structured toys (such as dolls and trucks). Hypothesizing that minimally structured materials would enhance pretend play, Pulaski (1973) reported that children between 5 and 8 years of age produced a greater variety of pretend stories when toys were minimally structured than when they were highly structured. Similar findings for pre-school children were reported by Phillips (1945).

However, there is some evidence from observational studies that in younger children, the relation between the structure of materials and pretend play is reversed (Furth, 1969; Fein & Clarke-Stewart, 1973). Piaget's early stages of pretend (Piaget, 1962) imply a progression from familiar functional objects to a wide array of new objects which are less similar to those of daily use. Markey (1935) noted that the play of the younger children in a group of 22-to 50-month-olds was dominated by the physical properties and functions of the materials they were using, while the older children adapted materials to the themes and purposes of play. For example, 2-year-olds "used sand with digging toys while older children might use sand as a make-believe lubricant for a make-believe train (tricycle)" (Markey, 1935). Smilansky (1968) noted a similar difference between the play of middle class and lower class disadvantaged children. The pretend play of the disadvantaged children was linked to toy replicas of things such as telephones, beds, or trucks whereas middle class children used a variety of things such as blocks, sticks and boxes to represent such objects. These findings suggest that the structure of materials, particularly their resemblance to prototypical objects (such as truck-like trucks or doll-like dolls) might influence pretend, and that the relation between materials and pretending might change with age.

Such a relation is of particular interest in view of several analyses of children's representational thinking (Stern, 1924; Buhler, 1930; Werner & Kaplan, 1964; Piaget, 1962; Furth, 1969). Indeed, according to these analyses, the significance of early pretending is that it marks the emergence of representational schemes which code information about the attributes of activities and objects. Whereas at an earlier period the child's behavior was governed by a functional understanding of immediate sensory information (a bottle is to drink milk from, a pillow is to sleep on), in pretending the child disassociates actions from the consequences which typically occur when these actions are performed. The sensorimotor contours of an activity--bottle to lips, head tilted back, sucking motions--represent a complete consumatory event in the absence of food or the desire for nourishment. With age, symbolic actions become increasingly independent of immediate physical stimulation. Presumably this development depends on the child's acquisition and representation of activity categories (such as "eating") and object categories (such as "cups" or "babies"). When a mental representation is sufficiently well-established, the physical presence of a particular object (such as a cup) with category matching attributes is no longer necessary to generate a representation of it. In pretending, the child uses condensed contours of an action to represent an object activity when the immediate object bears little resemblance to the imagined one (the child "drinks" from a leaf or "feeds" a stick) and even when no object is present at all (the child drinks from an empty fist, cf. Overton & Jackson, 1973).

One testable implication of this analysis which is consistent with observational data is that during the second year of life pretend play should become less dependent on the physical presence of highly prototypical objects--cup-like cups and doll-like dolls. Children should become increasingly able to assimilate a wide variety of objects to pretend themes. In the present study, materials which differed in their similarity to cup-like cups, truck-like trucks, or doll-like dolls were presented to children between the ages of 20 and 26 months in order to examine whether the

relation between the structure of materials and pretending varies as a function of age.

The social content of pretend play has also been of interest to developmental psychologists. Soviet researchers have emphasized the relation between the roles children enact in make-believe and the social roles and relationships of adults and children in the real world (El'Konin, 1969). According to this view, make-believe provides children an opportunity to practice and acquire the behavior patterns of significant others. Previous studies suggest that sex-appropriate behavior patterns may be among the earliest to appear. A number of studies of pre-school children have noted sex differences in children's doll play (Bach, 1945; Pintler, Phillips & Sears, 1946; McDowell, 1937). Sex differences have been documented for toy preferences (Benjamin, 1932; McDowell, 1937; Herring & Koch, 1930) as early as 12 months of age (Goldberg & Lewis, 1969). However, it is not clear when sex differences first appear in pretend play. The question is of interest because it may illuminate the relation between children's social experiences and their representational schemes.

Method

Subjects

The 28 children were selected from hospital birth records. There were 14 children (7 boys and 7 girls) at each age level (20 and 26 months). Of the eligible parents contacted, 78% agreed to participate. The children came from predominantly middle class homes. None of the fathers were unemployed and the fathers' occupations were about equally distributed among blue collar, white collar, business, and professional categories.

Procedure

Design. The study was a five factor design with repeated measures on two of the factors (toy type and intra-visit order). The study compared two ages (20 and 26 months), two toy types (highly prototypical toys "H" and less prototypical toys "L"), two sexes, two intra-visit, and two inter-visit orders. The intra-visit order (whether a toy set was presented first or second within a visit) was balanced for each subject (LH or HL), and the inter-visit pattern (LH-HL and HL-LH) was balanced across subjects. Each child was observed at home with his mother present. There were two visits approximately two weeks apart. Each visit consisted of three distinct segments: two play episodes of 10 minutes each (in which the procedure was identical, but the toys were different), separated by approximately 40 minutes of intervening tasks (e.g., word comprehension and word production items from the Bayley Scales of Mental Development) which were the same for all children. Thus the second episode occurred after the experimenter had been in the home for approximately an hour.

Materials. There were two toy sets, each containing 17 objects. The "highly prototypical" (HP) set contained 13 objects which were either familiar household things or toys (cup, metal spoon, plastic spoon, fork, bowl, crib, telephone, truck, mug, blanket, doll, doll bottle, comb). The 13 objects in the "less prototypical" (LP) set were matched by category (things for drinking, for eating, for sleeping) but lacked the detail of the highly prototypical counterparts..e.g., a bed and a truck were matched to two boxes of different sizes, the coffee mug was matched to a plastic container of roughly the same sizes, the coffee mug was matched to a plastic container of roughly the same size, the toy telephone was matched by a toilet paper tube balanced on two blocks, and the baby doll was matched to a stuffed cloth figure. The remaining four objects were identical in both sets (a hat, a doll-sized chair, pop beads and a kleenex).

Objects in the LP set were not preselected to be equidistant from their HP counterparts, and the dimensions along which these objects differed were not systematically varied. Indeed, some of the differences appeared small (e.g., a conventional metal tablespoon was matched to a metal measuring spoon) whereas other differences appeared substantial (e.g., a yellow comb was matched to a yellow cylindrical block). To determine the relative degree to which an HP object differed from its LP counterpart, adult subjects were asked to order the 13 object pairs with regard to the similarity of an LP object to its HP counterpart. Six adult subjects were asked individually to rank the 13 object pairs from most to least similar. A Kendall coefficient of concordance calculated for the six rankings ($W = .703$, $p < .01$), indicated that the adults were in close agreement.

Experimenters. Two female experimenters visited the home. One experimenter presented the toys to the child and administered the intervening tasks, while the other recorded the child's behavior. Although the same experimenters were present during each visit for all children, each experimenter observed half, and presented toys in half, of the total 112 play episodes. In addition, for half the children, the same experimenter presented the suggestions on visit 1 and 2, whereas for the other half, different experimenters presented the suggestions on visit 1 and 2. The experimenter's role was not changed within a visit. Although not a design factor, experimenter variations were evenly distributed over experimental conditions.

The initial five to ten minutes of each session were spent in helping the child feel at ease with the visitors. The experimenter or the child's mother showed the child a picture book while the other adults chatted. By the end of 10 minutes, the experimenter took the first set of toys from the suitcase, arranged them on the floor in a pre-determined way and invited the child to play with them. All children

responded to this invitation within a few seconds. Each 10-minute play episode began with two minutes of free play during which the experimenter sat near the child but did not participate in his play. During the remaining eight minutes of the episode the experimenter made five play suggestions at specified time intervals and in a fixed sequence (Moore, 1964): (1) Phoning: "Phone is ringing" (the experimenter dials and listens). "It's Daddy, Daddy wants to talk to baby." (E hands phone to child.) "Talk to Daddy." After 30 seconds, the experimenter says "Daddy wants to talk to dolly. Let baby talk to Daddy." (2) Feeding: "Dolly is hungry. The baby is hungry. Feed the baby." (3) Riding: "Dolly wants to go for a ride. Baby wants to go bye-bye. Take the baby bye-bye. Bye-bye baby." (4) Sleeping: "Now baby is sleepy. Baby is so tired. Put the baby night-night. Night-night baby." (5) Grooming: "Baby is dirty. Baby needs to be washed. Wipe the baby all clean."

The play suggestions were used to provide common anchoring themes across toy types and thus make the scaling task given the adult toy raters and the pretend task given the children roughly comparable. When making a play suggestion, the experimenter indicated or brought into view the appropriate toys for that particular play theme; for example, the experimenter indicated the toy truck while saying, "Dolly wants to go for a ride." If the child did not respond to the first verbal suggestion, it was repeated approximately 30 seconds later. Beyond this, however, the child was not coaxed into following the experimenter's requests and the experimenter did not demonstrate the suggested play theme.

For each of the play episodes the observer continuously orally tracked the child's activities on a tape recorder. A 10-second timer was attached to the recorder so that even though there was a time lag between the occurrence of an activity and the oral description, the relative timing sequence was preserved.

The observational language used to record the child's behavior consisted of about 50 core verbs which describe the child's use of objects (e.g., pushes truck, fingers doll, claps blocks) and his interactions with other people involving objects (e.g., gives mother doll, shows adult bottle). All of the child's behavior during the play episodes was recorded and transcribed. Actions, but not verbal labels, were scored "pretends" if they contained an element of make-believe. For example, a child's going through the motions of drinking from an empty cup was scored "pretend", but his pointing to an empty cup and saying "coffee" was not. A child's behaviors were coded "pretend" if they (a) involved treating something inanimate as though it were animate (feeding a doll), (b) resembled normal, functional activities but occurred in the absence of necessary materials (drinking from an empty bottle), (c) were not carried through to their usual outcome (putting on a hat, but not going outside, closing eyes, but not sleeping), or (d) were typically performed by someone else (brushing hair, dialing a telephone). Within a 10-second period a pretend was scored if there was either a change in the activity or a change in the object.

Measures

The four taped play episodes for each child were transcribed, the "pretends" coded and the following measures taken for each play episode: (1) Pretend Frequency was the sum of all those behaviors coded "pretend" within a 10-minute observation period. (2) Variation of Pretend was the number of pretend activities which were unique with regard to the action, objects, or relevant vocalizations involved. For example, stirring with a spoon in a red cup five times was scored as one variation, and so was stirring once with a spoon in a yellow bowl. Also pretending to drink from an empty cup with accompanying noises was scored separately from

drinking "silently", and saying, "Hi, Daddy," on the toy telephone was scored differently from saying, "No, I can't." Since pretending at two years lacks the thematic elaborativeness found in older children, the variation measure was an attempt to approximate the thematic diversity measure used by Pulaski (1970) and Phillips (1945) for older children. (3) Total Play Activity was the sum of the child's coded activity-object units (i.e. a change of activity or a change of object), whether make-believe or not, during the 10-minute play episode. This score served as a baseline of activity level against which to assess a child's pretend activity.

Observer agreement was determined from tape recorded observations of four 20-minute filmed play sequences. The average observer agreement (calculated as the per cent agreement over the total number of coded behaviors) for total activity was 80% and for pretend activities was 87%.

Results

A multifactor analysis of variance with repeated measures (Winer, 1962) was performed on each of the dependent measures. The between subjects factors were age, sex, and inter-visit order (LH-HL or HL-LH), and the repeated factors were type of toy and intra-visit order (first or second). Pretend Frequency and Variations of Pretend were highly correlated (r = .88, p = .001) and the results of the analysis of variance revealed similar findings for both measures. For economy of presentation, results are presented only for the frequency measure.

Age, Sex, and Toy Type Effects. The results of the repeated measures analysis of variance for pretend frequency scores are presented in Table 2. The main effects of toy type, age, and sex were all significant (in each case, $p < .01$). Children pretended more with HP toys than with LP toys. Older children

pretended more than younger children and girls pretended more than boys. However, significant interactions between age and sex ($p < .05$) and among age, sex and toy type ($p < .002$) qualify the main effects. For these factors, there were no significant main effects or interactions for Total Play Activity scores.

Insert Table 1 about here

As can be seen from Figure 1, boys and girls followed strikingly different lines of development from 20 to 26 months with regard to the influence of toy type. In order to examine the hypothesis that pretending with less prototypical toys would increase with age, a separate 2 x 2 analysis of variance (Age x Sex) was performed for each of the toy types. With the less prototypical toys, there were significant age and sex effects ($p < .01$), and the interaction was not significant. Thus, although the girls pretended more than the boys at each age level, the lines of development were parallel for the two sexes. Such was not the case for highly prototypical toys. Here, the interaction was significant ($p = .001$), but the main effects were not. Individual comparisons using the Scheffe test indicated that the boys' pretend significantly decreased ($p < .01$) from 20 to 26 months, whereas the girls nearly doubled the frequency of their pretend play ($p < .01$). At 20 months there was no difference in the amount boys and girls pretended with highly prototypical toys, but by 26 months girls pretended more than twice as much as boys ($p < .01$). Thus, with these toys boys and girls showed divergent lines of development. Additional comparisons revealed that at 20 months both boys and girls pretended more with highly prototypical than with less prototypical toys ($p < .01$). By 26 months the situation was almost

reversed, with girls pretending much more with highly prototypical than with less prototypical toys ($p < .01$), and toy type making no difference in older boys' pretend play.

Insert Figure 1 about here

In summary, the significant Age x Sex x Toy Type interaction reflected the following pattern of results: (a) With less prototypical toys, a parallel increase in pretend play for both sexes but (b) with highly prototypical toys, a large increase in pretend play for girls, and a decrease for boys.

Intra-Visit and Inter-Visit Order Effects. By including two order factors (inter-visit order, LH-HL or HL-LH and intra-visit order, first or second), it was possible to assess the impact of an unusual and unfamiliar social situation (the observation session itself) on the children's play in general and pretend play in particular. As indicated in Table 2, the intra-visit order factor significantly influenced both the amount of make-believe play, $F(1,20) = 42.19$, $p < .001$, and the amount of total play activity observed, $F(1,20) = 8.28$, $p < .01$. Children played and pretended more on the second play episodes of each observation visit. The fact that more play and more pretending were observed during the second play episodes suggests that initial unfamiliarity may have had a stronger inhibiting effect than later fatigue and satiation. An interaction between age and intra-visit order was also found to be significant for pretend scores ($p < .05$). At 26 months the difference between the total pretend observed during the second and first play episodes (13.58) was greater than the difference at 20 months (6.88), indicating that the intra-visit effect was more powerful for the 26-month-olds.

Insert Table 2 about here

The inter-visit factor was found to interact significantly with sex and toy type in determining the frequency of a child's make-believe play ($p = .01$), as well as the level of his overall play activity ($p = .02$). Inter-visit order made no difference on the amount boys pretended or played with less prototypical toys nor the amount girls pretended or played with highly prototypical toys. But with the specific order LH-HL, boys pretended and played slightly more with the highly prototypical toys and in the order HL-LH girls played less with the less prototypical toys than they did if they had order LH-HL. Although the interaction suggests that situational familiarity might vary as a function of sex and toy type, the number of observations in each cell was small and the differences may not be reliable. Additional analyses failed to reveal significant overall differences between visit 1 and visit 2, or between same and different experimenters on visit 2.

Proximity Ratings

In the present study, it was hypothesized that a child's ability to use an object in make-believe play would be influenced by the degree to which it resembled a highly prototypical object. Two similarity ratings were calculated for each HP-LP pair. The first rating was based on the average adult rank ordering of the similarity of an LP object to its HP counterpart for the 13 objects which differed between toy sets. The second rating, based on children's differential pretending for each HP-LP pair, was calculated as

the proportion of the difference between the highly prototypical object and its less prototypical counterpart to the sum of the pretend-play with these two objects (HP-LP/HP+LP) averaged over children. Rank order correlations between the two proximity ratings were significant ($r = .55$, $p < .05$) thus lending support for the hypothesis that an object's distance from a highly prototypical exemplar influences make-believe play.

Discussion

In the present study it was assumed that (a) children construct representations of activities and things, (b) these constructions free action from the external demands of particular things, and (c) pretending reflects the child's ability to use mental representations to transform immediate physical stimulation. When pretending to drink from an empty shell the child temporarily transforms the shell into a full cup and when he feeds a doll from the shell he adds a second transformation, that of representing an animate object by an inanimate one. A child presumably becomes capable of performing more of these transformations and combining them in increasingly complex ways as he grows older. In the present study, less prototypical objects were presumably those which required additional transformations in order to be used in pretending. Children's ability to assimilate less prototypical materials to pretend themes was expected to improve with age. The results supported this expectation. With less prototypical toys, pretend increased with age equivalently for both sexes and children's pretending was significantly correlated with adult ratings of the degree to which a less prototypical object resembled its highly prototypical counterpart. With highly prototypical toys, however, the sex of the child was a powerful factor. No sex differences appeared at 20 months, but there was a large one at 26 months: boys' pretend declined whereas that of girls nearly doubled.

The results thus display a pattern of interaction which suggests that the toy conditions reveal different aspects of children's development. If one supposes that at about two years of age a child is being exposed to different sex-role behavior patterns and possibly to training in sex-appropriate play patterns, one would expect such experiences to be revealed in his play, particularly with objects most related to daily life experiences. It may, therefore, be useful to think of the child's mental representations as gradually becoming coded according to these socialization experiences. If the code for social experiences is focused on objects rather than activities (e.g., boys learn that they may feed a toy dog but not a baby doll), the striking divergence between boys and girls with highly prototypical toys might reflect children's socialized toy preferences. In the sense that children's mental representations code things according to social rules as well as physical attributes, sex differentiation may be mediated by cognitive factors (Kohlberg & Zigler, 1967).

In contrast, play with less prototypical materials shows a parallel increase for boys and girls. Apparently, the activity element of pretend does not undergo sex typing between 20 and 26 months. Increased pretending with less prototypical materials might reflect changes in the ability to manage the transformational aspects of pretend and sex differences with these toys might reflect the girls' precocity in symbolic activities. Of particular interest for future research is the possibility that children's pretending with less prototypical materials can circumvent the social prohibitions associated with objects (e.g., a stick becomes "a somebody" who can eat and whom it is permissible to feed).

Pretend play poses some unusual and difficult problems for developmental analysis. On the one hand, when a child acts on an object, the action and the object appear to be a unitary event. Yet in pretending, the relation between action and object undergoes an apparent disconnection such that the action

performed by the child on an observable object (if there is one) may violate rules about how objects are meant to be used. In a sense, pretending seems to dissolve the external contingencies between actions and objects while maintaining their internal relations. Sex differences found in the present study suggest that children may acquire two rule systems: one for activities and one for things. With highly prototypical objects, the relation between activities and things is closed. A baby doll is a baby doll, and if baby dolls are forbidden objects for boys, boys will avoid feeding them even though the pretend activity of feeding has not itself been forbidden. Presumably less prototypical objects permit the child to select an object representation (a puppy dog, a boy) which is in accord with his social training. Although pretending has often been viewed theoretically as a converging cognitive-affective system (Peller, 1952; Piaget, 1962) the analysis of its cognitive and affective components has been difficult to pursue. The results of the present study suggest that cognitive and affective factors may influence the way children code representations of things.

The present findings extend those of other investigators who report that people and situations interfere with play (Ainsworth and Bell, 1970) and that the suppressive effect decreases between two and three years of age (Maccoby and Feldman, 1972). The design of this study made it possible to assess the influence of situational "strangeness" on play by including two kinds of familiarization conditions (i.e., two visits and two play episodes within each visit). Irrespective of toy type, children played more during the second play episodes of each visit but the increment was more pronounced with 26-month-olds. Although play is inhibited when the child is in an unfamiliar situation, the older children show a more pronounced recovery. In the present study, the conversion from strange to familiar occurred after the experimenters had been

in the home and interacting with the child for nearly an hour. However, it did not carry over to the next visit two weeks later except, perhaps, in complex relation with sex and toy type. Thus, although an extended experience with a strange person or a strange situation may turn "strange" into "familiar" the effect is apparently not maintained or enhanced by a second contact. Yet a stable shift from strange to familiar is a fundamental social experience for young children and an important problem for future investigation. Clearly, pretend play is sensitive to situational variables (Sears, 1947) but the interconnections between cognitive, social, and developmental factors which influence situational sensitivities are in need of further exploration.

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Footnote

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TABLE 1

Analysis of Variance of Pretend Frequency (Major Findings)

Source	df	MS	F
Age	1	1737.19	8.05**
Sex	1	2040.43	9.46**
Age x Sex	1	910.15	4.22*
Subjects	20	215.69	
Toy	1	2946.51	26.12***
Age x Sex x Toy	1	1445.86	12.82**
Sex x Inter-Order x Toy	1	930.00	8.24**
Toy x Subjects	20	112.81	
Intra-Visit Order	1	2870.02	42.19***
Age x Intra-Order	1	306.67	4.51*
Intra-Order x Subjects	20	68.02	

* $p < .05$

** $p < .01$

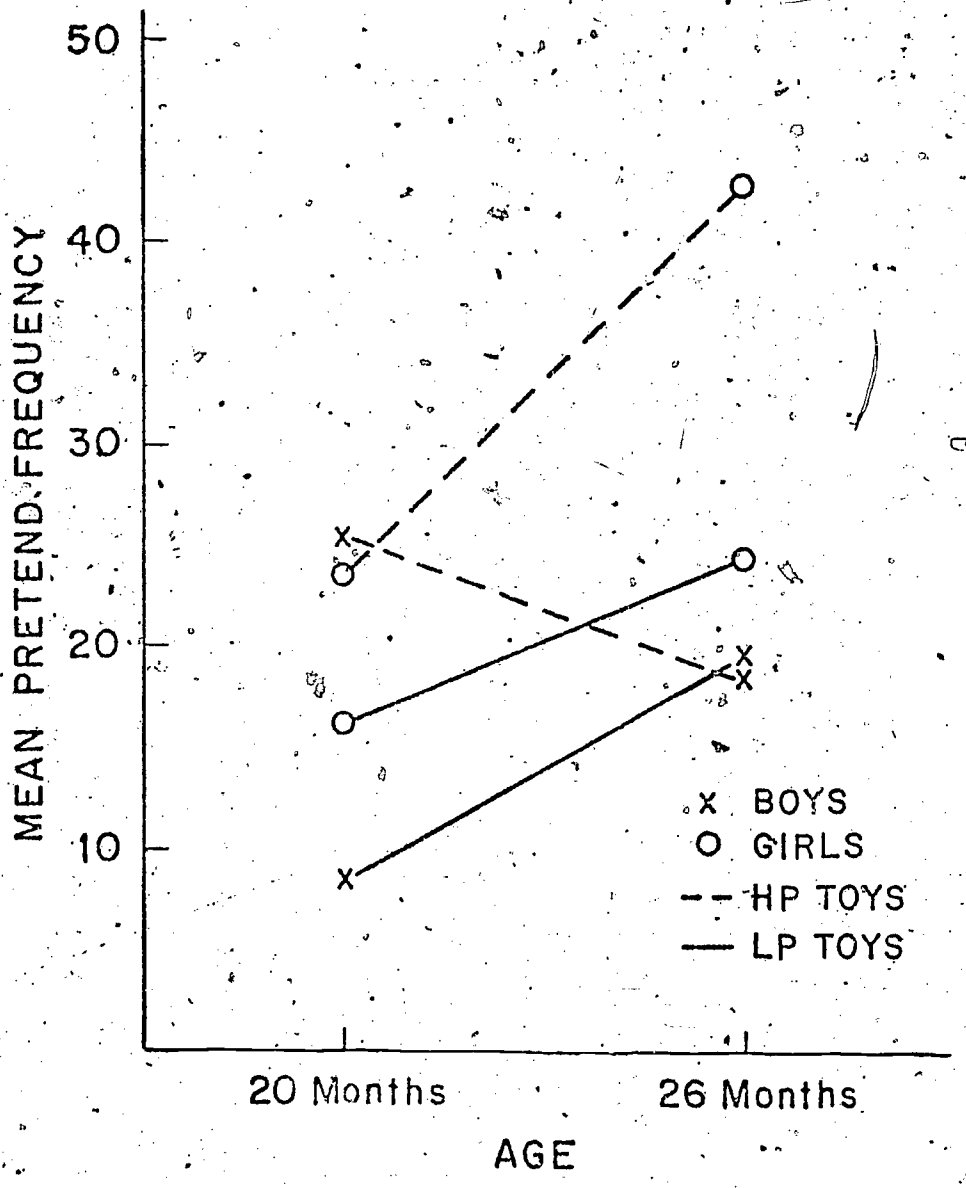
*** $p < .001$

TABLE 2

The Effect of Intra-visit Order and Age on Pretend Frequency:

	Play Episode		
Age	1st	2nd	Means
20 months	14.98	21.86	18.42
26 months	19.59	33.17	26.38

Figure 1. Mean scores for Pretend Frequency as a function of age, sex, and toy type.


50
40
30
20
10
MEAN PRETEND FREQUENCY
X BOYS
O GIRLS
-- HP TOYS
— LP TOYS
20 Months
26 Months
AGE