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BUILDING AND PRETENDING BETWEEN CHILDREN

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by

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Abstract

BUILDING AND PRETENDING BETWEEN CHILDREN

by

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This study was designed to contrast and compare the play performances of builders and pretenders. It was hypothesized that these two groups of players would differ in the type and content of their social interaction and speech. Another goal of this research was to investigate whether the social, conversational, and behavioral competence of peers in these two forms of play depend on different types of knowledge. It was also hypothesized that whereas event knowledge (Nelson & Gruendel, 1979) supports peer competence in pretend play, skill in digital mapping (Gardner & Wolf, 1983) underlies competent social constructional play.

Forty eight same-sex, preschool dyads (M= 58.2 months, SD= 5.9 months) were randomly assigned to either a building or pretend condition. The study employed a pretest, model/control, posttest design. Pretest builders played with constructional materials, pretenders in a pretend farm setting, for 6 minutes.

Trained pretenders (12 dyads) observed an adult model a script for playing "farmland", while trained builders observed a procedure for building towers. Players in each condition were assigned to either a model or control group. Control groups engaged in other activities for a similar period of time. Following this, all pretenders were instructed to "play farmland", all builders to "build towers". All play sessions were videotaped. Transcripts of peer talk and coding of behavior, talk and social interaction provided the data.

Major differences were found between the behavior of builders and pretenders and in the forms of knowledge used to structure these two forms of play. Pretenders' play was more social, builders' play more solitary. Builders associated, pretenders collaborated. For the pretest builders, 1/3 of their social interaction was reality-based object play, while pretenders engaged in more fantasy and more of their speech was devoted to specifying plans for pretense. For builders, material ownership talk was more prominent.

There were both cross-domain and domain-specific changes in the symbolic performances of the players between their first and second play sessions. All groups engaged in significantly more interaction focused on play. Both model and control pretenders engaged in more fantasy and role-taking in their posttest play.

Adult-modeling of event and procedures induced domain-specific changes in the content of builder and pretender play. Trained builders engaged in more three-dimensional depiction. Trained pretenders engaged in more symbolic play. Results are discussed in terms of the general and domain-specific processes which influence the social symbolic performances of peers.

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Building and Pretending Between Children

When a young child is asked, "What makes him your friend?" the answer "We can play" contains a whole world that we are just beginning to discover.

(Gottman, 1983, p.76).

In homes and preschool classrooms, children in Western cultures are provided with special materials for play. Toy stores are stocked with items designed to encourage fantasy play. Child-sized kitchen appliances, rubber fruits and vegetables and play hats are items offered to preschoolers for use in dramatic play. Another section of a toy store contains items marketed as building and constructional toys. These materials range from the classic Lincoln Logs and Tinker Toys to the more futuristic Star City and Great Groovies building sets.

When two children play with pretend or constructional materials, they engage in a complex set of activities. Builders manipulate and arrange their materials in various configurations. Pretenders change the realistic identities of objects, people and places and alter given meanings to create a make-believe world. Beyond this, we have very little knowledge of what builders and pretenders do and say in these two forms of play.

Dyadic interaction accounts for most of the child's social encounters in the preschool years (Hartup, 1983), and previous research suggests that knowledge of the social interaction of the players is essential to understanding play (Parten, 1932; Bakeman & Brownlee, 1980; Moore, Evertson & Brophy, 1974). Interaction during peer play may range from being non-social, where players ignore each other, to highly collaborative, where each player works on a different task related to a common goal. Previous research also shows that during a session of dyadic play, the content of children's social interactions includes attention to ownership of play materials, manipulation and exploration of play materials, and the creation and maintenance of fantasy (Seidman, 1983b). We now realize that language is the primary vehicle used by older preschool children to communicate the purpose and meaning of their pretend play (see Bretherton, 1984). Despite the fact that constructional play is the "most common form of activity in most preschool and kindergarten classrooms "(Rubin, Fein & Vandenberg, 1983, p.227), there is virtually no research on this type of play. Current research on peer play suggests that any attempt to describe the differences between the play of builders and pretenders must analyze the form and content of players' social interaction and social speech.

One of the major goals of this research is to contrast and compare the play performances of builders and pretenders. These

players' symbolic play performances are alike in that both forms of play entail social speech and interaction which is directed toward particular interactive goals. Thus, documentation of the differences between builders and pretenders on these variables will provide further understanding of the unique and common features of these forms of social play.

The second goal of this research is to investigate the knowledge basis for children's social and conversational competence within these forms of play. In terms of social pretense, there is ample evidence that script or schema knowledge, event representations of familiar events, provides preschool dyads with a structure that supports and organizes their joint talk and behavior in play (Garvey & Berndt, 1975; Nelson & Gruendel, 1979; Wolf, 1983; Seidman, 1983; Corsaro, 1983; Nelson & Seidman, 1984). Further, young children can relate organized, sequential reports of the rules for make-believe games (Evan & Rubin, 1983) and report particular procedures for dramatizing playing school, doctor, and going on a trip (Nelson, Seidman & Gruendel, in preparation). Little is known about social constructional play, although it is known that the ability to model a particular configuration (digital mapping) is an important skill in advancing an individual's constructional play abilities (Gardner & Wolf, 1983).

There is some evidence that adult-modeling of pretend play sequences or scripts for play increases the complexity of subsequent play relative to a child's solitary spontaneous play performances (Watson & Fisher, 1980; Fenson & Ramsay, 1981; Fenson, 1984; Bretherton, O'Connell, Shore & Bates, 1984). Since no control groups were employed in these studies, it is not known whether prior spontaneous play experience with the materials and/or the modeling of scripts for play contributed to the observed changes.

Adopting a modeling paradigm to the study of the dyadic play of preschoolers will provide a great deal of information on how what children know relates to what they do and say in play. In particular, a comparison of the dimensions of change between the spontaneous and posttest play of model and control players will detail the aspects of play most directly influenced by the prior experience of playing with a peer in the same play context. Comparing the mean pre and posttest performance of the players will provide additional information on the unique properties of the two play forms. Contrasting the effect of play training will identify the relationship between event and procedural knowledge and social play.

It is expected that modeling will induce a greater amount of and more complex fantasy play for pretenders and object/constructional play for builders. These results will provide

strong evidence for the centrality of event knowledge in social symbolic play, and of digital mapping in social constructional play.

Cognitive Views of Symbolic Development and Play

The symbolic performances of young children have captured the interest of developmentalists throughout this century. In particular, the study of children's play was considered a window to preschoolers' social (Parten, 1932; Garvey, 1974), language (Piaget, 1932; Nelson & Gruendel, 1979) and cognitive development (Vygotsky, 1978; Werner & Kaplan, 1963; Gardner, 1983).

Different theorists variously interpret the cognitive and developmental significance of play. Most relevant to this research are models which conceptualize play within a more general theory of symbolic development. One of the more difficult aspects of comparing various theories of symbolic development is that there are no shared definitions. Therefore, it is helpful to establish common meanings for representational terms before alternative views of symbolic development are presented.

Play is a general term, and is herein applied to behavior and talk which may be either fantasy-based (variously termed pretend play, fantasy play, or symbolic play) or reality-based manipulation or construction with objects (termed object play, constructional play, or functional play). Both pretend and

constructional play are symbolic activities since each may involve utilization of an object, person or place to represent something other than its literal identity. Builders make constructional products, pretenders create make-believe worlds.

Gardner and Wolf (1983) have provided clear definitions of constructs important in the study of the symbolic development of young children. In general, semiotic function is the engagement in any activity which entails the use of symbolization. Both symbol systems and domains are key constructs in the study of symbolic development. "Symbol systems are collections of symbols which through cultural practices come to be used in an organized or systematic way" (Gardner & Wolf, 1983, p.20). Domains are particular symbol systems marked by certain features specific to that symbol system. Further, domain-specific refers to skills or priorities central to functioning in a particular domain; central skills are cognitive skills or operations which are implicated in more than one domain of symbolic performance.

Different theories of symbolic development variously interpret the relationships between different symbolic developments. The semiotic view of symbolic development is a theory of commonalities. Researchers guided by the semiotic system are interested in specifying the features which are common to all representational activities, and in specifying the central processes which govern symbolic function. In contrast, the domain-specific view

of symbolic development is a theory of differences. Investigators directed by this conception strive to define the unique features of each domain of symbolization, and the particular skills which are essential to mastery of each domain of symbolization.

The approach of the Harvard Project Zero group's approach to the study of symbolization integrates features of both the semiotic and domain-specific views. Students of symbolic development must determine: "whether, in fact, all symbols seem to be treated in more or less the same way by human information-processing systems and whether development seems to occur similarly across diverse symbol systems; or, on the contrary, whether these symbol systems are much more individual or 'encapsulated' with less of a link between one and the next" (Gardner & Wolf, 1983, p.21).

The semiotic, domain-specific and integrative approach to the study of symbolic development each carry a different interpretation of the status of play.

Semiotic view of play. Proponents of the semiotic view, including Piaget (1962) and Bruner (1964), focus on the commonalities that exist across diverse symbolic activities. These theorists emphasize that activities which entail semiotic function will have a similar developmental course because they are governed by more general representational capacities. One of the goals of researchers guided by this position is to establish that

the processes which govern children's symbolic thought are reflected in non-trival ways in all their symbolic activities, be they language, symbolic play, or three-dimensional representation.

From Piaget's (1962) perspective, the diverse forms of symbolization of preschool children all reflect the pre-operational structure of their thought. In his view, both symbolic play and language reflect the prelogical structure of a child's thought. Because the child distorts reality in pretense, fantasy can not play a role in the cognitive growth of the child. Also, the majority of a young child's speech is egocentric, as opposed to social, because she cannot adopt the point of view of her listener.

However, Piaget's (1946) descriptions of children's symbolic developments are consistent with a domain-specific interpretation of symbolic development. He describes a cognitive hierarchy of play forms: practice/functional play, games of make-believe, constructional games, and games of rules. He states that "constructional games occupy a position halfway between [make-believe] play and adaptive intelligence" (Piaget, 1946, p.109). Further, he suggests that the language of children can be more or less egocentric: "all language that is bound up with action, with handicraft, and especially with play will tend to be more socialized" (Piaget, 1974, p.62).

In summary, Piaget maintains that particular symbolic developments are controlled and limited by the child's stage of cognitive development, and also that different forms of play have distinctive characteristics. This formulation leads to the question of whether the same kinds of knowledge underlie make-believe and constructional play, an issue not specifically addressed by Piaget.

Domain/Media specific view of play. Adoption of the domain-specific view would lead to the prediction that material media will have a non-minimal effect on symbolic performance within play in general, and pretend and constructional play in particular. Psychologists (Arnheim, 1974) and art historians (e.g. Gombrich, 1961) emphasize that the use of different symbolic media results in products that have distinctive properties. Particular media, in addition, embody, through societal and cultural conventions, their own mechanisms for conveying meaning.

Domains of play are defined by both the material media used by players (e.g. blocks afford constructional play; a play house affords pretense) and by whether play materials are transformed or retain their real identities. In one of the few studies supporting the domain specific view, it was found that in two forms of picturing, photography and drawing, both adults and children had media-specific conceptions of picturing (Seidman & Beilin, 1984). By extension, one would expect the symbolic performances

of builders and pretenders to differ in terms of the players social speech and interaction, and that these differences will reveal the unique features and cognitive processes governing these two forms of play.

Integrative view of play. The Harvard Project Zero research group is presently engaged in an intensive study of the symbolic development of children between the ages of one and eight. The aim of their research is to uncover the cognitive foundation of symbolization as a general development, and to describe the development which occurs in the mastery of specific symbol systems. Thus far, they have presented an interesting characterization of what needs to be accounted for in any theory of the development of symbolization (Gardner, 1983).

They posit that there are six domains of symbolic knowledge: symbol play, language, music, number, two-dimensional representation and three-dimensional representation. These "streams" of symbolic development each have specific skills associated with them, skills which are learned. However, there are also "waves" or "central skills" of symbolization, common cognitive operations which are important in functioning across multiple domains of symbolization.

This view of symbolic development is distinct from a semiotic view in an essential way. Rather than viewing pretend play as a product of the representational stage of the child, the

theory stresses that numerous developments will influence symbolic play. Fantasy play entails complex skills which are related to both the domains of language and symbolic play. Similarly, since constructional play involves language, three-dimensional representation, and perhaps even symbolic play, it is not a "pure form" of play. Indeed, Wolf (1983) reports that young children do not have a notion of distinct symbol systems and they must learn to construct them in the course of symbolic development.

In summary, it is expected that an understanding of the pretend and constructional play of peers requires attention to the various displays of symbolization that accompany the play of builders and pretenders.

Given this assumption, questions emerge which guide the investigation of the similarities and differences in the play of builders and pretenders. Is the use of language significantly different between the two forms of play? In what way does the behavior of builders and pretenders differ? Are these differences in the cognitive operations used to structure the two forms of play? These general questions generate more specific questions when applied to the study of the social play of builders and pretenders.

The Social Use of Symbols

Werner & Kaplan (1963) emphasized that symbolization originated in the context of mother-child interaction. Vygotsky

(1978) believed that imaginary play was based on rules, rules which were derived from observation of social behavior. These thinkers have led contemporary play researchers to consider the relationship between knowledge and symbolization in the social play of both mother-child and child-child dyads.

There is evidence which suggests that the dyadic play of builders and pretenders is influenced by factors which do not affect the symbolic performances of solitary players (O'Connell and Bretherton, 1984). It appears that even within different forms of dyadic play, development of play abilities varies depending on whether the dyads are mother-child or child-sibling (Dunn & Dale, 1984) or friend-friend or child-child strangers (Gottman, 1983).

Pretend play of preschoolers. Piaget showed little interest in the collective, social play of older preschool children. Rather, his concern was with how the cognitive stage of preschoolers' thought limited their cognitive, social, and play abilities. His research on the development of preoperational children's speech led him to assert that their speech was to a large extent non-communicative. In his view this egocentric speech exists because of the cognitive limitations of young children. Young children's speech is egocentric, as opposed to social, because they cannot adopt the perspective of their

Further, he offered two reasons why the child under 7 will be egocentric:

> It is due, in the first place, to the absence of any sustained social intercourse among the children of less than 7 or 8, and in the second place, to the fact that the language used in the fundamental activity of the child-play...is one of gestures, movement and mimicry as much as of words. There is, as we have said, no real social life among children of less than 7 or 8 years (Piaget, 1974, p.60-61).

In light of current research, the assertion that children of less than 7 or 8 have "no real social life" seems to be an inaccurate characterization of the American preschool child.

Young children in both nursery school (Garvey, 1974) and in daycare settings (Schwartzman, 1978) engage in complex social play. Parten's (1932) classic study provided the scheme of classifying the social participation of preschool children which is still utilized in play research. Her system was revolutionary because it captured the play of an individual child in relation to the group. In her system, the categories of unoccupied behavior onlooker, solitary, parallel, associative and cooperative play, formed a hierarchy. She considered unoccupied the least mature, and cooperative the most mature form of social play. Preschoolers spent only 40% of their time in associative or cooperative play.

Lately, researchers working within Parten's framework have been more interested in specifying the function of each form of social play (Bakerman & Brownlee, 1980; Moore, Evertson & Brophy, 1974) and they have questioned whether her hierarchy is a valid index of increasing social maturity. By and large, developmental play research in the 70's and 80's has focused more on the cognitive than on the social aspects of play.

Stage theories of play. An assumption common to all stage theories of pretend play is that change in the solitary play of a child across her preschool years indexes a progression in the development of mental representation. The pattern of the stages in the development of symbolic play abilities is believed to be invariant across children.

One aspect of pretend play is currently explained by stage theory. Nicolich (1977) is interested in specifying the changes in the development of symbolic maturity as they are indexed in symbolic play. She believes, as did Piaget, that changes in the level of play:

> are derived from the children's action with respect to objects and people in the environment. Development proceeds from initial realistic treatment of objects through pretend activities which are increasingly abstract and complex, to the beginning of pretend activities that are planned, and thus mentally represented in advance of performance (Nicolich, 1977, p.89).

To assess this structure, she developed a 5-level sequence which was designed to mark the changes in symbolization across the period from 14 to 31 months. In the highest level of play in her system (Level 5.2), the child enacts more than one pretend schema and also provides verbal evidence that she is planning her play: "Child puts play food in a pot, stirs, then says 'soup' or 'Mommy' before feeding the mother. She waits, then says 'more?' offering the spoon to the mother (Nicolich, 1977, p.94)."

It is possible, however, to conceive of play scenarios that consist of more than one episode of planned pretense. After offering mother food, the child could have proceeded to announce, for example, that she was washing the dishes. Multi-episode play of this sort is common in the play of children from 3 to 6 years of age, and this level of play is not captured in Nicolich's categories.

The stages underlying a more specific symbolic development, that of the representation of social roles, have also been investigated (Watson & Fischer, 1980). These researchers posit an eight-step sequence in the development of social roles of children between the ages of 1 1/2 and 7 1/2. They describe development in this period as follows: "Early on, children take the perspective of an agent carrying out a behavioral role, then the perspective of an agent filling a social role, and finally the perspective of a more individualized agent filling several social

roles at once" (Watson & Fischer, 1980, p.492). In two experiments containing 80 children, they provide convincing evidence that this sequence of development is invariant and that for middle class children, each step is achieved at approximately the same age.

Four to seven-year-old children were able to model play sequences using doctor, nurse, and patient dolls which related to each other in increasingly complex ways. Four-year-olds re-enacted scenarios in which the doctor doll ministered to the sick patient doll. By 7 years of age, a child was able to model a scene in which a single doll assumed more than one role as, for example: "Experimenter pretends that one doll is a doctor, father, and husband relating to two other dolls. The second doll is a sick patient and the first doll's daughter. The third doll is the patient's mother and the first doll's wife" (Watson & Fischer, 1980, p.485).

However, in spontaneous play, the older children did not consistently produce play scenarios in which these complex social relationships were displayed. The authors admit that further research is needed to account for the differing display of social role knowledge in elicited and spontaneous play. It is possible that older preschool children require a social partner to engage in complex fantasy. The issue of how social role knowledge is

expressed in children's dyadic play requires further investigation.

In summary, research has documented cognitive advances in play across the preschool years both in social role knowledge and the ability to use objects symbolically. Most stage theories are based on observations of the individual child engaged in independent action. Little consideration is given to the specific contribution of language to the development of play.

Social play of preschool peers. Language is a central medium for the symbolic play of preschool children and Garvey (1974) work on children's play talk has led to important discoveries about the properties and characteristics of social play.

Garvey believed that interpersonal experience, and not just the child's stage of cognitive development, is central to the development of social role play. "Children learn to conduct such play, first with adult support or even explicit training or modeling, and then with age-mates, whose function grows during the third year of life from child partner to include role-partner as well." (Garvey, 1982, p.83).

Indeed, for dyads between 3 1/2 to 5 years of age, 66% of their playtime is spent in mutual engagement (Garvey, 1974). Although Garvey did not directly investigate the properties of non-fantasy based social play, her description of play stresses that through their social interactions, child-child players move

in and out of fantasy. "The course of role play does not run smooth; and most episodes include some frame breaks, in which the role players change back to their normal identity, using their own voice and gestures to discuss or argue about something in role-play frame, or else on some event in the actual environment" (Garvey, 1982, p.59). Thus, a full description of children's social role play requires identification of what children are talking about when they are not engaged in fantasy talk.

In a study of the sandbox play of peers (Seidman, 1983b), it was discovered that children engage in both fantasy and reality based play. In this study, ten preschool aged dyads engaged in twelve minute play sessions. The players utilized a sand-filled tank which contained a plastic container with a top, two shovels, a measuring cup, and a large spoon. All of the talk of the participants was transcribed, and each utterance was coded both for its relevance to the partner's prior utterance, and for its thematic content. Theme measures (Seidman, 1983b) captured the interactive goals which the dyads pursued through their talk. Thus, one or more exchanges of relevant talk with the same thematic content constituted a thematic conversation.

Analysis of the thematic content of these dialogues revealed that young players developed conversations around three different interactive goals.

In object play conversations, children used language to describe and comment on their stirring, mixing, and pouring actions which accompanied sandbox play. Seven of the ten dyads also engaged in material ownership conversations, where the children's dialogue concerned the sharing, possession, or desire for play materials. Fantasy play dialogues most often had an event-based structure, and despite the fact that the children shifted their conversational themes across their twelve minute play session, the scripted "make cake" fantasy was developed across the play session.

We need more functionally based studies of the social play of peers which identify the form and content of peer social interaction. Peer play is commonly studied within a pretend play context--we have almost no knowledge of the characteristics of children's behavior and/or talk in constructional play settings.

Prior research on children's social play suggests three ways in which the play of builders and pretenders is likely to differ. First, based on the Project Zero conception of symbolic play and three-dimensional representation as separate domains of symbolization, it is expected that there will be differences in the type and content of social interaction and speech between builders and pretenders. Second, because pretenders shift between fantasy and reality goals, it is expected that their play will contain a significant amount of reality based action and talk. Third,

since it is expected that older preschool children have learned different patterns of behavior and talk for building and pretending, it is expected that pretenders will display more fantasy, and builders more object/constructional behavior in their social speech and interaction.

Knowledge for Social Play

Cognitive psychologists doing play research are interested in determining if and how children's real world experience impacts their performance in social play. One line of research has examined the effects of specific variables, such as socio-economic status, types of play materials and play training on children's social fantasy play.

Experience and play. There are few studies on the way in which experience or adult teaching affects play (Dunn & Wooding, 1977; Tizard & Harvey; 1977). There is some evidence that children from disadvantaged families engage in less dramatic (Smilansky, 1968) and more functional play (Rubin, Maioni & Hornung, 1976) than middle class peers. These findings are attributed to the fact that lower class children have less opportunity to learn dramatic play, or that they encounter unfamiliar play materials in a preschool classroom. However, before the reasons for these differences were documented, social scientists had tried to improve children's symbolic play abilities.

Training play. Diverse goals and methods have been employed in play training research. The majority of these studies sought to document that increased participation in fantasy play activities leads to advanced cognitive functioning in preschool children. These studies showed that play training had the effect of improving, among other things, conservation performance (Golomb & Cornelius, 1977), group problem solving (Rosen, 1974) and impulse control (Saltz, Dixon & Johnson, 1977). Currently, there are questions as to whether play was the cause of these observed improvements (see Saltz & Brodie, 1982, for review). Additionally, the methods employed in play training varied in terms of the frequency and duration of training. In some studies, individual children were trained, in others, small groups of children, and in others, an entire class. Researchers often concluded that the observed effects occurred because play caused development. Studies did not document how play itself changed over the course of training. Studies on how specific training procedures change children's interaction and behavior in play will reveal more about the role of play in development.

Materials and play. Studies indicate that the degree of association of fantasy play objects with their more realistic counterparts will influence the interactive play of both 3 1/2 and 5-year-old children. High structure play materials decrease the amount of non-interactive play, but not the cooperative pre-

tend play of 3 1/2-year-old triads. However, when 5 year olds played with the high structure objects, they had more cooperative pretend play than in their play with low structure objects (McLoyd, 1983). Further, verbal fantasy play for 3 year olds, but not for 5 year olds, increased significantly when, in addition to dolls, players were given concrete objects (doll bed, bottles) to support fantasy play (Olszewski & Fuson, 1982). In summary, both studies suggest that the impact of high or low structure play materials varies with the age of the players.

Cognitive resources for social play. Given that young children are more communicatively and socially competent in play than the construct of an "egocentric" preschooler would predict, it is important to identify which factors control children's ability to display competence in social play. When play involves more than one child, children must establish shared knowledge (Nelson & Gruendel, 1979) or shared meaning (Brenner & Mueller, 1982), or negotiate the development of a particular play script (Corsaro, 1983). There is now ample evidence supporting the role of event knowledge in young children's symbolic performances and a review of this literature clarifies possible relationships between the representational capacities of young children and their social speech and interaction in play.

Garvey and Berndt (1977) were the first to describe how shared conceptual representations are used by children to engage in social fantasy play:

> ...the children share an abstract plan or representation of an event sequence...The schema must be sufficiently abstract to subsume variant and specific guides to performance. These variants (of schemas), which we call action formats, direct pretend production...Once a schema is formed, it is productive, i.e. it generates specification formats that control the performance we observe. (p.8).

In this way, Garvey and Berndt have attempted to describe how children go from what they know to what they do in play. Additionally, they describe specific play schemas common to children's play such as making a phone call, cooking/baking, dining, packing, and so on. However, this does not specifically address how children's utilization of schemas affects their discourse competence within play.

A more recent analysis of play in terms of shared scripts is specifically directed toward an explanation of the role of knowledge in the structuring of peer play discourse. A script, a type of schema, is a conceptual representation of a sequence of acts, organized around a goal and specific action, roles, props and scenes (Nelson, 1978; Nelson, 1981, Nelson & Gruendel, 1981; Schank & Abelson, 1977). Play itself involves non-verbal action

as well as verbalizations, and joint activity and talk in play require that both children share an understanding of the event in progress. According to the scriptal view of children's dialogic capacities, children's ability to engage in dialogue depends upon their ability to establish and maintain a shared context based on a mutual understanding of the situation and script (Nelson & Gruendel, 1979). This theory predicts that peer success in social play, including both their conversational and interactive competence, is dependent upon utilizing common event representations.

The scriptal view of play also suggests the important role that play-scripts themselves may have in enabling children to carry through a play sequence smoothly. That is, children may develop expectations about how a particular play sequence should go, over and above their knowledge about the real world event on which the play is based. Thus, children may have "playing school" scripts or "cooking play scripts" which are different from their reports of what actually happens when they go to school or cook (Nelson, Seidman & Gruendel, in preparation).

Research on the function of scripts in dyadic social play found that peers do use scripts to structure their play conversations thus maintaining cooperative interaction in play (Nelson & Gruendel, 1979). Moreover, across three different play tasks, the longest segment of social speech of four-year-old peers was

scripted, and event sequences structured the pretend play conversations of peers. Wolf, too, discovered that event-structuring was a distinctive approach used by young children to organize and encode meaning in symbolic play.

> It appears that children are using their understanding of the sequences and roles evident in familiar events as a basis for formulating a family of early representational forms...In socio-dramatic play, the children were able to play out a control action, such as cooking dinner, keeping track of simple roles and sequences, such as stirring and tasting (Wolf, 1983, p.2).

Little is known about children's ability to use language in constructional play activities. There is, however, one study which compares the speech of preschoolers participating in dramatic play with the speech of young children engaged in constructional play.

In Pellegrini's (1982) study, four preschoolers, two boys and two girls, ranging in age from 51 to 60 months, were video taped for thirty minutes while playing in the housekeeping and block areas of their classroom. Over a two day period of taped observation, children engaged in ten constructive and eight dramatic play episodes.

Pellegrini found that constructional play language was non-cohesive and relied on the frequent use of context dependent

reference. In dramatic play, discourse was cohesive and meaning was lexical.

> Thus, the dramatic play context calls for children to use explicit language if play is to be sustained. Unlike constructive play, which has children's language more reliant on contextual assumptions, the sustance of dramatic play is dependent upon players explicit verbal encoding of play theme and roles (Pellegrini, 1982, pp.107-109).

It is known that in functional or constructional play conversations during sandbox play, peers talk about what they're doing (Nelson & Seidman, 1984). Pellegrini's study of constructional play suggests that builder talk is more likely to be about players' actions and their reality-based observations of their play environment. If one assumes that peers must utilize shared knowledge to engage in cooperative constructional and cooperative fantasy play, then it appears that "in a play situation, the children's available forms of knowledge include their conceptual representations of events, their actions, and the ideas verbalized by their discourse partners" (Nelson & Seidman, 1984, p.67).

Our understanding of the conceptual basis for peer play is based primarily on the studies of pretend play. In constructional play, the goal is to create or make something. In their later preschool years, constructional players are capable of digital mapping, they have the "capacity to make a stack of two,

then three, then four blocks, such that each column has one more block than the abutting one" (Gardner & Wolf, 1982, p.27). In other words, children can observe precise relationships and accurately reproduce them in three-dimensional space. It is logical to assume that this skill is used by peer players as a basis for joint interaction in social constructional play. It is expected that when both members of a dyad share knowledge of how to build a particular configuration, this will provide them with sufficient cognitive resources to engage in competent constructional play.

In summary, the second major goal of this research is to investigate the knowledge basis of preschoolers' dyadic social play. The assumption is that symbolic play dominates pretenders' play, whereas three-dimensional representation dominates builders' play. Contemporary theory and research has highlighted the importance of event knowledge in symbolic play and of digital mapping in three-dimensional representation. Yet, we have little knowledge of whether different skills are needed for competence in pretend and constructional play.

Regarding linguistic and behavioral competence in pretend play, the dialogic hypothesis is that "when both conversational structure and content knowledge are shared by young participants in a language situation, dialogue may be expected to occur "(Nelson & Gruendel, 1979, p.75). They further stated that

the form of shared knowledge used by young peers in play is typically, a script. However, the problem thus far with research on the role of event knowledge in play is that the evidence for the importance of scripts in play has been derived directly from the discourse of the children. If children engaged in a conversation, and it had a scripted form, it was assumed that children relied on shared event knowledge to structure play action and talk. It is theoretically possible that children can negotiate and establish sequences for play through playing, even if they do not have shared knowledge of the event prior to their engagement in play (Corsaro, 1983). However, if children observe an adult model an event for play, and the knowledge gained is reflected in the greater dialogic and interactive competence of the players, this would provide evidence for the important role of event knowledge in symbolic play. Similarily, greater competence of trained builders over control builders in constructional play demonstrates the centrality of procedural knowledge in the social play of builders.

Summary of Predictions

This research was guided by a domain-specific view of symbolic development. Applied to play, this would predict that builder and pretender play are different forms of social symbolization in which different kinds of cognitive resources are

utilized. As such, it was hypothesized that there would be differences between the patterns of social interaction, and the verbal and non-verbal content of builders' and pretenders' play. The comparative study of these two groups of players was expected to provide empirical support for a domain specific view of play, and provide descriptions of the properties and characteristics of fantasy and constructional play. Further, it was predicted that, whereas event knowledge would support peer competence in pretend play, observation of a procedure for creating a specific construction would support builders' play. More specifically, it was expected that trained pretenders would be more collaborative, conversational and engage in more fantasy play than their untrained peers. For trained builders, it was expected that they would engage in more object/constructional play than untrained builders.

Method

Subjects and Design

Ninety-six children (M= 58.2 months, SD= 5.9 months), 48 boys (M= 57.4 months, SD= 5.1 months) and 48 girls (M= 59.0 months, SD= 5.5 months) served as subjects. Subjects were enrolled in five, full day preschools located in middle and lower socio-economic areas in the boroughs of Manhattan and Brooklyn. The children were White (81), Black (13) and Oriental (2). Teachers at each school were asked to list all the competent English speakers in their class. Written consent was obtained through letters of permission sent to the parents of each child on this list. From the group of children who received permission to participate in the study, the teachers nominated 48 same-sex, socially compatible dyads. These dyads were assigned randomly to either the pretend or building condition. Both play conditions contained an equal number of boys and girls.

The study employed a pretest-model/control-posttest design. Of the 48 dyads, 24 were included in each play condition, and in each condition 12 dyads were assigned to either a model or control group. There were no significant age differences between the boys and girls, builders and pretenders, or model and control groups. Mean ages for each sub-group were 57.6 months, SD= 6.03 for model builder, 57.9 months, SD= 5.8 for control builder,

58.5 months, SD= 5.7 for model pretender and 58.6 months, SD= 5.6 for control pretender.

During the week prior to the beginning of the study, the female experimenter visited each child's classroom three times.

Setting and Materials

The pretest, model/control, and posttest phases of the study were conducted in a private play area in the children's school.

In the pretest and posttest phases of the pretense condition, the same materials were utilized. They consisted of an overturned table covered by a cardboard playhouse roof, two rubber carrots, a pile of shredded brown fabric, a large and a small plastic scoop, and a small plastic chicken and rooster. These materials were also utilized by the experimenter in modeling a fantasy play event. Between the pretest and posttest sessions, control dyads were read a children's story book, Peter's Chair.

In the pre and posttest phases of the building condition, the material utilized was the Taboga building set. This toy consists of interlocking tubes, bars, and "shoe" shaped pieces, which can be stacked and arranged in a variety of ways. This set was also used by the experimenter in modeling a constructional play event. Between the pre and posttest sessions, control dyads played bean-bag toss with the experimenter. Different tasks were

selected for the control groups in the two experimental conditions in order to provide experiences similar to the experimental tasks (i.e. pretense or constructional play).

Procedures

Players were taken from their class to the play area by the experimenter. Materials for the pretense condition were placed around the roof-covered table in a fixed manner. The chicken and rooster were to the left of the barn (the table) and on the right were the carrots covered with shredded fabric and the two scoops. For building players, the pieces of the building set were disassembled and placed on a small table. Two chairs were placed around the table. A video camera was placed on a tripod approximately twenty-five feet from the play area. A date-time generator was attached to the camera during taping.

Pretest. Prior to the start of the pretest, all players were told: "You talk and play together using these things. I'm going to be busy." Following this, the experimenter left the immediate play area, and a six minute, videotaped peer play session ensued.

Pretense model treatment. Children were asked to sit on small chairs which faced the play area. The experimenter returned all play materials to the position they occupied prior to the pretest phase, and then told the children, "I am going to

show you how to play farmland." She then twice modeled an event for fantasy play:

> I look in the barn. (Look under the table.) There is no food for my animals. So I have to get some. (Walk over to fabric pile and dig.) I dig, and I dig, and I dig. Look what I found! Some nice juicy carrots. Now I can feed my imaginary bunny! Here bunny, bunny, bunny. (Walk over to the other side of the barn and hold out carrots to the imaginary rabbit.) But the chickens have no food! (Look in the distance and smile.) You know what? I see someone coming. (Walk away from play area.) The man from the food store is coming. (Walk back as a delivery man carrying a pretend sack on shoulder.) He's carrying a big sack of chicken food. He gives it to the farmer. (Place sack on the ground and assume farmer role.) The farmer opens it up and feeds the chickens. Here chick, chick, chick.

Pretense control treatment. The children sat on chairs facing the play area and were read a children's story book. The purpose of this activity was to provide a five minute interval between the pre and posttest play sessions so that the total peer play time would be equal for both model and control groups.

Building model treatment. As in the other conditions, children sat on chairs facing the play area. The children's constructions were disassembled, and the children were told: "I am going to show you how to build towers." The experimenter then twice modeled an event for constructional play, which was accompanied by the following instructions:

> There is no building, so I have to build towers. Put a yellow tube on one side of a bar and a shoe on the

> other. And put two bars on top -- one, two. Now you make another one just like this one. A shoe on one side, a tube on the other, and two bars on top. Put three bars in between the two towers -- one, two, three. And now put a decoration (yellow tubes) on the top of the high towers, one on one side and one on the other.

Building control treatment. The experimenter and children tossed a bean-bag for five minutes, so the total peer play time was equal for both model and control groups.

Posttest. After the treatment phase of the study, all play materials were again placed in their original positions. Prior to the start of the posttest, all pretense players were instructed as follows: "Play farmland together. I'm going to be busy, so you play farmland together." All building players were instructed to "Build towers together. I'm going to be busy so you build towers together." Following this, the experimenter again left the immediate play area, and the six minute, videotaped posttest play session began. At the end of this session, children were thanked and brought back to the classroom.

Data Analysis

Minutes 0-6 of each pre and posttest play sessions were coded at ten second intervals. In each interval, the highest level of social interaction was coded, along with its accompanying content. Complexity of fantasy and object play were also

assessed. Unless otherwise specified, all categories were applied to both the building and pretense play sessions.

Interrater reliability. Interrater reliability in coding all behavior and language measures was determined by computing the percent agreement between the experimenter and a second rater by coding 25% of the pre and posttest play sessions for both builders and pretenders. Reliability coefficients are listed following the description of each group of measures.

Social participation categories. Five hierarchical categories were adapted from Parten (1932) and Cooper, Ayer-Lopez & Marquis (1983) to determine the highest level of social interaction displayed between the players. In non-interactive intervals, the peers ignored each other and directed no speech, action, or communicative gesture to the co-player. An interval was coded as one-sided when one player initiated the interaction, and the co-player either ignored or responded only minimally to the co-player. In collaborative interaction, both children contributed to the interaction by sharing in the development of a conversation, or in the accomplishment of the same fantasy or reality based goal. In collaborative teaching, a particular form of collaboration, both players focused on a common goal, but one child directed the other while they pursued their goal. This form of interaction was reliably detectable only for players in the building conditon. In differential collaboration, another

particular form of collaboration, each child engaged in her own task, but both children's behavior was directed toward attainment of a shared goal. In the pretense condition, this often consisted of adopting of specific roles, whereas in building, each member worked on a section of a larger construction. The mean reliability coefficient for these measures was .89 and ranged between .81 for collaborative teaching and .95 for collaborative.

Content categories. These measures, adapted from Piaget (1946) and Seidman (1983b), assessed the goal of interaction which accompanied each ten second, interactive interval. Thus, every interactive interval (one-sided, collaborative, collaborative teaching, and differential collaboration) was also assigned one of eight mutually exclusive content codes. Object/constructional themed intervals occurred when there was reality-based play. This consisted of manipulating materials, building or creating a material product, or discussing an intent to make something. Fantasy-themed intervals occurred when there was symbolic play which entailed the presence of fantasy ideas and/or transformations of play objects or role play. In material ownership-themed interactions, action and/or language was used to share, keep, or obtain play materials. Observe properties-themed interaction consisted of examinations and/or descriptions of the properties and attributes of toys, people, and objects present in the play setting. Outside reference occurred when there was talk

of people, places or things which were outside the immediate physical, here-and-now context of the play area. Affect displays were intervals in which there were positive, joyful behaviors, including clapping, singing, laughing, smiling, and word play. In whisper intervals, no determination of the thematic content was possible because the verbalizations of the players were inaudible. The mean reliability coefficient for these measures was .91 and ranged between .86 for object/constructional and .97 for whisper.

Play complexity. Every interval coded object/constructional play was also coded for the presence of two qualitatively distinct forms of constructional play. In non-specific intervals, one player engaged in object/constructional play, but the play was not directed to the achievement of a specific, constructional goal. In joint specific intervals, planning was indicated and both players engaged in goal directed play where they deliberately built a particular construction or arranged objects in a particular configuration.

Every interval coded fantasy was also coded for the presence of three qualitatively distinct forms of symbolic play. Ideational intervals contained proposals for the enactment of a fantasy scene, as in "Give me my food, I'm going to cook it." Action pretense entailed the creation of fantasy primarily through action, as when players pretended to "fly" a rocket, or

"swim" underwater. In role pretense, players assumed an explicit or implicit fantasy role through role assignment ("I'm mommie and you're daddy"), talking in animated voices (clucking like a chicken) or enacting a functional, social or character role (Garvey, 1982). The mean reliability coefficient for these measures was .88 and ranged between .81 for non-specific and .95 for ideational.

Productive langauge. All the talk of the players from their pre and posttest play was transcribed from the videotape by the experimenter or by another female graduate student experienced in child language research. The speech was divided into utterance units (Garvey & Hogan, 1973) and intelligible utterances were numbered on the transcript, yielding the utterance total. The majority of the language measures were designed to analyze social speech. Social utterance total consisted of all intelligible utterances directed to or in response to the play partner. An exchange unit was a segment of discourse structured by alternating linguistic turns in which the partners demonstrated communicative and semantic contingency across turns. Conversations were defined as one or more exchanges, and the number of exchanges in a conversation indexed its length. The mean and maximum exchange lengths of conversations were also computed for each dyad. Each utterance of social speech was further coded for talk and theme type.

Talk measures. All social utterances were coded as either conversational or declaratory utterances. Declaratory utterances were socially directed but, unlike conversational speech, they were not followed by a contingent response. The mean reliability coefficient for these measures was .97.

Theme measures. These measures, adapted from Seidman (1983b), were designed to assess the goals the participants pursued through their social speech and interacion. Every utterance of social speech was coded as one of five mutually exclusive theme categories. Three of the five categories contained subtypes, which assessed the qualitative differences in the use of language within a particular category.

Constructional utterances were reality based and dealt with the manipulation, building or observations on the play materials, and/or physical environment. In constructional procedure, talk contained evidence of planning for the creation of constructional products, such as "I'm gonna put one in there" or "You're doing it the right way" or "Take the other one off, and put that one on." In utterances coded as constructional display, talk directed the attention of the co-player to a constructional product, as in "Look, look." In constructional observation, players utilized talk not to engage in object play, but rather to observe and comment on the properties of play materials as in "There are two of them" or "Mine's bigger than yours."

Pretend utterances were fantasy based and evoked a make-believe context. In pretend transformation, players used talk to assign a fantasy identity to objects which were present in the play setting, as in "Look what I'm making, an oil drill" or "This is spaghetti." In pretend procedure, talk was utilized to plan or elaborate on a fantasy, as in "The chicken getting tired. Let's eat carrots." The child became the instrument of fantasy in pretend enactment, where participants used language to talk in animate voices, or to assume and enact a fantasy role, "What did you make for supper? This spaghetti is good, mother."

In ownership utterances, talk concerned the sharing, possession or desire for play materials. In ownership self, talk expressed demands for materials based on the player's own wants or needs, such as "I need more" or "Give me, give me." Ownership other utterances were requests or offers for materials which acknowledged the co-player, such as "You can't have two, Lenora" and "One carrot for you, hear." In reason ownership statements, a player expressed why she wanted a specific material, as in "I need that because I'm making a high tower."

In outside reference, talk involved discussions of people, places, or things not in the immediate physical context, such as "Later on, we'll go upstairs to the terrace, right?" Sound play utterances consisted of songs and word play games. The mean

reliability coefficient for these measures was .94 and ranged between .77 for constructional procedure to .98 for soundplay.

Knowledge for play. The language transcripts of builders and pretenders were further examined to investigate whether the model and control groups differed in the kinds of knowledge they utilized in play. The protocols of the pretenders were categorized according to the strategies utilized to structure their play activity. Event players contained action formats which Garvey & Berndt (1977) previously identified as schemas commonly utilized by preschool peers to structure their fantasy play. Modeled-Event players utilized the adult-modeled event, farmland, to structure their peer play. Novel-Event players created unique, explicit events for play during their play sessions. Object-Explorers were players who had no event-based talk in their peer play. All players, except for object-explorers, could receive multiple pretense classifications. For example, pretenders were often classified as both event and modeled-event players.

All builders' protocols were examined to determine whether players had created any specific constructional products and whether model builders used modeled events for play to structure their second sessions of play. For builders, labeling their constructions was considered evidence that players intended to make specific constructional products. None builders showed no evi-

dence of planning or creating a specific construction. Specific builders produced one or more specific constructional products. Model-Specific builders created towers, the specific constructional product posttest builders were instructed to create. Builders could be classified both as specific and model-specific builders.

Statistical Analysis

Preliminary analysis revealed no sex differences between builders and pretenders on any behavior or language measures. Therefore, data from boys and girls were combined for all subsequent analyses.

Play condition comparison. On the pretest data, one-way analyses of variance were performed to determine whether there were significant differences between the two experimental conditions (Builders/Pretenders) in the proportion of responses within each peer behavior and thematic language category. Proportions for these measures were computed based on the number of interactive intervals (for social participation and content) and the total number of social utterances (for thematic language) of each dyad. Additionally, one-way ANOVAS were performed to determine if there were significant differences in the productive language and play complexity measures.

Pre-post comparison. To assess the effect of modeling events for play on the social speech, behavior, and play complexity of peers, 2(Pre/Post Session) X 2(Model/Control Group) X 2(Building/Pretending Conditions) analyses of variance on each category were performed with repeated measures on the first factor. The kinds of knowledge builders and pretenders employed in their first and second play sessions were also described.

Results

Results are reported in three sections. Presented first are the contrasts between the spontaneous, pretest play of builders and pretenders. Following this, the pre and posttest analyses describe the effect on symbolic performance of play session, training, condition, and the interaction of these factors. Differences in peer behavior, play complexity, and peer talk are described in both these sections. The last section describes the difference between how trained and control players established make-believe and constructional play.

Spontaneous Play of Builders and Pretenders

Social behavior of builders and pretenders. As Table 1 reveals, the proportion of non-interactive intervals was significantly higher for the builders. For thirty-six percent of their total play time, builders ignored each other and directed no speech, action, or communicative gesture to their co-player. On the other-hand, two-thirds of builders' and pretenders' pretest sessions contained social interaction. Builders had significantly more one-sided interaction; .46 of their social interactions were of the type where one player initiated an interaction, and the co-player responded only minimally or ignored the overture. In contrast, pretenders were significantly more likely to display

TABLE 1

Mean Proportions of Social Behavior for Builders and Pretenders on Pretest

Social Behavior	Builders	Pretenders	Significant Effects and F Values[a]
No Interaction	.36	.16	11.04**
Social Participation			
One Sided	.47	.35	6.27*
Total Collaboration	.51	.65	7.99**
Collaborative	.46	.56	4.13*
Collaborative and Collaborative Teaching	.50	.64	8.16**
Differential Collaborative	.01	.07	ns
Content			
Object/Constructional	.28	.31	ns
Fantasy	.16	.35	9.38**
Material Ownership	.14	.06	8.94**
Observe Properties	.25	.17	ns
Outside Reference	.08	.06	ns
Affect Displays	.06	.10	ns
Whisper	.01	.08	ns

Note. "No interaction" specifies the proportion of the play session in which the players did not interact. All other categories specify the proportion of all the social interaction of the players which were in particular social participation or content categories.

[a]df= (1,46) *p< .05 **p< .01 ***p .001

collaborative interactions; .65 of the time both players contributed equally to the social interaction. However, builders too were often collaborative, and .51 of their social participation was in this category.

In sum, over half the peer play of both builders and pretenders was collaborative. Builders more often engaged in independent action, pretenders were more likely to share in the development of a conversation or in the accomplishment of the same fantasy or reality based goals.

As the content measures in Table 1 reveal, builders and pretenders pursued some interactive goals to an equivalent extent. The players did not differ significantly in the proportion of social interaction devoted to reality-based, object play or in the extent to which they examined or described the properties of objects in their play setting. For both groups, interactions categorized as outside reference, affect displays, and whisper were infrequent. What did distinguish the players was the proportion of social interaction devoted to fantasy play and material ownership. In over one-third of their social interactions, pretenders developed fantasy ideas and/or transformed objects or their own identity. Only .16 of builder social interactions were of this type. However, builders exceeded pretenders in the extent to which they utilized actions to share, keep, or obtain play materials. Material ownership accounted for 14% of

the interaction of builders and only 6% of the interaction of pretenders.

An analysis of the social behavior of builders and pretenders revealed the unique and common properties of these play activities. Builders were more solitary, pretenders shared more in play. Peer builders needed to obtain materials to complete their individual constructions, pretenders collaborated with peers to establish new, fantasy identities for their play materials. All players devoted a significant proportion of their interaction to reality based, object/constructional play.

Play complexity of builders and pretenders. As Table 2 reveals, the object/constructional play of builders and pretenders was qualitatively different. Joint-specific object play was more frequent for pretend players. In these intervals, players engaged in collaborative, deliberate object play such as digging in the shredded fabric or repeatedly squeezing the rubber carrots. In contrast, more of the builders' object/constructional play was non-specific. In this type of object play, a child worked independently and the goal for object play was not communicated to the co-player.

In summary, although builders and pretenders do not differ in the proportion of social interaction devoted to object/constructional play, pretenders' reality based play was more

TABLE 2

Pretest Interval Means for Play Complexity for Builders and Pretenders

Play Complexity	Builders	Pretenders	Significant Effects and F Values[a]
Object/Constructional			
Non-Specific	3.38	0.96	11.09**
Joint-Specific	.46	4.67	7.85**
Fantasy			
Ideational	2.54	6.04	5.75*
Action	1.21	4.0	6.85**
Role	.00	2.63	13.60***

Note. Builders displayed no role fantasy. Therefore, in order to statistically compare the builders and pretenders on role pretense, the figure .001 was assigned as a role score for each builder.

[a]df= (1,46) *p< .05 **p< .01 ***p< .001

deliberate and collaborative. Builders usually manipulated building materials without communicating what they were making.

Productive Language of Builders and Pretenders

Analysis of the productive language of the players revealed that both builders and pretenders used predominantly social, conversational speech. In Table 3, the mean conversational exchange length is 2.83 for pretenders and 2.08 for builders. Although these conversations contained only a few exchanges, each conversational turn was often comprised of several utterances. Almost all of the speech of players was directed to or in response to a play partner, and 79% of these social utterances were part of conversational exchanges. The mean proportion of social speech which was also conversational talk was .65 for pretenders and .92 for builders.

Builders and pretenders were also alike in the degree to which they used language to pursue particular, interactive goals. Table 4 lists the mean proportions of social utterances which were in particular theme categories for both conversational and social speech. Pretenders had less pretend talk than constructional themed language. Of all their social speech, .29 had a pretend theme, and .52 a constructional theme. The majority of the talk of the builders was directed toward pursuing realistic goals. Of all their social speech, .57 had a constructional

TABLE 3

Pretest Means for Productive Language Measures

Productive Language	Builders	Pretenders	Significant Effects and Levels
Utterance Total	70.04	80.42	——
Conversational Utterance Total	56.21	49.58	——
Social Utterance Total	60.88	75.96	——
Number of Conversations	6.33	6.17	——
Mean Exchange Length	2.08	2.83	——
Maximum Exchange Length	4.5	6.17	——

TABLE 4

Mean Proportions of Pretest Language Theme Measures

	Conversational		All Social		Significant Effects
Language Theme	Builders	Pretenders	Builders	Pretenders	F Values[a]
Constructional					
Procedural	.17	.17	.34	.35	
Display	.05	.01	.15	.05	C: 11.18**
					S: 4.08*
Observational	.16	.12	.26	.47	
TOTAL	**.39**	**.30**	**.57**	**.52**	
Pretend					
Transformation	.04	.02	.06	.03	
Procedure	.05	.13	.57	.18	C: 5.10*
					S: 5.18*
Enactment	.04	.06	.05	.08	
TOTAL	**.13**	**.21**	**.19**	**.29**	
Ownership					
Self	.13	.02	.18	.03	
Other	.08	.01	.10	.03	
Reason	.09	.004	.09	.01	
TOTAL	**.31**	**.04**	**.15**	**.06**	C: 6.62***
					S: 5.65*
Outside Reference	.03	.02	.07	.02	
Sound Play	.02	.04	.04	.07	

Note. C= Effect of Play Condition on Conversational Speech, S= Effect of Play Condition on Social Speech (Conversational and Declaratory Combined)

[a]df= (1,46) *p< .05 **p< .01 ***p< .001

theme, and .15 an ownership theme. In both play conditions, peers were more likely to use language in reality-based interactions than in generation and sustenance of fantasy.

Contrary to expectations, productive and thematic language measures revealed many similarities in the language of builders and pretenders. There were, however, three significant differences between their thematic language. First, builders were more likely to focus a player's attention on constructions built by an individual player (constructional display), as in:

1. C: Look what I did (laughs)
   R: Oh? What?
2. C: Look! Look at them! How you do that?
   (Girls, Mean Age, 56 months).

Second, builders utilized a greater proportion of their social speech to negotiate ownership of play materials, as in "Oh gimme. Oh, you got one!"

Third, pretenders utilized a greater proportion of their social speech to enact a fantasy, (pretend procedure), as in this cooking fantasy:

1. M: We need some carrots.
   P: And we need to put some celery
2. M: Put some salt in. There, eat it all up.
   OK, I'll eat it all up.

P: No. Somebody else. Pretend somebody else eats it.

(Boys, Mean Age, 57.5 months).

Based on the analysis of the pretest play, the picture that emerges is that peer builders and pretenders display both similarities and differences in the behavior and talk which constitutes their symbolic performances. Peer builders are more solitary, pretenders more collaborative. Pretenders were more likely to engage in fantasy play, and builders were more likely to use the procurement of play materials as an interactive goal.

Both builders and pretenders engaged in object/constructional play. Although pretenders had a higher proportion of intervals which were categorized as fantasy, they did not have significantly more pretend social speech than builders. Furthermore, 8 of the 24 pretend partners had less than 4 utterances of social speech in which they evoked or maintained a fantasy context. In short, most of the social speech and behavior of these 4 and 5-year-old peers was directed toward explorations and commentary on the properties of play objects. For pretenders, this changed in their posttest play session.

A Second Chance to Play

The changes which occurred from the first to second play sessions were examined for the effects of play session, and the interaction of session with play training (event model/control), play condition (building/pretending) and the interaction of these factors. The significant effects of each of these factors on the social participation, play complexity, social behavior content and social speech of players are reported.

Pre Post Social Behavior of Players

Changes in social participation. In general, builders and pretenders, model and control group players, significantly decreased the proportion of play time in which peer behavior was non-interactive (Table 5). This increase in peer interaction and decrease in one sided interaction was a function of the interaction of session with training group and play condition. As seen in Table 5, builders continued to engage in more independent action than pretenders in their second play session. For pretenders, training had the effect of decreasing by one-half the proportion of playtime spent in independent action. In contrast, control builders showed a greater decrease in non-interaction than did model builders.

TABLE 5

Mean Proportion of Social Participation for Pre and Post Play Sessions by Session, Training Group, and Play Condition

Social Participation	Session	Builders		Pretenders		Significant Effects
		Model	Control	Model	Control	F Values[a]
No Interaction	Pre	.29	.43	.21	.11	S: 8.28**
	Post	.23	.30	.11	.16	C: 6.76**
Social Interaction						
One Sided	Pre	.47	.52	.36	.33	C: 5.42*
	Post	.30	.48	.27	.22	
Total Collaboration	Pre	.55	.47	.64	.67	
	Post	.68	.50	.77	.73	
Collaborative and Collaborative Teaching	Pre	.55	.46	.63	.66	
	Post	.65	.49	.62	.71	
Differential Collaboration	Pre	.04	.01	.10	.06	S: 5.40*
	Post	.07	.13	.12	.08	

Note. S= Main Effect of Session, T= Session by Training Group Interaction, P= Session by Play Condition Interaction, C= Session by Training Group by Play Condition Interaction.

"No interaction" specifies the proportion of the play session in which the players did not interact. All other categories specify the proportion of all the social interaction of the players which were in particular social participation categories.

[a]df= (1,44) *p< .05 **p< .01

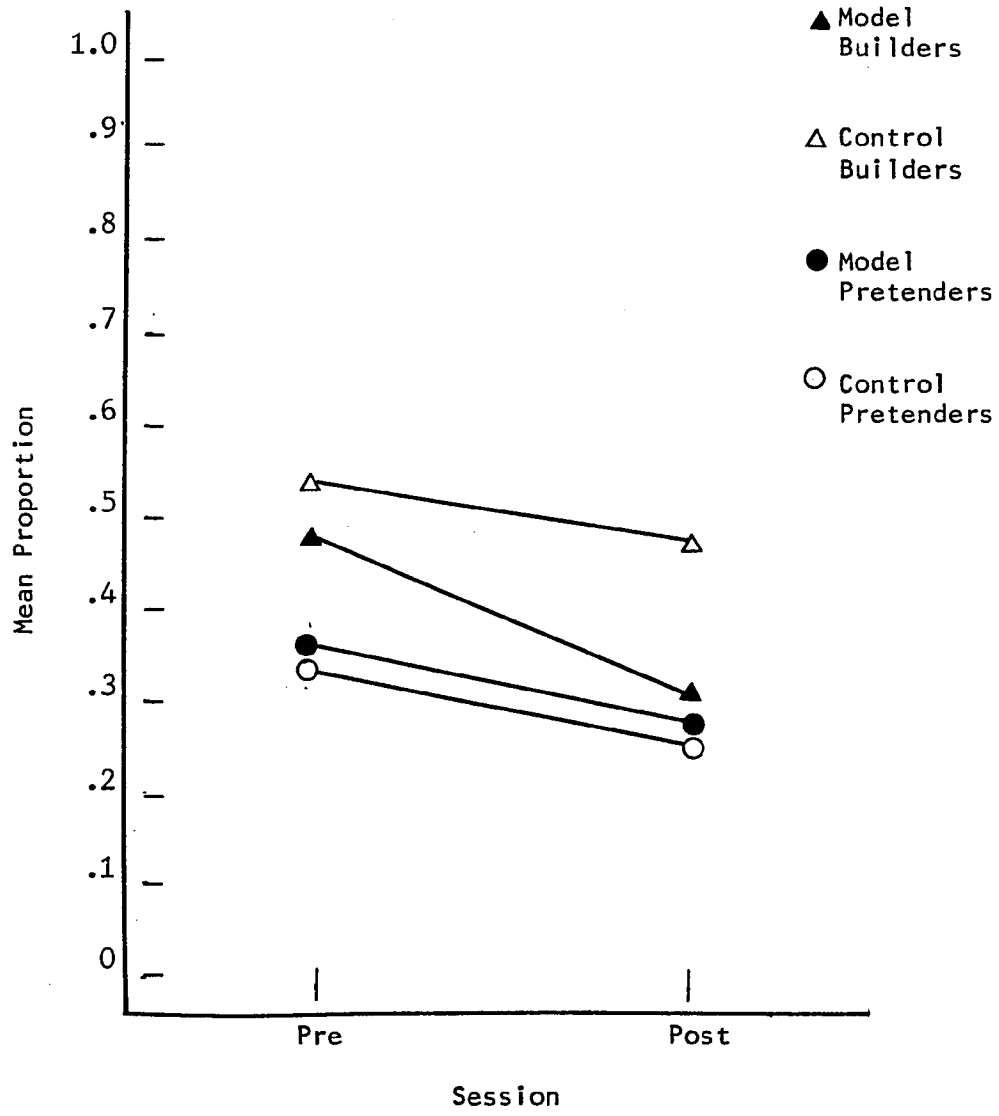
The changes between sessions in the mean proportion of one-sided interaction is shown in Figure 1. As can be seen, one-sided social interaction decreased in the posttest sessions for all groups, and as Table 5 shows, there was a significant interaction between session, training group and play condition. For pretenders, training had no differential effect on the proportion of time in which one child initiated social interaction. Both model and control pretenders showed a comparable decrease in one-sided interaction. However, the proportion of one-sided interaction for model builders decreased from .47 (pretest) to .30 (posttest). Control builders did not display this substantial decrease. In sum, for builders, training had the effect of decreasing the proportion of time in which one child was responsible for the initiation and maintenance of social interaction.

As in the first session of play, both builders and pretenders continued to display a high level of collaboration in their posttest play. Training group, play condition, or session did not have a significant effect on the mean proportion of collaboration. In over one-half of their interactions, all groups of players shared in the development of a conversation or in the same play goal.

There was a main effect of session on differential collaboration. In posttest play, it was significantly more likely that

Figure 1

Changes between sessions in the mean proportion of one-sided interaction for builders and pretenders in the model and control groups



each member of the dyad would work on separate tasks related to a common goal.

In sum, there was significantly more social interaction and differential collaboration in the posttest play sessions. Training had the effect of decreasing non-social interaction for pretenders and one-sided interaction for builders. All players, in both pre and post sessions of play, had more collaborative social interaction than any other type of social behavior.

Changes in play complexity. As Table 6 reveals, there were both significant session and interaction effects on each play complexity measure. Figure 2 displays changes between sessions on the mean of non-specific object play for all groups. In the posttest sessions, all groups significantly decreased the amount of non-goal directed, solitary object play. Additionally, training decreased the amount of non-specific object play, and the amount of change on these variables varied as a function of whether the players were builders or pretenders. Builders displayed a greater decrease in non-specific object play than did pretenders.

Figure 3 displays the changes between session on the means of joint-specifc object play for all groups. Builders increased and pretenders decreased the frequency of cooperative, goal-directed play in their posttest sessions. Model and control pretenders decreased joint-specific object play to an equivalent

TABLE 6

Means Number of Intervals for Each Complexity Measure of Pre and Post Play Sessions by Session, Training Group, and Play Condition

	Session	Builders		Pretenders		Significant Effects
Play Complexity		Model	Control	Model	Control	F Values[a]
Non-Specific	Pre	4.0	2.75	1.00	.92	S: 12.85***
						T: 6.07*
	Post	.5	2.00	.00	.83	P: 4.53*
Joint-Specific	Pre	.75	.17	2.92	6.42	S: 46.32***
	Post	12.25	1.83	.75	3.87	C: 17.00***
Ideational	Pre	2.92	2.17	8.67	3.42	S: 10.12**
	Post	.75	3.83	14.42	7.58	P: 12.39***
Action	Pre	3.08	1.75	4.92	.67	S: 9.29**
	Post	6.92	2.25	8.92	1.08	P: 5.81*
Role	Pre	0.00	0.00	2.00	3.25	S: 12.78***
	Post	1.25	0.17	8.67	7.08	P: 7.43**

Note. S= Main Effect of Session, T= Session by Training Group Interaction, P= Session by Play Condition Interaction, C= Session by Training Group by Play Condition Interaction.

Pretest builders displayed no role fantasy. Therefore, in order to statistically compare the groups on role, the figure .001 was assigned as a role score for pretest builders.

[a]df= (1,44) *$p < .05$ **$p < .01$ ***$p < .001$

Figure 2

Changes between sessions in the means of non-specific object play for builders and pretenders in the model and control groups

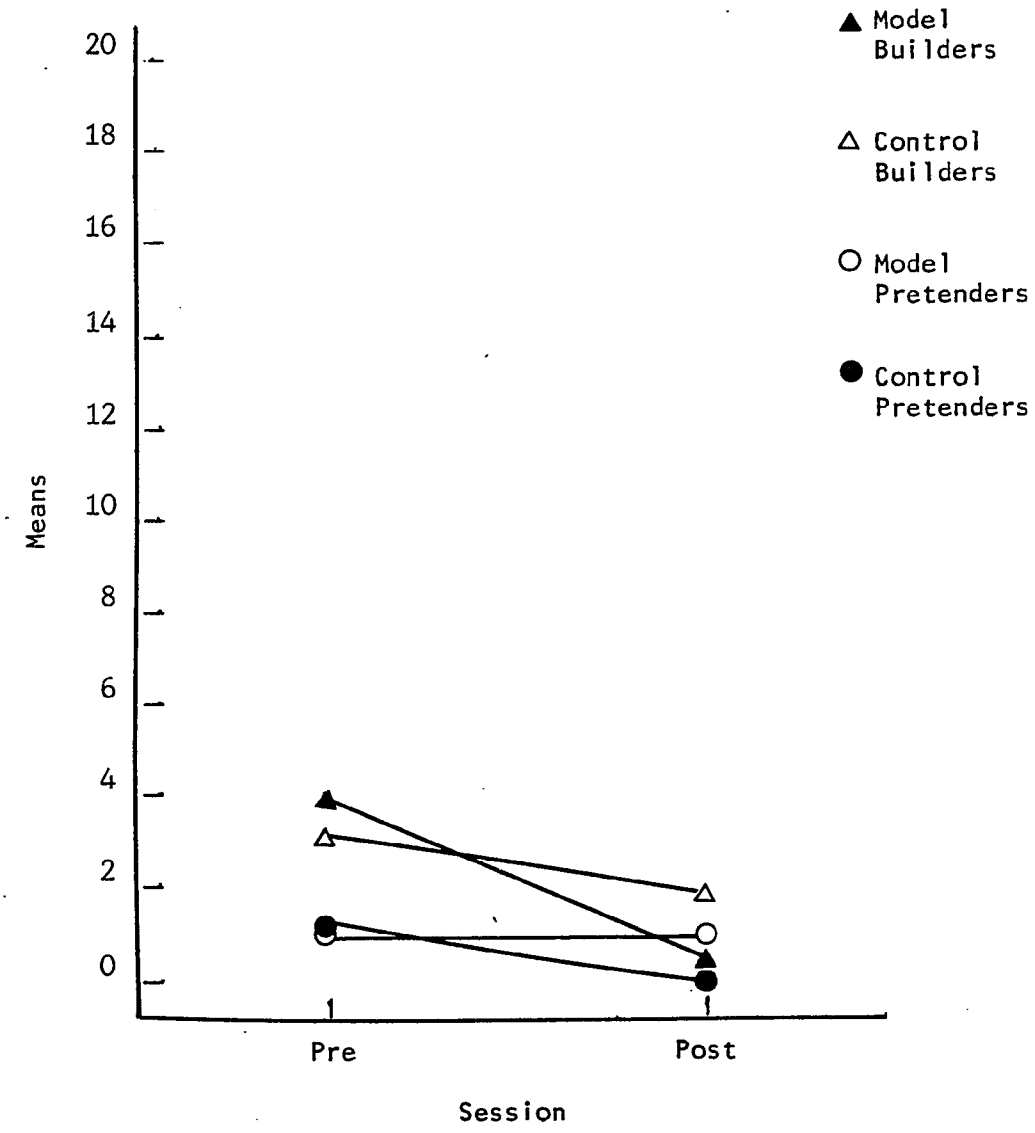
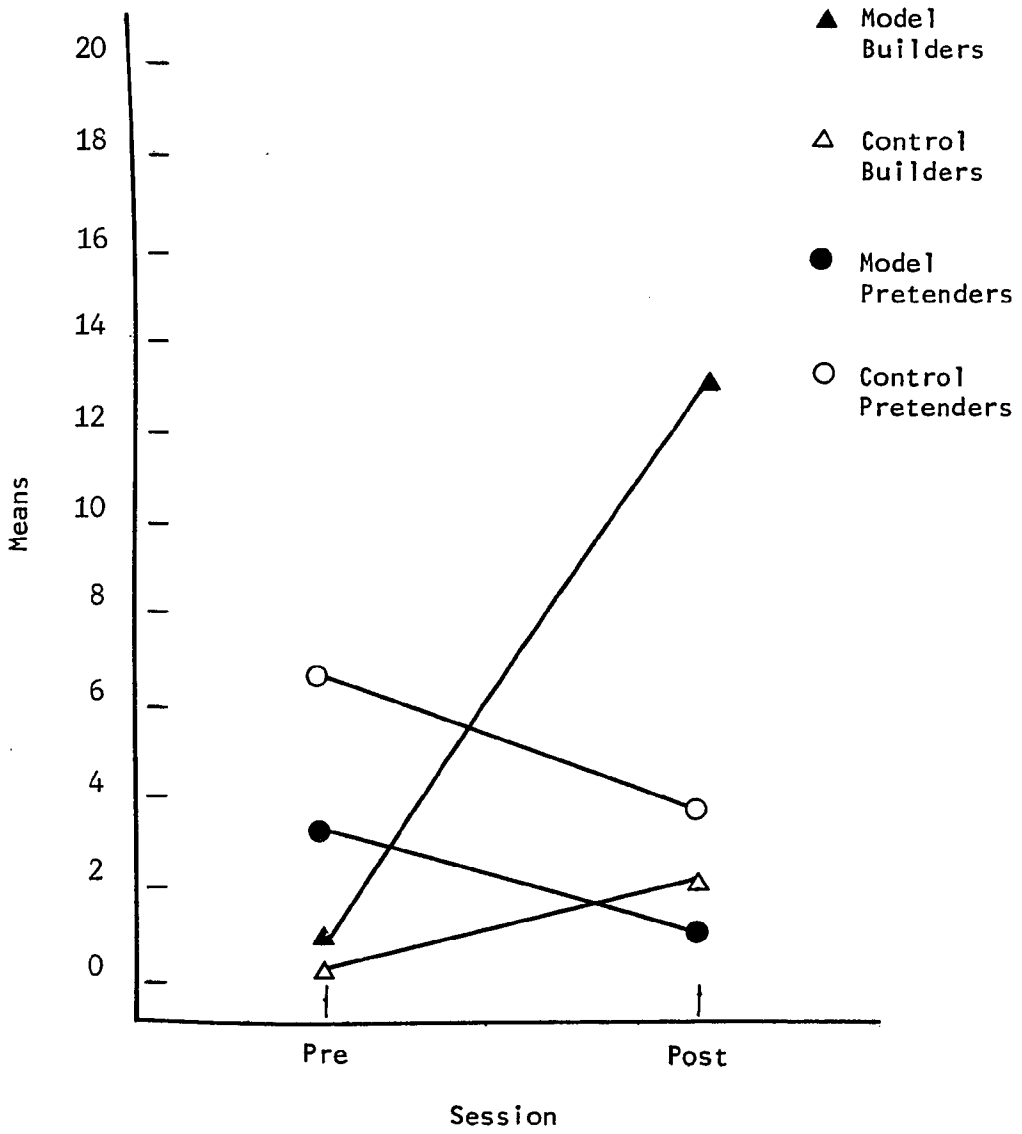


Figure 3

Changes between sessions in the means of joint-specific object play for builders and pretenders in the model and control groups



extent. However, as Figure 3 shows, training greatly increased the frequency of joint-specific object play in the model builder group.

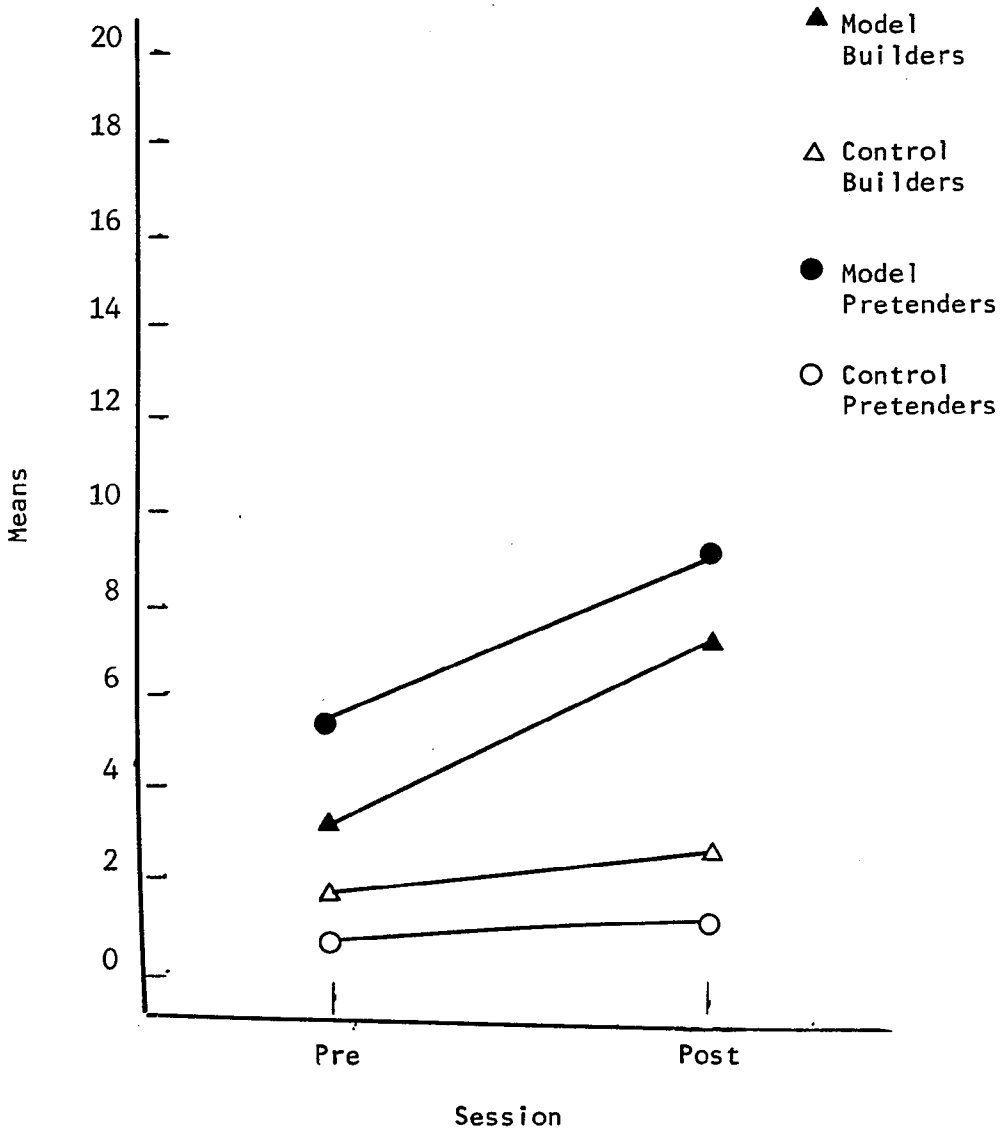
Regarding fantasy play complexity measures, Table 6 reveals that the means in the posttest play sessions were generally higher than the pretest means. However, for each measure, there was also a significant session by play condition interaction. Pretest pretenders were initially more likely to verbalize their plans for the enactment of a fantasy. In their posttest play, they also showed a greater increase in ideational fantasy. As Table 6 shows, model pretenders increased in ideational fantasy to a greater extent than control pretenders.

Training also had the effect of increasing the amount of fantasy which was created primarily through action, as seen in Figure 4. Both model builders and pretenders showed marked increases in the amount of action fantasy. Concomitantly, control builders and pretenders displayed little between session variability on this measure.

In their second chance at play, pretenders greatly exceeded builders in fantasy play in which they assumed an explicit or implicit fantasy role. However, as Table 6 shows, both model and control pretenders increased role fantasy to an equivalent extent.

Figure 4

Changes between sessions in the means of action pretense for builders and pretenders in the model and control groups



In sum, there was significantly less non-specific object play in the posttest sessions. For builders, training increased cooperative, goal directed object play and decreased unfocused, solitary object play. For pretenders, training increased ideational fantasy, but model and control pretenders increased role fantasy to an equal degree. Training increased the physical, non-verbal displays of fantasy for both model builders and pretenders.

Changes in behavior content. The changes which occurred in the proportion of social interaction of builders and pretenders within particular content categories are displayed in Table 7.

For object/constructional play, there were significant interaction effects of both session by play condition and session by training group by play condition. As shown in Figure 5, all pretest groups devoted approximately 30% of all social interaction to reality-based object play. However, the posttest measures of this form of play revealed that training had the opposite effect on builders and pretenders. Whereas model builders increased their mean proportion of reality-based object play to .59, pretenders decreased their proportion of object/constructional play to .07.

There was a significant increase in the mean proportion of fantasy play between sessions, and the increase varied significantly as a function of play condition. As was stated previously,

TABLE 7

Mean Proportion of Behavior Content of Pre and Post Play Sessions by Session, Training Group, and Play Condition

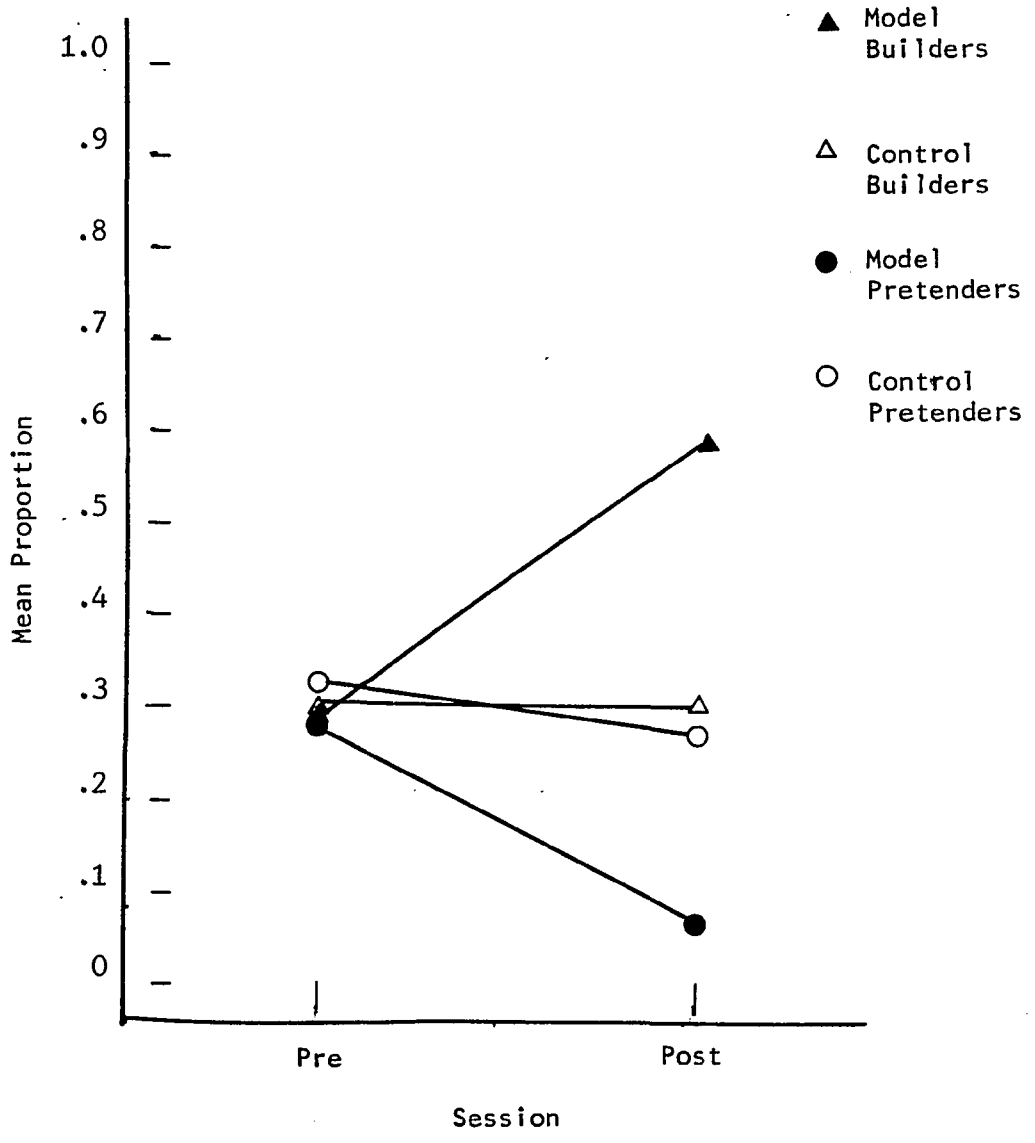
	Session	Builders		Pretenders		Significant Effects
Behavior Content		Model	Control	Model	Control	F Values[a]
Object/Constructional	Pre	.28	.28	.28	.32	P: 13.20***
	Post	.59	.27	.07	.24	C: 8.57**
Fantasy	Pre	.13	.18	.46	.28	S: 11.93***
	Post	.13	.29	.70	.42	P: 3.93*
Material Ownership	Pre	.16	.14	.05	.05	S: 78.89***
	Post	.07	.19	.06	.08	P: 12.36***
Observe Properties	Pre	.27	.22	.14	.18	S: 10.89**
	Post	.11	.16	.09	.14	
Outside Reference	Pre	.05	.11	.01	.05	
	Post	.14	.05	.01	.04	
Affect Displays	Pre	.08	.04	.03	.08	
	Post	.05	.03	.02	.01	
Whisper	Pre	.01	.002	.02	.01	S: 4.41*
	Post	.03	.03	.03	.05	

Note. S= Main Effect of Session, T= Session by Training Group Interaction, P= Session by Play Condition Interaction, C= Session by Training Group by Play Condition Interaction.

[a]df= (1,44) *p< .05 **p< .01 ***p< .001

Figure 5

Changes between sessions in the mean proportion of object/ constructional play for builders and pretenders in the model and control groups



pretest pretenders had a significantly greater proportion of social interaction devoted to symbolic play than did builders. This relationship persisted in the posttest play sessions and model pretenders showed a greater increase in symbolic play than the control group. Second session fantasy-themed interactions account for .70 of model and .42 of control pretenders total social interaction.

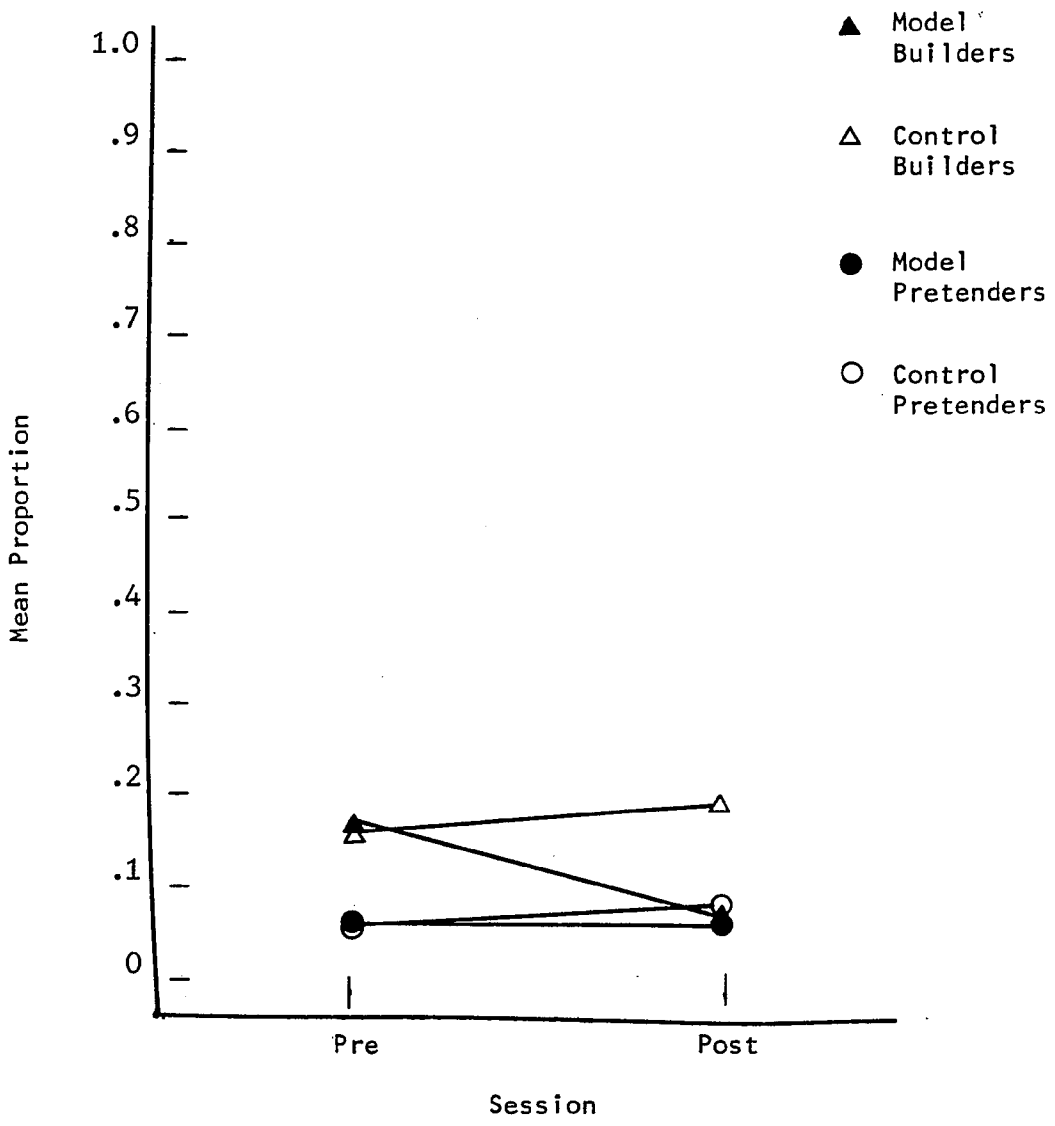
Figure 6 displays the between session changes in the mean proportion of social interaction devoted to material ownership. There was a main effect of session on this variable and a significant session by play condition interaction. As Figure 6 shows, model builders decreased the proportion of social interaction devoted to keeping or obtaining play materials. In posttest play, the mean proportion of material ownership was .07 for model and .19 for control builders.

As displayed in Table 7, there was a significant main effect of session on the category of observe properties. All groups decreased the amount of interaction concerned with examination or description of toys, people and objects in their play setting.

For all groups, there was a low proportion of social interaction in which players referred to things outside the immediate context (outside reference) or displayed positive affect (affect display). There was a main effect of session on whisper.

Figure 6

Changes between sessions in the mean proportion of material ownership for builders and pretenders in the model and control groups



In sum, modeling events for play had a differential effect on the play of builders and pretenders. For model builders, training defined the "towers" task as a context for reality based play. Model builders increased the proportion of social interaction devoted to object/constructional play from .28 to .59 Concomitantly, the proportion of social interaction devoted to fantasy remained at a low level, .13 in both the pre and posttest sessions. In contrast, control builders increased the proportion of fantasy interaction from .18 to .29 and did not show any posttest increase in object/constructional play.

As predicted, training defined the "farmland" task as a context for symbolic play. Model pretenders increased the proportion of social interaction devoted to fantasy play from .46 to .70. Control pretenders also increased fantasy from .28 to .42. However, analysis of the pre-post difference scores of model and control pretenders revealed that model pretenders had a significantly greater increase in fantasy between sessions, $t(22)= 3.56$, $p < .01$.

In general, there were more categories which changed as a function of training for model builders than for model pretenders. In sum, training had more of an effect on the behavior content of builders than pretenders.

Changes in Productive Language

As Table 8 documents, there was a significant change between

TABLE 8

Means for Productive Language Measures from Pre and Post Play Sessions by Session, Training Group, and Play Condition

	Session	Builders		Pretenders		Significant Effects
Productive Language		Model	Control	Model	Control	F Values[a]
Utterance Total	Pre	81.58	58.50	86.33	74.50	S: 11.27**
	Post	89.17	70.92	103.33	88.75	
Conversational Utterance Total	Pre	56.92	36.75	53.66	46.42	S: 940.58***
	Post	64.58	45.25	65.00	57.67	
Social Utterance Total	Pre	73.58	48.12	80.25	71.67	S: 14.30***
	Post	84.0	63.00	98.50	86.17	
Number of Conversations	Pre	7.42	5.25	5.83	6.50	S: 193.58***
	Post	4.25	5.00	4.5	5.67	
Mean Exchange Length	Pre	2.08	2.08	3.17	2.50	S: 8.29**
	Post	4.42	3.08	6.42	4.92	
Maximum Exchange Length	Pre	4.42	4.58	7.00	5.33	S: 9.74**
	Post	8.33	5.42	11.08	7.75	

Note. S= Main Effect of Session, T= Session by Training Group Interaction, P= Session by Play Condition Interaction, C= Session by Training Group by Play Condition Interaction.

[a]df= (1,44) *$p < .05$ **$p < .01$ ***$p < .001$

the first and second play session on all measures of productive language. There was an increase in the total number of utterances and in the number of conversational and social utterances. Although the mean and maximum exchange lengths of conversations increased, the mean number of conversations decreased, reflecting a decrease in topic shifts within the second play session.

No significant change in the number of conversational utterances resulted from the players' observation of adult-modeled events for play. Indeed, neither play training nor play condition contributed to the increased talkativeness of players in their second play sessions. However, it seems probable that participation in the first peer play session accounted for the greater verbal output of players in their second session of play. This factor cannot be independently evaluated from the present data.

Overall, there were few differences between the pre and post sessions of play in the proportions of utterances within particular theme categories. Table 9 displays the mean proportion of conversational utterances for builders and pretenders and model and control groups.

For constructional procedure talk, there was a significant main effect of session and significant session by play condition and session by training group by play condition interactions. Figure 7 displays the changes between sessions on this form of conversational talk in which players discussed their plans for

TABLE 9

Mean Proportion for All Conversation Thematic Measures of Pre and Post Play Sessions by Session, Training Group, and Play Condition

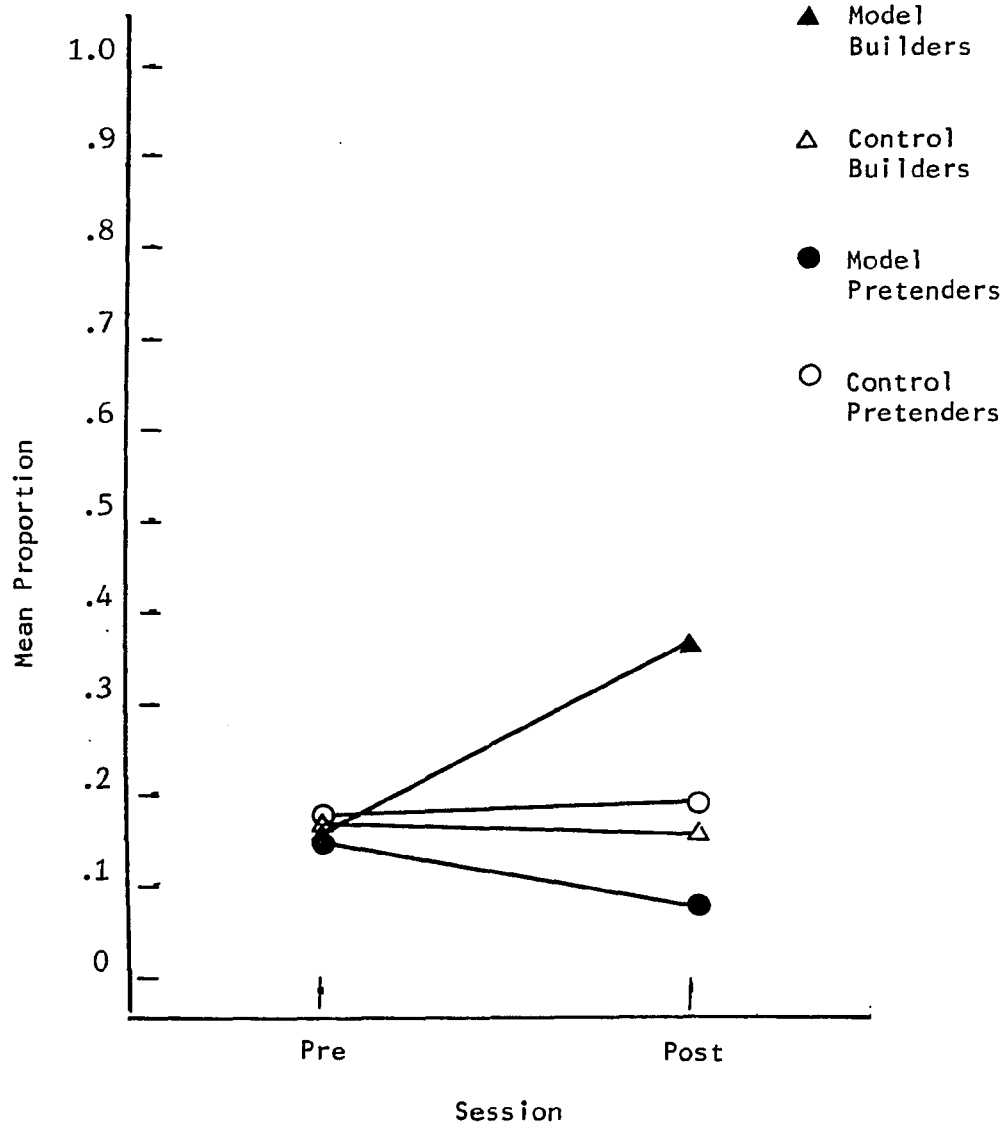
	Session	Builders		Pretenders		Significant Effects
Language Theme		Model	Control	Model	Control	F Values[a]
Constructional						
Procedural	Pre	.14	.16	.16	.17	S: 10.27**
						P: 8.42**
	Post	.36	.14	.07	.18	C: 8.10**
Display	Pre	.13	.04	.01	.01	
	Post	.04	.04	.05	.02	
Observational	Pre	.17	.14	.08	.15	
	Post	.09	.14	.07	.13	
TOTAL	**Pre**	**.44**	**.34**	**.25**	**.33**	
	Post	**.49**	**.32**	**.19**	**.33**	
Pretend						
Transformation	Pre	.03	.06	.03	.01	
	Post	.01	.08	.02	.03	
Procedure	Pre	.04	.05	.18	.07	
	Post	.03	.09	.16	.16	
Enactment	Pre	.01	.07	.07	.05	S: 7.37**
	Post	.03	.07	.23	.10	P: 4.78*
TOTAL	**Pre**	**.08**	**.17**	**.28**	**.13**	S: 83.50***
	Post	**.07**	**.24**	**.42**	**.30**	P: 9.32**
						C: 7.95**
Ownership						
Self	Pre	.07	.07	.03	.02	
	Post	.01	.05	.02	.03	
Other	Pre	.03	.04	.01	.01	
	Post	.01	.08	.01	.02	
Reason	Pre	.03	.003	.005	.004	
	Post	.01	.01	.02	.01	
TOTAL	**Pre**	**.13**	**.11**	**.04**	**.04**	
	Post	**.02**	**.02**	**.02**	**.01**	
Outside Reference	Pre	.05	.02	.01	.04	S: 10.45**
	Post	.01	.04	.01	.03	
Sound Play	Pre	.01	.08	.02	.03	
	Post	.01	.01	.00	.02	

Note. S= Main Effect of Session, T= Session by Training Group Interaction, P= Session by Play Condition Interaction, C= Session by Training Group by Play Condition Interaction.

[a]df= (1,44) *p< .05 **p< .01 ***p< .001

Figure 7

Changes between sessions in the mean proportion of constructional procedure language for builders and pretenders in the model and control groups



creation of a constructional product. Both model groups showed a change in the proportion of constructional procedure talk between sessions. However, model builders increased the proportion of talk in this category from .14 to .36. Model pretenders decreased talk in this category from .16 to .07. Although there were no other significant differences in other constructional categories, builders generally had more of this reality-based talk than pretenders.

There were no significant changes in the proportion of talk within the pretend transformation and procedure categories. However, there was a main effect of session and a significant session by play condition interaction on the mean proportion of pretend enactment talk. Figure 8 displays the changes between sessions in the mean proportion of pretense utterances which were devoted to the enactment of a fantasy role. In the pretest sessions, all groups had a similar amount of pretend enactment talk. However, for the model pretenders, training had the effect of increasing the proportion of talk in this category from .07 to .23. Control pretenders had a more moderate increase in the proportion of talk within this category.

For the total amount of pretend talk, there was a main effect of session and a significant session by play condition and session by training group by play condition interaction. As Figure 9 displays, both model and control pretenders increased

Figure 8

Changes between sessions in the mean proportion of pretend enactment language for builders and pretenders in the model and control groups

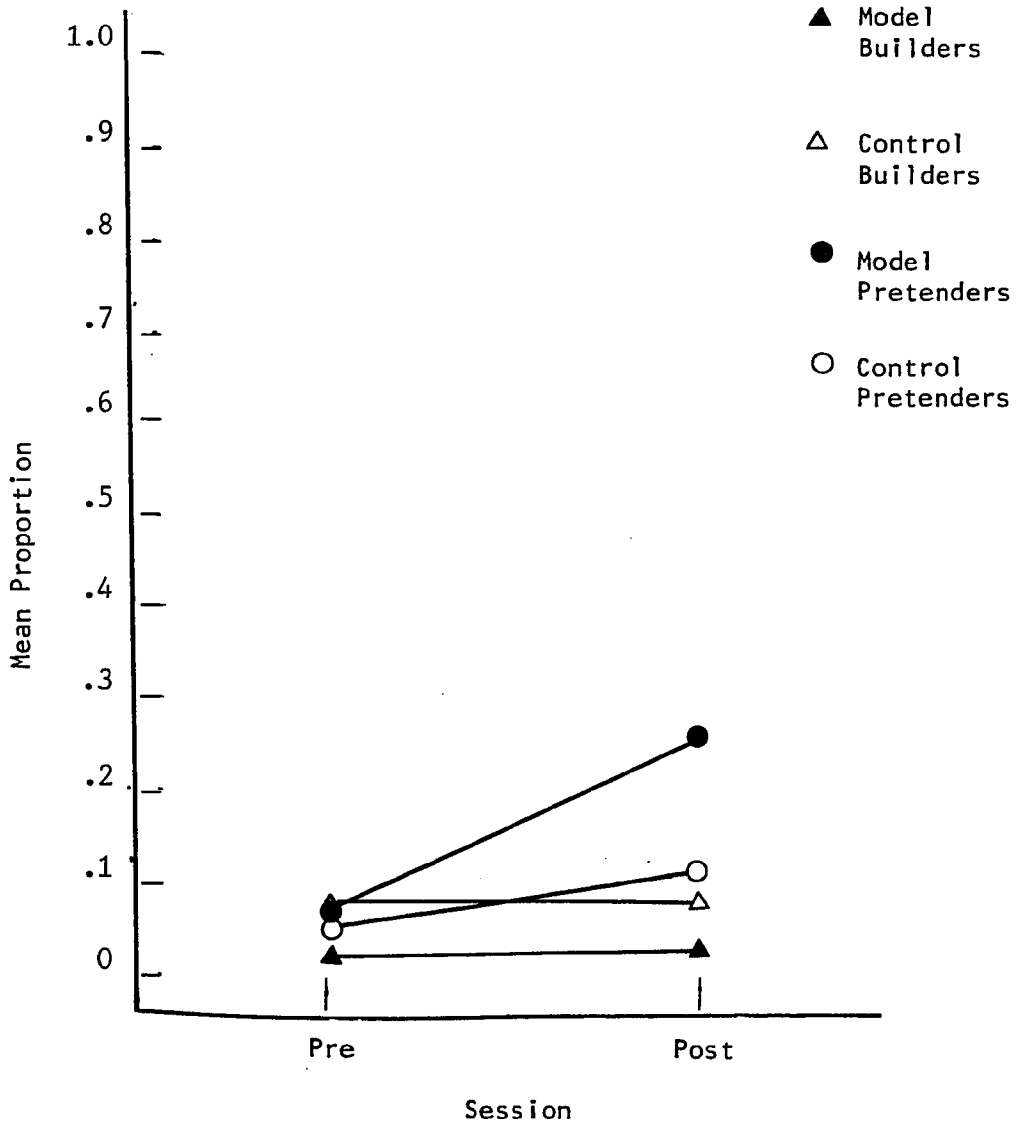
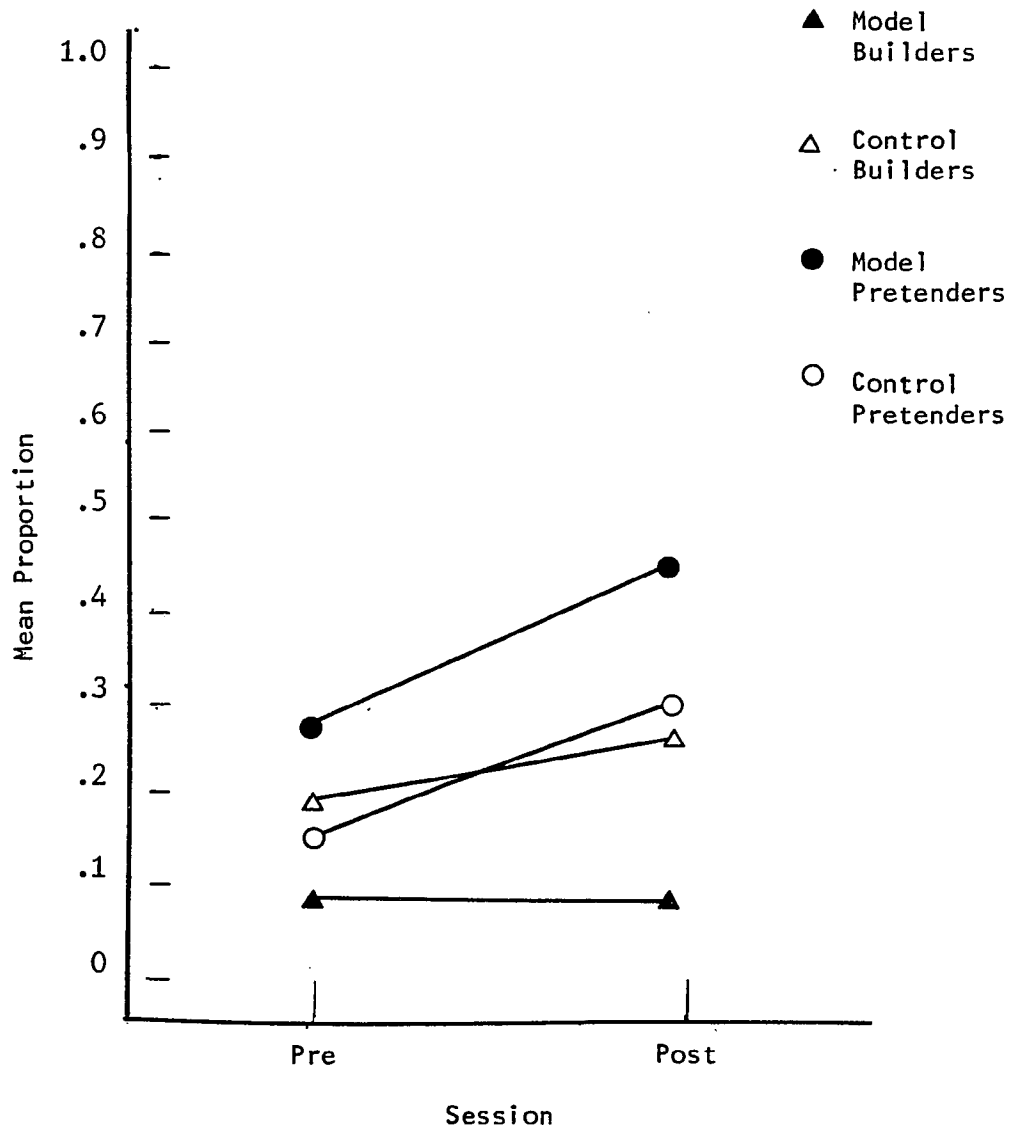


Figure 9

Changes between sessions in the mean proportion of all pretend language for builders and pretenders in the model and control groups



their proportion of talk in which they evoked or sustained a fantasy or imaginative context. The magnitude of the increase was nearly equal for both groups. As with pretend enactment, the proportion of total pretend talk of model builders was stable and low between the first and second sessions.

The only other significant difference between pre and posttest play was the main effect of session on language in the outside reference category. As players became more involved in play, they were less likely to establish topics which were unrelated to the immediate physical context.

In sum, players talked more in their second play session. Although the pre and posttest play sessions were similar in the proportion of conversational utterances within most categories of thematic language, players did change the amount of total pretend, pretend enactment, and constructional procedure talk. These alterations were determined by whether the subject was a builder or pretender. The patterning in both the behavior content and thematic language measures suggests that in their second chance at play: a) pretenders came to identify the play setting as a context for fantasy play and b) builders came to identify the play setting as a context for the creation of three-dimensional representations. The only effects of training were an increase in constructional procedure talk for builders and a increase in pretend enactment talk for pretenders.

Despite the limited effects of playtraining on the conversational features of the players, event knowledge was utilized to structure the talk of players. The adult-modeled events for play were utilized in different ways by builders and pretenders, as will be seen in the next section.

Eventful Content of Pretender Play

The verbal protocols of all the pre and posttest play sessions of both model and control groups were examined to determine what kinds of knowledge structured the fantasy talk of the pretenders.

Table 10 reveals the percentage of dyads who had play structured by 4 different types of knowledge. It is apparent that model players initially had more event-based play than did control pretenders. In the first play sessions, 83% of the model, and 41% of the control pretenders utilized event-based fantasy. For control pretenders, 58% of pretest dyads were object-explorers, who originally defined their play setting as a context for reality-based play. It is probable that the variability in the initial use of event knowledge between model and control groups decreased the likelihood that trained players would display greater conversational and interactive competence than control players in the posttest session.

TABLE 10
Percentage of Pretenders Utilizing Type of Knowledge to Structure Pre and Post Play Sessions for Model and Control Groups

Knowledge Type	Model		Control	
	Pre	Post	Pre	Post
Event	83	58	41	42
Modeled-Event	0	92	0	0
Novel-Event	0	0	0	25
Object-Explorers	17	0	58	33

Note. Since Event and Modeled-Event categories were not mutually exclusive, their sum may be greater than 100%.

The different approaches to the establishment of play through talk suggest that players can utilize both peer generated events for play, adult-modeled events for play, and their actions or objects as a basis for peer interaction. Examples of these different approaches reveal how the pretenders played.

Event. Pretenders in both pre and post play sessions engaged in event-based fantasy around the events of cooking (9 dyads), dining (4 dyads), provisioning (3 dyads), repairing (2 dyads), travel (1 dyad) and averting a threat (2 dyads). This event-based play was structured by scripted conversations. Although the content of these scripted dialogues was similar to previously described event-based play (Seidman, 1983; Nelson & Seidman, 1984), these conversations were generally shorter and less elaborate than the fantasy based conversation of players who interacted in more familiar play contexts. Event-based conversation during play with a sandbox, toy telephones, and playdough were much more detailed than this cooking dialogue:

1. M: Let's heat them up.

Post-Model Play

1. D: There's no food.
   C: Here's some carrots for the bunny. [Walk over and feed bunny] Good, they're finished.

2. D: But the chickens have no food.
   C: But the chickens have no food! I see a man there.

3. D: I see somebody coming.
   C: Get it. A big bowl of chicken food from the store.

4. D: And here it comes! I'm gonna open the pack. Here chick, chick. Here chick, chick.
   C: Pick up the chick. I pick up two chicks.

5. D: Chick, chick, chick. [Calls chickens to her].
   C: And then take the scoops. Take some, take some.

6. D: That's not the way she did it.
   C: I know, but this is the way she did it. And now the rabbits are hungry. The rabbits are hungry again. The rabbits are hungry. Let's dig. Let's keep digging.

7. D: We have no food for the bunnies!
   C: Let dig. Delicious, juicy food for the ___?___. I gonna feed my bunny.

8. D: I'm gonna feed my bunny.
   C: Look what you left here. Here bunny, bunny, bunny.

9. D: I'm gonna feed the baby one. Here baby, here baby.
   C: But we have nothing for the cat.

10. D: We have nothing for the chickens. I see some--
    C: And nothing for the cat. Here cat. Psst, psst, psst.

11. D: I see somebody coming.
    C: I see somebody coming.

12. D: It the chicken man.
    C: Here he comes [C arrives as food store man carrying an imaginary sack of food].

[Girls, Mean age, 55 months].

These players utilized both the modeled event for play and also expanded upon the event structure. They not only fed the rabbit and chickens, but also an imaginary cat. After they enac-

ted the farm event, they moved immediately into playing house, where they assumed the roles of a mother and child. It appears that when players successfully modeled "farmland", this defined the play setting as a context for fantasy, and this fantasy frame supported fantasy which contained more diversity in pretend themes. Indeed for 40% of the pretenders in the model group, their "farmland" play led directly to the development and expansion of an elaborate fantasy which often included thematic content from more prototypic play events. In sum, in both pre and posttest sessions, a higher percentage of model than control pretenders established event based fantasy. Trained pretenders had a greater variety of fantasy themes in their posttest play sessions.

Novel-events. Very rarely, children explicitly established a novel event for play. The structuring of pretenders' play through novel created events occurred only twice, and both occurrences were in the posttest play of control dyads. Bob and Nick presented a vivid illustration of how players created events for play:

1. B: And I have the chicken. And you be inside [the farm]. And we'll be-- And the chickens will be pecking on the roof. And you'll wonder what the noise is. And then we'll keep on doing it. And you say "Hey, stop it out there." Ok?
   N: Ok.

2. B. We need that chicken [peck on roof with chicken].
   N: Hey stop it out there! It's fun. Let's do it again.

3. B: Ok. [Players reverse roles, B goes in house, N bangs on roof].
   N: Hey! Stop it up there. I'm trying to rest. Hey! Stop it up there. I'm trying to rest.

4. B: Again!

   N: Ok. [Players reverse roles].

5. B: Hey, stop it up there!
   N: No. You say "Stop it up there, I'm trying to rest."

   [Boys, Mean age, 53 months].

These players continued in this fashion for 40 more utterances, exchanging roles and constantly re-enacting their novel event for play.

Despite the various ways in which children utilized event-knowledge in their pretend play, some pretenders never established an event-based fantasy.

Object-Explorers. As shown in Table 10, control pretenders were more likely to be categorized as object-explorers in both pre (58%) and post (33%) sessions. Only 17% of pretest model pretenders engaged in this type of reality-based interaction. Object-explorers generally manipulated play objects and commented on the properties of objects or their own actions:

1. S: Hey, you're wiggling the house when you laugh.
   E: You're wiggling the house when you laugh.

2. E: Come on, let's bring our spoons.
   S: Yeah.

3. E: Hey, let's change chickens.
   S: Yeah. Thank you.

4. E: You're welcome.
   S: Hey let's change spoons.

5. E: Ok. But not the chickens. Not the chickens.
   S: Ok.

[Boys, Mean age, 51 months]

In summary, several layers of event knowledge are utilized by pretenders. Players employed prototypic event schemas of the sort that were previously identified by Garvey & Berndt (1977) as being the cognitive basis of peer fantasy plans. Peers also utilized adult-modeled events in their pretend play performances. Players rarely used language to create novel events for play.

However, in any play context, peers always have the option of maintaining the real identity of objects and people. The factors that determine peers' decisions to identify a setting for fantasy or object/constructional play are not fully understood. El'Konin (1966) reported that children who first engaged in object play with blocks and plates shifted to fantasy after an adult suggested a subject for play and assigned roles to the players. However, peers must often rely on each other to find a subject for fantasy play, and it has been shown that players move in and out of fantasy (Seidman, 1983b). It is possible that both knowledge of the properties of objects and the kinds of actions

those objects afford help peers determine the event content of fantasy.

Constructional Products of Builders

Recall that for builders, training had the effect of increasing joint-specific object play. However, as is shown in Table 11, the majority of builders from all groups made specific constructional products. What distinguished model and control builders was the use of the adult-modeled event for building. The talk of the players who were within particular product categories explicates the qualitative difference in the posttest play of model and control builders.

None. In the model group, thirty-three percent of pretest builders and 17% of posttest builders used the building task as a context for object exploration. Talk accompanying this kind of object play consisted of discourse on material ownership and on the properties of objects:

1. J: It [toy] will break?
   T: No.

2. J: It's breaking?
   T: No, its not gonna break.

   [Girls, Mean age, 51 months].

Most players, however, built one or more products which they labeled in the course of their play.

TABLE 11

Percentage of Builders Producing Types of Knowledge to Structure Pre and Post Play Sessions for Model and Control Groups

Product Type	Model		Control	
	Pre	Post	Pre	Post
None	33	17	0	17
Specific	67	58	92	83
Model-Specific	0	67	0	0

Note. Since Specific and Model-Specific categories were not mutually exclusive, their sum may be greater than 100%.

Specific. Builders often made more than one constructional product. New constructions were created by changing the physical configuration of a structure. Then, players would observe what the construction physically resembeled, and name the product based on its physical appearance. This process is illustrated by the following conversational exchange:

1. K: That look's like an X-wing fighter.
   G: It isn't an X-wing fighter.

2. K: It looks like one. Is that a space shuttle?
   G: No. Its an Ewok.

3. K: How come you changed it?
   G: I put it back wrong.

   [Boys, Mean age, 65 months].

Some children would produce a whole collection of products that were unified by a particular fantasy theme. For example, one control dyad made a collection of Star Wars props, a Night Rider Ship, a Robot Ship and a lifesaver (Star Wars gun). With these constructions, they orchestrated an elaborate outer space dual.

Control builders, in particular, often produced many different constructional products in their second play session, including boats, a juicer, a castle, a bowling set, rifle, guns, telephone, cars, street light, door, crab, a pond and a hammer.

Model-Specific. Players who observed the adult-model event for constructional play changed the goal of their play. These players adopted the task of "building towers" as the goal of their interaction. The players' talk consisted of protracted conversations about the procedures they should follow to accomplish this goal:

1. R: Then you put another one?
   C: No this.

2. R: Put this here like that? And put one, one here.
   C: Look. One bar.

3. R: And one more, and there we go.
   C: And there we go.

4. R: And you put--
   C: No! Look. See ? Stupid! You have to put them together. Put that there and put them like this. And put another one.

5. R: No, you don't put another one.
   C: Yes, she did it like that. Put on two bars.

6. R: No we have two. Now we're stuck together. You forgot another one. No, its the side. You didn't do it yet. You have to put it like that. Then another one and that's it.
   C: Here's one. I got one more right?

7. R: Yeah. Hey, there's another one.
   C: Another one.

8. R: Look girl, we did it!
   C: She put, she put these, these right?

9. R: Yeah, right.
   C: Now we did it [Both clap].

After the modeled construction was completed, the players continued to work together on this construction:

1. R: We did it nice, right?
   C: [Nods]

2. R: You wanna keep it like this. Look, we have a few. Let's put some on here, right?
   C: Then we'll make it more prettier.

3. R: More prettier.
   C: Right?

4. R: More prettier
   C: More prettier.

[Girls, Mean age, 56 months]

In summary, knowledge of object properties, object combinations, physical similarities, and procedural knowledge all contributed to builders' competence in creating constructional products. Sometimes, the builders' play was focused on the ownership, display, and description of the properties of the play materials. More often, builders would experiment with various arrangements of building materials until they found a configuration which was a satisfactory replica of a real world object. Peers were also capable of working together to produce a particular constructional product. Once players had both a goal and a procedure for construction, they were able to build a product and evaluate each other's contribution toward the successful completion of the goal.

Thus, peer builders utilized the materials in three ways: a) as objects to manipulate, exchange, and display; b) for exploration of constructional possibilities and c) for planned creation of a particular constructional product. Whether these differences reflect developmental changes in peers' ability to engage in constructional play is a question for further research.

Results Summary

First session play. What builders and pretenders did and said in spontaneous play differed in a number of ways. Builders were generally less sociable and more of their social interactions were directed by only one player. In contrast, pretenders were more collaborative and shared an equal role in maintaining social contact. Although players did not differ significantly in the proportion of interactions devoted to object/constructional play, their object play was qualitatively different. Builders were more likely to engage in solitary object play in which they did not communicate what they were building. In contrast, pretenders more often manipulated objects together, and communicated the purpose of their object play. Both behavioral and language measures of material ownership showed that builders were more concerned with obtaining play materials than pretenders. Builders more often used language to focus attention on their

constructional products, whereas pretenders more often planned fantasy in their talk.

Changes in symbolic performances. There were a number of differences between the pre and posttest sessions. All groups of posttest players were more social, as evidenced by their greater amount of social interaction, social speech, and conversational speech. Players were more focused on play; there was a decrease in interaction in the non-play behavioral categories of observe properties and outside reference. Posttest players planned more. They had less non-specific object play and more differential collaboration in which each child performed a different task related to a common goal.

There were a few domain-specific changes which occurred only in the posttest play of pretenders. In these instances, both model and control groups displayed the same pattern of change between the pre and posttest sessions. Posttest pretenders increased the amount and complexity of fantasy. They displayed more role taking, more fantasy-based interaction, and more conversational speech devoted to the establishment and maintenance of fantasy.

The only common effect of training on the play of builders and pretenders was an increase in action-based pretense, e.g., flying like a bird.

There were a number of specific effects of training on the posttest play of both builders and pretenders. Model pretenders were more sociable. They had less reality-based object/constructional play and less talk about procedures for object play. They expressed more fantasy ideas, and their talk was more often devoted to the enactment of a fantasy role.

Model builders had less one-sided interaction. Their object/constructional play was more deliberate. They decreased non-specific and increased joint-specific object play. They devoted more of their social speech and interaction to constructional play. Model builders had a decrease in material ownership, an increase in object/constructional play, and more of their talk was devoted to discussions of procedures for building.

Knowledge for structuring play. A qualitative analysis revealed that in their posttest play, trained builders and pretenders were able to utilize the information modeled by the adult in subsequent play. In posttest play, pretenders structured play by either talking about the real properties of the play environment or by utilizing specific action formats or scripts for play. In addition, model pretenders usually incorporated the "farmland" event into their posttest play. All builders' posttest play was structured by talk of making specific constructional products. The majority of model builders utilized the

procedure for building towers to structure their talk and action in their second session of play.

In summary, there were social interaction and behavioral content differences in the spontaneous play of builders and pretenders. Between the first and second sessions, play changed as a function of: a) prior participation in play; b) playing in a pretend context and c) training. Training had different effects on the social interaction and behavior content of builders and pretenders.

Discussion

In general, an intergrative view of symbolic development was supported. There were both unique features and commonalities between builders' and pretenders' play. In support of a domain specific view of play, builders' and pretenders' social interaction during their first session of play could be distinguished on a number of dimensions. The content of builder and pretender play revealed that there were important differences in the interactive goals pursued by the two groups of players. However, contrary to expectations, and in support of the semiotic view of play, both groups had the same amount of social speech, conversational speech, and mean and maximum exchange length for their conversations.

The centrality of event knowledge in pretend play and procedural knowledge in constructional play was also supported. Training shifted play into more particular domains of symbolization. Model pretenders engaged in more symbolic play, but, contrary to expectation, they did not engage in more collaborative interaction or conversational speech. Model builders engaged in more object/constructional play as their talk and interaction became more governed by the domain of three-dimensional representation.

The discussion is organized by presenting comparative descriptions of the properties and characteristics of builders' and pretenders social play. Results are discussed both in terms of what they contribute to a intergrative view of play and, more more generally, to the study of preschool children's social symbolic performances.

Social Interaction of Builders and Pretenders

Pretender play is more social, builder play more solitary. Often, when one builder initiates social interaction, the co-player responds only minimally to the social bid. In contrast, pretenders are more likely to share the interactive load. Both pretenders contribute to the development of a conversation and focus on the same interaction goal.

Although the social interaction of a target child has been studied in free play settings (Parten, 1932; Rubin, Maionit Hornung, 1976), this is the only study which documents that the domain of play employed has an effect on peers' social participation. It is probable that the differences in their pattern of social interaction reflect their prior experience in learning how to play. Researchers have described how, when learning to draw, children are also learning to define this activity as an "individual task" (Gearheart & Newman, 1980). It is not unusual for an American preschool child to be instructed to "build by yourself,

using your own blocks." Through this message, teachers and parents reinforce a child's definition of building as a context for individual activity. Additionally, success in constructional play does not require collaboration. Most children can make an acceptable constructional product without involving their partner. Pretend play, on the other hand, is tied to interpersonal experience (Garvey, 1982). Therefore, pretending in the company of a peer comes to mean pretending with a peer. Successful symbolic play requires constant attention to the co-player as players adjust and vary roles and action in accordance with the behavior of the partner. Perhaps successful pretense is more dependent on social skill than successful constructional play.

There are two implications of these results which should guide further study of peer play. First, it is possible that pretense play will generally support peer social interaction, whereas providing of building materials will generally lead to more independent peer play. These predictions warrant further research. Second, solitary and collective symbolism may have a different developmental course. There is one study which suggests that solitary and collaborative forms of pretense have a different developmental course and that collective is more difficult than solitary pretence (Fein, Moorin & Enslein, 1983). Any domain-specific model of play must consider how skills needed for

symbolic competence may differ in collaborative versus individual symbolic activities.

Content of Builder and Pretender Play

There were both similarities and differences in the proportion of time builders and pretenders devoted to particular interactive goals. Both play groups were alike in that one-third of peer social interaction was comprised of object/constructional play. This is not surprising as prior studies have shown that peer play sessions move back and forth between fantasy and reality based interactions (Seidman, 1983; Garvey, 1982; Gottman, 1983).

Pretenders, however, engaged in more fantasy, and more of their social speech was devoted to specifying plans for pretense. For builders, material ownership talk and behavior was more prominent. In keeping with the individual nature of builder play, expressions such as "Look what I made" were more likely to occur in their play talk. These content differences are understandable in light of the different interactive patterns of builder and pretender play. Builders had a higher amount of talk about material ownership--it functioned to allow them to complete their solo construction. Pretenders' engagement in a higher amount of collaborative interaction was a prerequisite to the establishment of fantasy. Sachs, Goldman and Chaille (1984) documented that

preschool children's planning in pretend play requires the use of language to develop a fantasy.

These results have theoretical implications for the study of peer play. It appears to be of questionable utility to consider practice or functional play, games of make-believe, and constructional games as existing in a hierarchical relationship to each other (Piaget, 1946). Rather, peer play is a heterogeneous activity in which both builders and pretenders engage in a fair amount of object constructional play. These data support an alternative view of the relationship between different types of play forms. For peers in their fifth and sixth years of life, there is a coordinate, rather than a hierarchical relationship between their object constructional and fantasy play.

During symbolic performances, peers have the option to either pursue reality or fantasy based goals. Indeed, some of the pretender dyads engaged in little fantasy throughout their five minute pretest session. Thus, theories of social play must address the issue of what factors govern children's perception of activities as opportunities for fantasy or for object/constructional play. Certain play materials are likely to afford certain types of play (i.e., blocks for constructional play), but any material may theoretically be transformed and utilized in fantasy play. A partial answer to this question emerges when the changes accompanying play training are described.

Structure of Players' Social Speech

Based on the evidence, productive language does not vary as a function of whether peers are engaged in builder or pretender play. In general, the mean and maximum exchange lengths of the players conversations were much lower than when peer talk was recorded during sandbox, play kitchen, and toy telephone play (Seidman, 1983). The fact that children were unlikely to have any prior peer play experience within the "farmland" and "tower" settings accounted for the difference between the current and prior assessment of young children's conversational capacities during play.

Interpretation of the finding that there is no difference between the structure of discourse builders and pretenders is problematic. As was already described, both builders' and pretenders' play often contained talk devoted to both pretend and object constructional play. Therefore, even if talk which accompanied and created symbolic play had different structural properties from constructional play talk, the differences could be obscured by the comparison of all builder and pretender language. However, if all the "pretend" talk was compared to all the "constructional" talk, differences might emerge from this comparison. When this strategy of analysis was adopted, it was the case that peer object play conversations were shorter and

less elaborate than pretend conversations (Nelson & Seidman, 1984).

In conclusion, these results indicate that the structure of their discourse does not distinguish the symbolic performances of builders and pretenders, providing support for a semiotic view of play.

The Micro Development of Play

Pre post test analyses revealed information on how knowledge and experience affect the symbolic performances of peers. Although not specifically predicted, there were significant changes in the social behavior, language, and interaction of the peers in the second sessions of play. Shared event knowledge and constructional procedures were central to children's ability to engage in symbolic and constructional play. Contrary to expectation, builders and pretenders in the adult-modeled group did not display greater conversational and interactive competence than the control group players. However, analysis of interaction effects revealed that play training had a differential effect on the two play groups. Builders focused more on constructional play, pretenders engaged in more complex fantasy play. Both groups incorporated the adult-modeled information into their second play sessions. These results provide additional

information on the common and unique qualities and skills which influence peer performances in symbolic and constructional play.

Common Processes Affecting Builders and Pretenders

All groups of players engaged in significantly more social and conversational speech in their second play sessions. Players were more social, more deliberate and more focused on play. These was less non-specific object play, and more high level collaboration in which each child performed a different task related to a common goal.

Prior to the second play sessions, model and control players were alike in two respects. First, both groups of players participated in a peer play session of equal length with access to the same play materials. Second, all players received an instruction which set the goal for the posttest play activity. Builders were instructed "Build towers together" and pretenders to "Play farmland together". Therefore, it seems logical to infer that both experience and having a goal for play caused the observed changes.

The importance of these results is that they identify cross-domain modifiers of peer play behavior, and provide support for a semiotic view of play. Recently, a number of researchers emphasized that the language situation can systematically minimize or maximize the language competence of young children (Cole,

Dore, Hall & Dowley, 1978). In particular, the physical location, number of participants, setting and task of an interaction all influence the discourse production of nursery school children (Dore, 1978). However, the way in which any one factor or a combination of factors will affect discourse production is not specified. This study provides evidence that having both a goal and prior experience in a play situation will lead to a subsequent increase in preschool peers' conversational competence. The extent to which the relationship generalizes to other builder and pretender play tasks deserves further research.

Processes Affecting All Pretenders

Pretenders were generally less influenced by training than were builders. The evidence for this statement is that there were a number of dimensions in which pretender play changed significantly between sessions, regardless of whether pretenders were in the model or control groups. More of their posttest speech was devoted to the establishment and maintenance of fantasy. Their behavior measures indicate that they had more fantasy-based interaction and were more likely to assume a socio-dramatic role.

These findings provide insight on the factors which lead peers to define an interaction as a context for fantasizing. El'Konin (1966) discovered that when children were assigned a

role and a pretend theme, their play with blocks and small plates changed from manipulative object play to elaborate fantasy play. The present study was like El'Konin's in that control pretenders were also provided with a goal and a theme for fantasy, "play farmland." Thus, suggesting a theme and modeling a script for fantasy were equally effective in increasing the fantasy and role-taking of the pretenders.

These findings do not mean that event-knowledge was unimportant in the establishment and maintenance of fantasy. As we shall see, there were non-trivial differences between model and control pretenders. However, results indicate that while discovery of an event for pretense is necessary for supporting fantasy, knowledge of a specific way to play is not. As Corsaro (1983) indicated, successful pretenders must negotiate meaning with other interactive partners until a mutual understanding of how to "play out" an event is reached. Thus, pretenders who observed the adult-modeled script still needed to "translate" the farmland event into a social performance in which each player was comfortable with his or her role and interpretation of the event. In further research on the role of event knowledge is fantasy play, an attempt should be made to investigate both the processes involved in establishment of events, and how the social and linguistic skill of the players affects their negotiation of event-based play.

Effects of Play Training

The differentiation of builders' play. As predicted, adult-modeling of specific constructional procedures moved builders' play more into the domain of three-dimensional representation, and the content of this play was significantly different from pretender play. This shift into constructional play was marked by an increase in both object/constructional interactions and constructional procedure-themed language. Training also led to a significant decrease in solitary, manipulative play and an increase in the proportion of playtime in which builders worked together to create a specific constructional product. Trained builders had less one-sided interaction, and the changed definition of building as a more social activity was reflected in the decrease in their attempts to hoard play materials. As already described, 67% of the model builders utilized adult-modeled building procedure to structure their posttest play. Therefore, it is logical to assume that the builder's training was responsible for the differential symbolic performances of the model and control builders during their second chance at play.

The results illuminate some of the processes involved in peers' ability to engage in social constructional play. The creation of a constructional product is the essence of constructional play. By definition, social constructional play entails three-dimensional depiction. Model builders were more adept at

creating buildings because they followed procedures, or particular "ways of doing things" (Mandler, 1983). More specifically, digital mapping was the primary cognitive resource utilized in social constructional play.

In reconstructing the tower, trained builders were required to use a precise number of plastic bars and tubes and coordinate the horizontal and vertical dimensions of the building. In configuration, the tower was step-like, with identical left and right towers connected by a higher, middle tower. The skills required for success at digital mapping emerge between the ages of four and five (Gardner & Wolf, 1983). It was therefore, not suprising that players were able to build towers. What is remarkable is that adult-modeling focused peer play on constructional activity, thus revealing the unique patterns of social interaction, behavior and language which accompany play within the domain of three-dimensional representations.

The capacity to engage in focused constructional play with a peer is a function of a child's ability use the skill of digital mapping in building with a peer in social constructional play. Further research is needed to trace the development of this skill across the preschool years.

The differentiation of pretender play. Model and control pretenders' second session of play generally contained more fantasy-based play. However, model pretenders showed additional

movement into the domain of symbolic play. Trained pretenders were more social, and their play was less-reality based. They devoted less of their playtime to object/constructional play and had less total constructional-themed talk. At the same time, more of their language involved the assumption of a fantasy role, and their fantasy interactions contained more higher level ideational fantasy.

Past research revealed that adult-modeled social role scenarios (Watson & Fischer, 1977), action sequences (Fenson & Ramsay, 1981) and script scenarios (Fenson, 1984; Bretherton, O'Connell, Bates & Shore, 1984) all lead to more complex individual fantasy play. But since these studies did not include control groups, it is not safe to conclude that the modeling of the script was the cause of the observed changes. The present study provides more definitive proof that the adult-modeling of events for play decreased reality-based play, and increased fantasy-based talk and action in the dyadic play of pretenders. The fact that 92% of the pretenders incorporated the "farmland" script into their posttest play sessions provides additional assurance that utilization of specific events to structure fantasy was responsible for the differential changes in the model pretend group.

Event modeling did not, as predicted, lead to greater conversational and interactive competence. This negative finding underscores the fact that there is no simple relationship between

the representation of an individual and the use of knowledge in conversation (Van Dijk, 1981). Especially in play, where given meaning may change constantly, a short-period of adult-modeling of a specific event does not significantly improve general capacity to share knowledge in action and talk. As already described, pretenders negotiate information in fantasy play. This suggests that skill in peer interaction influences children's ability to share scripted fantasy.

The differentiation of play talk. Some of the various ways in which children used words to define builder and pretender play have already been described. In general, posttest pretenders used language for establishing and maintaining fantasy. Trained pretenders' reality-based play talk was also inhibited. Trained builders' social speech was specifically tied to the task-at-hand, building towers. While they tried various bar and tube arrangements, they discussed whether what they did looked "right". Pretend play talk was fluid, the emphasis was on creating and developing a particular theme. In contrast, builder play talk was focused and didactic, consisting of self-evaluations and co-partner judgments of the building efforts. It is recognized that a more systematic analysis of the transcripts is necessary to document these differences. However, the unique style and function of the players' talk suggest that older peers have well developed repertoires of both pretend talk and task talk.

Whether there are boundaries and/or differences between "task talk" and "constructional play talk" are presently unknown.

Knowledge for Structuring Play

In sum, the research reveals that in play, peers display social behavior directed to both fantasy and reality-based goals, and that the form of social behavior varies with the play task. Builders associate, pretenders collaborate. Preschoolers' play changed when players had a play goal and prior experience playing with a peer in a particular context. For trained builders, play became more of a context for 3-dimensional representation. Trained pretenders subsequently engaged in more symbolic play. This differentiation of symbolization was marked by shifts in the proportion of interactive goals within particular categories of social speech and behavior.

There were also cross-domain modifers of peer play. For both builders and pretenders, conversational competence increased when players had prior experience in a play situation and a goal for play. These data support the semiotic view of play, and lead to the identification of a common process influencing symbolic performance in both play forms.

In addition, the study provides evidence that both peer generated and adult-modeled scripts for play support fantasy, whereas the creation of constructional products is more dependent

upon utilization of procedural knowledge and digital mapping skills.

Conclusion

This study identifies three principles which apply to the study of social symbolic performance. First, adults can dramatically change the content of peer play. Much of the prior training research has focused on how to change play rather than what to change in play (Gottman, 1983). This study provides evidence that adults can change the relative amounts of both fantasy and object/constructional action and talk of peer players. This suggests that early childhood educators can actively facilitate the play of peers who do not spontaneously engage in fantasy or constructional play.

Second, there are characteristic patterns of behavior which accompany competent symbolic performances in particular domains of symbolization. Further, different domains of symbolization rely on different skills. For older preschoolers, the differential features of pretend and constructional play have already been described. It is expected that between 2 and 6 years of age, peer action and talk in pretend and constructional play activities becomes more distinctive. It is probable that across their preschool years, peers learn to construct separate domains of play. This achievement reflects the development of more dif-

ferentiated systems of symbolic functioning (Werner & Kaplan, 1963).

Third, there are general factors which affect the display of symbolic performance regardless of the domain of symbolization employed. In particular, having both a goal for activity and prior play experience with a peer will increase social and interactive competence in play.

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