

From  
Erica  
Elder

## Preschool Children's Use of Objects in Symbolic Play

Joy L. Elder and David R. Pederson

University of Western Ontario

ELDER, JOY L., and PEDERSON, DAVID R. *Preschool Children's Use of Objects in Symbolic Play*. *CHILD DEVELOPMENT*, 1978, 49, 500-504. Developmental differences in children's reliance on the presence of a substitute object and in the importance of similarity between the substitute object and its referent were investigated. Children at 3 age levels (2½, 3, and 3½ years of age) were asked to perform actions under 1 of 3 substitution conditions: (1) with similar substitute objects whose general physical dimensions were similar to those of the reference objects; (2) with dissimilar substitute objects, which were physically unlike the referent objects and had their own particular use; or (3) with no object present. The results indicated that children under 3 years of age were most dependent on the presence of substitute objects which resembled their referents. 3½-year-old children were able to pretend equally well in all of the substitution conditions.

Symbolic play has received increased attention in recent years as a medium for the investigation of cognitive development of preschool children. Piaget (1962) and Vygotsky (1967) have linked the emergence of symbolic play to the development of representational skills. In the present study, developmental differences in the child's symbolic use of objects were investigated. Specifically, the two factors examined were (1) the presence of objects in pretending activities, and (2) the similarity between the substitute objects and those objects they represented.

Vygotsky (1967) suggests that symbolic play is part of the process of liberating thought and meaning from concrete objects. He characterizes the development of symbolism as moving from action in response to objects present in the child's perceptual field to action generated by ideas. Early in the development of representational skills, the perception of an object predominates over its meaning. In the pretending situation, the signifier (e.g., a stick) acts as a pivot in separating meaning (e.g., spoon) from the real object (a spoon). Complete separation of object and meaning is not possible initially, so that the child requires a substitute object (concrete signifier) to be used in defining the action. When the child is able to allow the stick to become a spoon,

meaning is starting to predominate over, but is not yet completely free from, the object. The child is still dependent on the presence of some appropriate physical cues to retain the meaning of spoon. Vygotsky contends that in symbolic play the child practices substitution, first by using objects which are similar to the object to be represented, and later by pretending without any object present. For Vygotsky, this practice is essential to the emergence of true symbolism. When true symbolism has developed, meaning is independent of objects, so that the child is able to operate with arbitrary signifiers. This developmental process of distancing between signifier and referent object is also noted by Bruner (1964), Piaget (1962), and Werner and Kaplan (1963).

To date, there have been few empirical investigations of children's use of objects in pretend situations. In a study of developmental differences in the representation of absent objects, Overton and Jackson (1973) found that, with no object present, 3- and 4-year-old children used part of their body to represent an absent object, whereas 8-year-old children demonstrated symbolic use. For example, young children used an extended finger as a toothbrush; older children pretended to hold the absent toothbrush. These results are in keeping with Vygotsky's suggestion that chil-

This article is based on a M.A. thesis by the first author, supervised by the second author. The research was supported in part by a grant from Canada Council. Requests for reprints should be addressed to Joy L. Elder, Department of Psychology, University of Western Ontario, London, Ontario, Canada, N6A 5C2.

dren require a concrete signifier before they can represent objects symbolically. Fein (1975) manipulated similarity between the signifier and the referent object using either highly realistic representations or less prototypical substitutes. In pretending sequences which involved the use of two objects, 2-year-old children pretended more readily when at least one of the substitute objects was realistic than when both were the less prototypical substitutes. Thus it appears that physical similarity between signifier and referent object is an important determinant of the young child's ability to pretend.

In the present study, children of three age levels, who had demonstrated appropriate uses for a set of objects, were asked to perform these same actions with objects which varied in similarity to the referent object, or with no object present. It was predicted that there would be an interaction of age and substitution condition such that the youngest children would show the greatest differences in performance across conditions, whereas these differences would be minimal with the oldest group.

## Method

### Subjects

A total of 72 children participated in this experiment, 24 from each of the following age levels: 2½-year-olds (range 2-6 to 2-11), 3-year-olds (range 3-0 to 3-5), and 3½-year-olds (range 3-6 to 3-11). Four boys and four girls

at each age level were randomly assigned to each of the three experimental conditions.

### Materials

The pretest materials were six realistic objects selected on the basis that they would be familiar to preschool children: comb, telephone, cup, hammer, shovel, and pitcher. Two substitute objects were chosen for each realistic object, one of which was similar to the realistic object, the other dissimilar. The criteria used in selecting similar objects were that they resemble the realistic object in size and general shape and have no defined meaning (i.e., they be unstructured). The criteria for dissimilar objects were that their general shape be different from the realistic object and that they have a specific use of their own which was known to the child to be different from that of the realistic object. Descriptions of the realistic and substitute objects appear in table 1.

### Procedure

*Pretest.*—All children were pretested to determine if they were familiar with the objects to be used and could perform the appropriate activity with each realistic object (e.g., combing hair when presented with a comb), and to ascertain if the child understood the meaning of "pretend." Each child was tested individually by a female experimenter. The subject was asked to point to each realistic object as it was named by the experimenter and to demonstrate its use ("Show me what you do with a comb"). In the second part of

TABLE 1  
DESCRIPTION OF MATERIALS USED IN THE PRETEST AND IN THE  
SIMILAR AND DISSIMILAR OBJECT SUBSTITUTION CONDITIONS

PRETEST (Realistic)	OBJECT SUBSTITUTION CONDITION	
	Similar	Dissimilar
Comb (15 cm long)	Flat piece of wood (15 cm × 2.5 cm × .5 cm)	Rubber ball (6.5 cm diameter)
Fisher-Price toy telephone.	Block of wood (15 cm × 10 cm × 3.5 cm) with a second block (17 cm × 3.5 cm × 2 cm) placed across the first	Stainless steel toy saucepan
Plastic cup.	One half of a plastic eggshaped container	Plastic toy guitar (20 cm long)
Plastic shovel	Flat piece of wood (26 cm × 5 cm × .5 cm)	Small Fisher-Price car
Pitcher (20 cm high)	Brown box (18 cm × 13 cm × 5 cm)	Hairbrush
Hammer	Tinkertoy stick (26 cm long), with a cog (3.5 cm diameter) fastened to one end	Plastic apple (natural size)

## 502 Child Development

the pretest, subjects were asked to pretend they were an animal (dog or cat). Seventy-nine children were pretested, of whom seven failed to perform one or more of the pretest items and were not included in the study.

Following the pretest, all realistic objects were removed from the table and the substitution trials began.

### Substitution Conditions

**Similar substitution.**—Children in this condition were given the following instructions: "We're going to play some pretend games today. I have some things here and I'm going to ask you to pretend they are something [first similar substitute object is placed on the table]. Let's pretend we have a [for example] comb here. You pretend that you're using the comb." Each of the six similar substitute objects was presented individually, and the child was asked to use it to perform the activity appropriate to its designated referent object, for example, to comb his/her hair with the flat piece of wood (see table 1). Objects were presented in randomly determined order.

**Dissimilar substitution.**—The procedure and instructions in this condition were the same as those outlined in the Similar condition with the following modification. The dissimilar object was placed before the child and he/she was instructed to pretend that it was its realistic counterpart (see table 1). Following this, the child was asked what the dissimilar substitute object really was and to demonstrate its appropriate use.

**No object present.**—In this condition, the child had no objects present and was asked to pretend he/she had (e.g.) a comb and was using it.

**Scoring procedure.**—The criterion for a satisfactory pretending response in the Similar and Dissimilar conditions was that a recognizable portion of the action sequence be performed using the substitute object. In the No object condition, an acceptable response consisted of performing the action while either pretending to hold the absent object or representing it with part of the body. Children were given one point for each correct pretending response, for a total individual score between 0 and 6. Reliability was assessed by calculating the percentage of agreements between the experimenter and a second judge in scoring the responses of the first 10 subjects, who represented all three age groups. Interjudge reliability was 98%.

## Results

Means and standard deviations for pretending scores for each age group, under the three substitution conditions are presented in table 2. Cochran's test of variances (Kirk 1968) indicated that the assumption of homogeneity of variance was satisfied,  $C(9,7) = 0.248$ ,  $p < .05$ , allowing the data to be analyzed using a 3 (Age)  $\times$  3 (Substitution condition) between-subjects analysis of variance.

Significant main effects were obtained for Age,  $F(2,63) = 22.86$ ,  $p < .001$ , and for Substitution condition,  $F(2,63) = 17.15$ ,  $p < .001$ . As expected, performance improved as a function of age. Collapsing over age groups, scores were higher in the Similar condition ( $\bar{X} = 5.75$ ) than in either the Dissimilar ( $\bar{X} = 4.00$ ) or No object conditions ( $\bar{X} = 4.25$ ).

There was also a significant Age  $\times$  Substitution condition interaction,  $F(4,63) = 4.52$ ,  $p < .003$ . Newman-Keuls tests (Kirk 1968) were performed on this interaction to determine if the predicted developmental differences across substitution conditions were present. Results of these tests indicated that for the 3½-year-old group, there were no significant differences across substitution conditions. Children in the 3-year-old group performed significantly better in the Similar condition than in the No object condition ( $p < .05$ ), but their scores in the Dissimilar condition were not reliably different from their scores in the Similar or in the No object condition. The youngest age group (2½-year-olds) performed significantly better in the Similar condition than in the Dissimilar ( $p < .01$ ) or No object ( $p < .05$ ) conditions. Their scores in the No object condition were significantly higher than those in the Dissimilar condition ( $p < .05$ ).

TABLE 2  
MEANS AND STANDARD DEVIATIONS FOR  
PRETENDING SCORES AS A FUNCTION OF  
AGE AND SUBSTITUTION CONDITION

AGE GROUP	SUBSTITUTION CONDITION		
	Similar	Dissimilar	No Object
2½	5.38 (1.06)	1.88 (.99)	3.25 (1.67)
3	5.88 (.96)	4.63 (1.06)	4.00 (1.60)
3½	6.00 (.0)	5.50 (.76)	5.50 (1.07)

NOTE.—Numbers in parentheses = standard deviations. Maximum score = 6.

Across-age-group comparisons indicated no significant differences due to age in the Similar condition. In the Dissimilar condition, there was no significant difference between the two oldest groups, but there was a significant difference between the oldest and youngest groups ( $p < .01$ ), and between the middle and youngest groups ( $p < .05$ ). In the No object condition, the oldest group performed significantly better than both the middle ( $p < .05$ ) and the youngest ( $p < .01$ ) groups. There was no significant difference between the two younger groups.

Given that five groups of children received almost perfect scores (the oldest group across all three conditions, and the two youngest groups in the Similar condition), it might be argued that the Age  $\times$  Substitution condition interaction was due to this ceiling effect. In order to assess this interpretation, a second analysis of variance was done on the scores of the two youngest groups in the Dissimilar and No object conditions. A significant main effect was obtained for Age,  $F(1,28) = 11.78$ ,  $p < .002$ , with performance improving as a function of age. There was no significant main effect for Substitution condition,  $F(1,28) = 0.54$ ,  $p > .10$ . The Age  $\times$  Substitution condition interaction was again significant,  $F(1,28) = 4.16$ ,  $p < .05$ . In view of the fact that the second analysis also showed a significant interaction even after those groups in which there was a ceiling effect had been eliminated, the discussion of these results will be based on the first analysis which included all of the data.

### Discussion

The results of the present study support the hypothesis that there are developmental differences in the child's dependence on the presence of a substitute object and in the importance of similarity between that object and the referent object in pretending sequences. Age differences in the No object condition are consistent with Vygotsky's (1967) analysis of the development of representational skills. With 3½-year-old children, the meaning of an object or action is firmly enough established so that the activity could be performed in the absence of the object. Children under 3½ years of age are in a transitional period where appropriate representations could be made on some trials, but at a significantly lower level of correct responding. These younger children may not have a clear enough representation

of some objects to allow them to represent them consistently in a symbolic sequence without the aid of a concrete object to define the action.

The purpose of the Similar and Dissimilar conditions was to assess developmental differences in the importance of similarity between the substitute object and its referent. The fact that all three age groups obtained near perfect scores in the Similar condition suggests that even the youngest children had well enough established representations of the referent objects that the cues provided by the similar substitute objects were sufficient to evoke the appropriate responses. Children over 3 years of age performed equally well in the Similar and Dissimilar conditions; thus similarity between substitute and referent objects does not appear to be important beyond this age. The 2½-year-old age group, however, had significantly lower scores in the Dissimilar condition than in the Similar condition. Since all of these children performed some correct responses in the Dissimilar condition, their low level of responding was not due to lack of comprehension of what was required. For the 2½-year-old children, the physical properties of the object determined what could be done with it. When given a dissimilar object which they were asked to pretend was something else, they frequently responded by using the object according to its own appropriate use. For example, when presented with a car which they were asked to pretend was a shovel, many of them drove the car back and forth across the table. In addition, refusal to perform the action sequence requested was accompanied, in many cases, by comments such as "I can't. It's a car." The tendency of young children to respond on the basis of what is perceived is interpreted by Luria (1959) as an inability to allow speech to direct behavior, particularly when there are conflicting cues present. At 2½ years of age children appear unable to inhibit established motor responses to the dissimilar objects and to substitute what is seen to mentally initiated activity.

It should be noted that, in the present study, dissimilar substitute objects differed from their referents on two dimensions: physical attributes and function. Further investigation is necessary to determine whether one or both of these variables is important to the pretending process.

## 504 Child Development

### References

- Bruner, J. S. The course of cognitive growth. *American Psychologist*, 1964, **19**, 1-15.
- Fein, G. A transformational analysis of pretending. *Developmental Psychology*, 1975, **11**, 291-296.
- Kirk, R. E. *Experimental design: procedures for the behavioral sciences*. Belmont, Calif.: Brooks/Cole, 1968.
- Luria, A. R. The directive function of speech in the development and dissolution, I. *Word*, 1959, **15**, 341-352.
- Overton, W. F., & Jackson, J. P. The representation of imagined objects in actions sequences: a developmental study. *Child Development*, 1973, **44**, 309-314.
- Piaget, J. *Play, dreams and imitation in childhood*. London: Routledge & Kegan Paul, 1962.
- Vygotsky, L. S. Play and its role in the mental development of the child. *Soviet Psychology*, 1967, **5**, 6-18.
- Werner, H., & Kaplan, B. *Symbol formation*. New York: Wiley, 1963.