THE ROLE OF PLAYTHING STRUCTURE IN THE PROMPTING OF IMAGINATIVE BEHAVIOUR

by

Anne Carr

Teacher's Certificate, Goldsmiths College,
University of London, 1969.

Diploma in Nursery Education,
London University, Institute of Education, 1975.

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Name: Anne Carr

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Examining Committee

Chairman: Cornel Hamm

Roger Gehlbach
Senior Supervisor

Janet Kendall
Assistant Professor

Hanna Polowy
Associate Professor
Faculty of Education
(Early Childhood)
University of British Columbia

Date approved March 12, 1981

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THE ROLE OF PLAYTHING STRUCTURE IN THE PROMPTING OF IMAGINATIVE BEHAVIOUR

Author:

(signature)

Anne Carr

(name)

12th March 1981

(date)

ABSTRACT

Both affective and cognitive theorists have stressed the value of young children's imaginative play. Whereas psychoanalytic theorists make use of imaginative play as a therapeutic tool, cognitive theorists link imaginative play with general intellectual development. Initially, children's activities are governed by the conventional uses of familiar objects. Their imaginative behaviour is iconically stimulated. Later more remote and non-literal ideas and symbols from the child's past experience determine significance. Such remotely governed behaviour is termed symbolic imaginative in this paper. Applied researchers contend that the functional specificity of a plaything which resembles an everyday object, e.g. a firetruck, requires less cognitive activity than a functionally non-specific plaything, e.g. blocks. Additionally, it is contended that if a realistic plaything were to be used symbolically it would require relatively complex cognitive transformations.

The purpose of this study was to test two hypotheses. The first hypothesis was that a structured or realistic plaything would elicit a higher frequency of iconic imaginative behaviours (that is, sign stimulated) than a less structured plaything. The rationale for this hypothesis was that structure in a plaything would, via its relationship to children's prior experiences, prompt responses related to identities and themes normally associated with a given type of plaything

(e.g. firetruck). The second hypothesis was that practice in altering the literalness of a plaything would result in a frequency of symbolic imaginative behaviour (that is, governed by more remote non-literal ideas or symbols) above baseline for an unstructured plaything. The rationale for this hypothesis was that by changing the meaning of a physical object with the addition and removal of key identifying (realistic) parts (e.g. ladders to a firetruck), the first steps toward symbolic imaginative behaviour would be produced. The first hypothesis was joined with the second hypothesis in the design of a plaything that could be modified to produce two conditions; unstructured and structured. The structured condition consisted of three alternative versions of realistic vehicles through the simple attachment and removal of appropriately realistic accessories. The unstructured condition had no accessories available.

The experiment was organized as a single case time series analysis design with one replication. Subjects were three boys and one girl aged between 36 and 60 months. The experiment consisted of seventeen sessions conducted over four weeks. Eleven dependent variables were measured and subjected to analysis.

Results supported hypothesis I, indicating that the structured plaything produced more iconic imaginative behaviour than the unstructured plaything. There was also more investigation, concentration and cooperation with the structured plaything. Results did not support hypothesis II that symbolic imaginative

behaviour can be stimulated through practice with changing the meaning of a concrete object.

An important educational implication derived from this study is that provision of realistic stimuli will reliably prompt iconic imaginative behaviour. Furthermore, with an adequate past personal history of iconically stimulated imaginative responses, symbolic imaginative behaviour should occur. There are two major practical implications regarding playthings that can (a) reliably prompt certain iconic behaviours in connection with the addition of certain realistic accessories and (b) also elicit symbolic behaviours and themes. First, such playthings would be cost-effective, vis-a-vis trained personnel and second, they would increase the desired imaginative quality of free play whether or not an adult were present.

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CHAPTER I

Introduction

The value of imaginative behaviour has been addressed by both cognitive and affective theorists. Psychoanalytic theorists (A. Freud, 1936; Greenacre, 1959; Klein, 1952) view the imaginative play of children as cathartic and communicative and make use of play as a major therapeutic tool with children. Erikson (1950) stresses the coping rather than the drive-reducing aspects of imaginative play. He also notes the pleasure derived from the sense of mastery involved in the imaginative role-play of young children, in which they try out new experiences and relive old experiences.

Piaget links symbolic play with general intellectual growth. He considers the imaginative play of children as necessary to their cognitive development toward operational thought. Through symbolic play, abilities are developed, fixed and retained. Play in early infancy consists in the exercise of the child's developing functions, irrespective of the material handled, which Piaget names 'practice games' (1951). Symbolic play emerges in the second year of life and presupposes not only that the child's actions have acquired meaning in relation to the objects around him but also that he is developing the ability to represent an absent object or experience by means of his own actions, usually with the aid of objects that resemble the represented content to a greater or lesser degree. The emergence of this type of play coincides

with that of verbal language and both are seen as manifestations of the same representative function, according to Piaget (1951). For example, Piaget notes the behaviour of his daughter, who, at sixteen months, imitated a temper tantrum she had observed the previous day, having stored some representation of the event in her mind. Infants, at this sensory motor stage of development also try to use their own motor acts and sounds to represent events to themselves. For example, Piaget reports how a twelve month old tried to keep track of the demonstrated manipulation of a matchbox:-

1) He opened and closed his right hand, keeping his eyes on the box;

2) he said, "Tff", "tff", "tff", to reproduce the sound the box made;

3) he reacted by opening and closing his mouth.

Between approximately the ages of two and seven years a substantial part of the child's waking hours are devoted to imaginative and other kinds of play (Herron and Sutton Smith, 1971; Singer, 1973). During imaginative play, a child may engage in monologues or dialogues with imaginary playmates or include elements that are not present ("Pretend like we have horses") or material that is not factual ("You be the mummy"). Using their increasing role-taking ability, young children engage in a great deal of imaginary play that intermingles elements from the roles they see enacted around them ("I'm Daddy getting the baby dressed for bed"), from T.V. ("We're on a ship and there are sharks all around us") and from apparent pure imagination, i.e. "the act or power of forming a

mental image of something not present to the senses or never before wholly perceived in reality" (Webster New Collegiate Dictionary, 1976, p.571) - ("This is the time I learned how to walk on water"). Any available prop may generate a string of associations which children weave into play that is sometimes infinitely flexible ("We can all fly") and sometimes extremely rigid ("You can't be a fireman because you don't have a hat on"). In fact, an 'as if' attitude is adopted towards play objects and events prior to the acquisition of conservation of number, quantity and space (Sutton Smith, 1971).

Children's activities are initially governed by the conventional uses for familiar objects, by the mundane functions of silverware, soap, clothing, bicycles. For the purposes of this paper such activity is recorded as iconic or sign stimulated behaviour. However, when a child grabs a stick and dubs it 'a horse', he is no longer taking account of the usual traits of the stick (or of the horse). Instead the child is governed by more remote ideas or symbols. The stick, a physical object, has become a lever (or "pivot" - Vygotsky, 1967) for prying the meaning of a horse away from its usual embodiment as a large animal with a characteristic shape, smell, etcetera.

In the child's early life, the object's customary use has been dominant, but with the advent of such a 'hobbyhorse', a complete reversal takes place. Now the meaning is designated by the child. The idea or symbol in his head rules over the object and determines its significance. Now the child's behaviour is guided by a set of rules that he has elected to apply

to this situation of his own devising. Such symbolic imaginative behaviour stands apart from iconic imaginative behaviour in which objects and actions predominate over meaning. With the advent of this symbolism, children finally divorce themselves from total domination by the present context of objects and events. Children can then refer to events and experiences removed in time and adopt a hypothetical or imaginative stance toward the present.

This paper is a report of research on iconic and symbolic imaginative behaviour under different conditions of stimulus by a plaything. It is an attempt to isolate those variables in a plaything which will reliably influence behaviours that have the structural characteristics of iconic or symbolic imaginative play.

CHAPTER II

Review of the Literature and Statement of the Problem

Conditions for the occurrence of imaginative behaviour

Imagining is a constructive activity in that make-believe or imaginative play forms the basis for the creation, from non-novel environments, of new attributes from which children generate their own feedback and draw on complex memories. Thus, imagination is, in some senses, a creative reflection of reality, in as much as different images are unified into new contexts and combinations, and changes in reality are conceived by concurrent association of memory images which become part of a newly created stimulus situation (Repina, 1964).

In the initial shift from reality to imagination in young children's play, a qualitative change in their intellectual functioning takes place. That is, they separate themselves from their immediate phenomenal environment (Werner and Kaplan, 1963) and in so doing expand 'the field of adaptation both in space and time' (Piaget, 1962, p.273). Such (usually) solitary, free, imaginative play requires ample opportunity in time, space and materials for the child to engage in undisturbed and uncriticised activity, during the course of which, flexibility, originality and ability to transform will be exhibited (Feitelson, 1972). Wallach and Kogan (1965) imply that these conditions are the necessary prerequisites for creative output.

To engage in imagining denotes the separation of the individual from his environment. Sigel (1972) names this type of

separation 'distancing'. Distancing defines those classes of behaviour or of events which create temporal, spatial and psychological distance between self and object. Sigel also conceives of distancing as a "dimension of environmental events which serves to stimulate and activate, and which has the potential to energize organismic capabilities to represent or to reconstruct experience" (1972, p.36). Distancing behaviours can be expressed in various linguistic or gestural acts. The separation between the word and the object and between the gesture and the referent constitute symbolic imaginative behaviour. The manipulation of the environment through scheduling and the restructuring of physical space, or content within that space, provide examples of distancing behaviours. Encounters with the environment occur which necessitate symbolic imaginative activity in terms of reconstructions of future events from recall of events or situations from memory in order to engage in subsequent activities. For Sigel, distancing concerns the child's total environment, including both social and physical events and objects that may iconically stimulate him to respond. Without being explicit about the cognitive processes involved Sigel points out that differences in representational thinking develop as a response to environmental demands.

Conditions for the growth of imaginative skills

The literature reviewed in this paper supports the view that the development of imagination moves from action in response to object stimuli immediately present in children's

perceptual fields ("You're the fireman because you have the hat") to action generated by stimuli that are remote, either in time or physical space and which require transformational ability (e.g. feeding imaginary food to an imaginary horse).

Rohwer (1970) suggests that the development of imagination is a skill that depends in part on exposure to certain social experiences and on an increasing awareness of different adult roles. A child, for example, telling a toy animal to go to sleep, inevitably speaks those words but also has to reconstitute from memory things such as the experience of going to sleep in the form of actually seeing his own bed, rehearing the sound of his mother singing a lullaby and perhaps even experiencing some of the kinaesthetic sensations associated with snuggling down into the covers and preparing for sleep. Singer (1973) suggests that such recombinations are based on the direct influence of adults who foster imaginative behaviour in situations that children are likely to imitate, e.g. modelling.

The theory and research cited by Singer give a 'central role to human contacts and especially the human face as the seat of emotions and major stimulus source' (1973, p.185). Singer also postulates that much of Piaget and Inhelder's (1971) reproductive and anticipatory imagery 'may well be built around the face of the mother or the movements of adults in the immediate environment of the child even more than they are upon the physical structures of objects in the environment' (1973, p.185).

If it is assumed that humans are generically capable of developing imagination provided that certain appropriate ex-

periences occur, it poses the vital question of what kinds of experience are necessary for imaginative behaviours to be manifested. If imaginative thinking is conceived as an outcome of particular activation experiences from the environment and responses from the organism, then what are the stimulus conditions that will activate the organism to respond with imaginative performance? It may also be worthwhile to consider the kinds of variables that might be incorporated in such stimuli to produce imaginative competence.

A number of researchers have followed up current developmental research substantiating Vygotsky's 'pivotal' theory concerning young children's use of objects. Gowen (1978), for example, studying symbolic play, found that the younger children in her sample of two to six year olds, used real objects as signifiers, while four and five year olds tended to use imaginary or peer signifiers. In conjunction with this object substitution, the younger children also used verbal comments. Still functioning at a sensory motor stage, they seemed to depend more on environmental cues. They used whatever was readily available to pretend, and those pretended identities seemed to reside in the object's iconicity, rather than any preconceived notion. The two and three year olds more often used concrete objects and enacted pieces of behaviour as vehicles for their imagining behaviour. They tended not to be carried solely by verbalization and imaginary signifiers.

Fein (1976), studying pretending in two year olds, found that the process whereby one thing is used to symbolize another

initially requires a relatively prototypical context which serves to anchor the transformation. She designates 'transformation' as a process which mediates the selection of some features of an immediate object but ignores others. The process of transforming mediates selection and permits a less prototypical object (for example, an empty seashell) to be used as if it were another highly prototypical one (for example, a full cup). She found that two year olds tended to symbolically pretend that the empty seashell was a full cup if it was supported by, in her estimation, the easier transformation of a toy animal to a living animal to drink from the cup. Fein considers this latter transformation easier than the former since the prototypic object, that is, the toy horse, already exists iconically and only requires the endowment of certain abilities without changes in physical features.

Research on plaything structure and imaginative play

Several studies have shown the differential effects of various kinds of playthings upon young children's behaviour. Riess (1957) found a preference for high activity toys, such as a jump rope or rubber ball, by children who did not give 'm' (human movement) responses on the Rorschach test. Children who did give 'm' responses preferred such low activity toys as a kaleidoscope, colouring book or puzzle. Lesser (1962) also found that more imaginative children preferred toys requiring little motor activity with the opposite true for less

imaginative children. Gilmore (1966), studying toy preferences of five to eight year olds, found that both anxious and non-anxious groups of children preferred novel and complex toys to simple ones.

Some applied researchers have studied plaything design and its effect on imaginative development. The contention is that playthings that involve exact resemblance to everyday objects require less cognitive activity than less realistic or unstructured playthings. The functional specificity of a realistic plaything would also require a far more complex transformation if it were to be used imaginatively. Conversely, unstructured playthings, being less clearly defined might rise to a greater variety of imaginative themes (Pulaski, 1971).

Pulaski (1971) studied the effects of structure in playthings upon the imaginative play of five to eight year olds who were grouped according to their imaginative disposition. Although plaything structure was non-significant as a main effect in the analysis of variance, a significant difference was obtained in the variety of themes elicited by less structured playthings (blocks, clay, paint). This greater variety of less reality-bound themes may well have been elicited by the minimally structured playthings because the children's responses were less anchored to specific stimulus conditions.

Phillips (1945) compared the effects upon preschool children's play of high realism materials (miniature lifelike furniture and role-designated dolls) with low realism materials (block like furniture and sexless stuffed dolls without clothing). She noted significantly more exploratory behaviour with the

high realism materials although there was a significant decrease in this behaviour from first to third sessions. Phillips also found decidely more organizational behaviour (that is, purposeful and systematic arranging of materials, naming, counting or identifying dolls and other experimental equipment) with the low realism materials. However, tangential play (that is, all behaviour not incorporating the experimental materials or not related to the experimental situation) was relatively more frequent with low realism materials. There were significantly more theme changes and, as Pulaski found, a greater variety of themes with the low realism materials "because of the ambiguity of the pieces .....relatively more leeway with respect to the kinds of themes which the child appeared to feel free to build" (Phillips, 1945, p.138).

Jeffree and McConkey (1976) found that realistic dolls as compared with 'junk' dolls (that is, sexless, unclothed rag dolls) stimulated more frequent and extended periods of imaginative behaviour. Variety and number of different themes were correlated with age. Jeffree and McConkey suggest that this is probably the result of an increase in a child's capacity for deferred and more precise imitation (Piaget, 1951).

The decrement of exploratory activity with repeated exposure, noted by Phillips (1945), was also investigated by Hutt (1966). Hutt discriminates between exploratory and diversive behaviour. Her work on exploratory behaviour stems from Berlyne's (1960) extension of Hullian drive theory, which maintains that the strength and direction of exploratory

behaviour is as a result of an organism being influenced by the properties of an external stimulus which has intensity and affective value. The novelty, surprise, change and complexity of that stimulus (collative properties) depend on information derived by the child from comparing the stimulus in question with accompanying past stimuli. Berlyne hypothesizes that this stimulus induces uncertainty and a drive for specific exploration which then reduces it. Initially, the child seems to explore an object, to find out what it can do. Once he has apparently learned all there is to know about a novel object, according to Hutt, that knowledge is then incorporated into diversive or play activities and any further learning is purely accidental. Diversive behaviour only occurs in an already explored and known environment and is characterized as a gradual relaxation of mood, observable from changes in facial expression and in the diversity and variability of activities with an object. Diversive behaviour depends on a child's adventurousness and openess to new experiences, a willingness to accept the risks of what that child can do to an object in return for the satisfaction it might afford.

Piaget and imagination

For Piaget (1951), play begins with the first dissociation between assimilation and accomodation which are the functional invariants in his system for describing intelligence. After learning to grasp, swing, throw, etc., which involve both an effort of repetition, reproduction and generalisation (the

elements of assimilation), the child sooner or later, often during the learning period, grasps for the pleasure of grasping, swings for the sake of swinging, etc. He repeats his behaviour not in any further effort to learn or to investigate but for the joy of mastery. Such practice play requires neither thought nor social life, according to Piaget, and occurs during the sensory motor period. However, there cannot be symbolism, that is, consciousness of make-believe, before representational thought, which begins and gradually develops at the beginning of the second year. Representational thought, as distinct from sensory motor activity, begins as soon as the 'signifier' is differentiated from the 'signified'. During the sensory motor period, a child uses 'indices' to recognise objects and relationships, to assimilate consciously and even to imitate. But such an index is only one aspect of the object or the situation and is, therefore, not a 'signifier' which is differentiated from the 'signified'. It is language that provides a system of distinct signifiers since in verbal behaviour the signifier is the collective 'sign' or word, while the signified is the 'meaning' of the word. Such verbal signs are social. However, between these verbal signs and the less mature 'indices', Piaget places the symbolic image and preconceptual representation. He describes the image as an accomodated schema which is used in present assimilations as a 'signifier'. The image is detached from the perceived object but less so than a sign and whereas the pure (verbal) sign is always social, the image is an individual signifier. For

example, "when J. pretended to be asleep, holding a corner of the sheet and bending her head, the sensory motor schema thus set in motion resulted in more than mere exercise, since it served to evoke a past situation, and the corner of the sheet became a conscious substitute for the absent pillow. With the projection of such symbolic schemas on to other objects, the way is clear for the assimilation of any one object to another, since any object can be a make-believe substitute for any other" (p.165). Thus, for Piaget, play as the 'signified' enables the child to relive his past experiences and satisfy "the ego rather than for its subordination to reality" (p.165). Symbolism, as the 'signifier', provides the child with the live, dynamic individual language indispensable for the expression of his subjective feelings. The symbol-object, being a real substitute for the 'signified', makes it actually present in a way that the verbal sign can never achieve. "Since the child's whole thought is still egocentric and intuitive, it is linked with symbolic (imaginative) play. Such play can be considered to be one of the poles of thought as a whole: the pole at which assimilation is dissociated from accomodation." (p.166).

Imagination and instruction

Applied researchers, following the link of imaginative with cognitive development, have sought instructional strategies to increase imagination and thus enhance intellectual functioning (Smilansky, 1968; Johnson, 1976; Saltz, Dixon and Johnson, 1977; Getzels and Jackson, 1962; Guildford, 1967; Torrance, 1966;

Wallach and Kogan, 1965).

According to Gehlbach (1980) instruction normally consists of three components to obtain predictability of learning outcomes:

1) Initially, the learner is exposed to the skill or knowledge considered educationally relevant, usually by an adult;

2) appropriate practice is provided either by the physical environment or social interaction, closely monitored or organized by the adult;

3) the learner receives feedback from the adult as to his or her progress.

Attempts to incorporate instruction and play have been successfully combined in modeling fantasy expression (Freyberg, 1971). Bandura and Walters (1963) define modeling as the "tendency to reproduce actions, attitudes or emotional responses exhibited by live or pictorial and verbal models". Thus, the learner is exposed to a skill, practices reproduced actions during play and receives feedback from the instructor (model). Freyberg, following the lead of Smilansky's (1968) and Eifermann's (1971) data, which indicate socio-economic and cultural differences in patterns and age of symbolic development, found modeling techniques facilitated significant changes in the imaginative play of urban disadvantaged kindergarten age children after a very short training period of two hours and forty minutes. The follow up study, conducted two months later, revealed that increases were maintained. Freyberg concludes, with Smilansky, that perhaps there are certain

behaviours that must be learned by means of adult intervention at particular points in a child's development. Freyberg and Singer (1973) believe that this approach opens the way for greater incorporation into Piagetian theory of the direct influence of adults who foster imaginative behaviour by story telling or establishing situations that children are likely to imitate. Such situations would probably be ones that disadvantaged children would miss.

However, in contrast to a teaching setting, Freyberg found that the use of toys and other play equipment (fabrics, pipe cleaners, clay, playdoh, blocks, tinkertoys and a wide variety of wooden shapes) stimulated a considerable amount of originality, whereas 'previously there was little use of toys that was not obviously suggested by the objects themselves" (p 1). Freyberg's data seem to indicate support for less structure in playthings as an aid to imaginative behaviour in a modeling situation.

Playthings and instruction

In a free play situation, a successive interaction takes place between the child and part of his physical environment. Since this interaction is not related to the direct satisfaction of biological needs or to the achievement of goals beyond the interaction itself and is also independent of authoritative directives from other persons, it is likely to lack predictability (Gehlbach, 1980). If exploration and playfulness are vital components in the development of imagination, and

if play, per se, is to yield predicatability in its outcomes, then it seems logical to look at plaything design to structure the exposure, practice and feedback required for instructional integrity.

Gehlbach (1980) has proposed a paradigm for "instructional play". He defines instructional play as an interaction between a child and a plaything which structures the player's behaviour in such a way that specific types and levels of learning are reliably produced. In other words, predictability of learning outcomes is achieved by structuring the learner's interaction with his physical and/or social environment. Such structure includes any feature of the physical-social environment which creates a consistent constraint on behaviour or which governs the environment's responses to behaviour. Gehlbach defines a pl thing "as part of the player's environment which is dynamically related to player behaviour.....Since the physical characteristics of playthings are easily manipulated, their design features are particularly promising as independent variables in research on play as a learning activity" (p.116). Gehlbach defines the environment to be "the set of features of a player's physical and social surroundings which systematically affect the interaction between the player and the plaything." (p.119). However, these features are not dynamically related to the interaction, that is, do not change during an episode of play. If a plaything is to have instructional power it must be able to reliably prompt behaviours which eventually have the structural characteristics of that kind of play.

The present approach to solving the problem was to design a realistic plaything which would prompt attention and exploratory behaviour. If the plaything were also additionally designed to prompt the destructuring and restructuring of that realism by removing or adding key identifying parts (e.g. ladders to a firetruck) then the first steps toward imaginative behaviour would have been taken. It was hypothesized that practice in changing the meaning of a physical object would be provided by the destructuring and restructuring behaviour, and that there would be the additional benefits of ongoing novelty and complexity to support exploration. Maintenance of exploratory behaviour as an input to diversive behaviour would thus increase the latter both in quality and quantity.

HYPOTHESES

I That a structured plaything will elicit more iconic imaginative behaviour than a less structured plaything.

II That practice in destructuring the literalness of a plaything will result in symbolic imaginative behaviour above baseline for an unstructured plaything.

CHAPTER III

Method

Subjects

Three boys and one girl were selected from a group of twenty-three children between the ages of 36 and 60 months in a daycare centre.

Subjects were selected on the basis of a score that fell in the lower half of the distribution for all twenty-three children on the Lieberman Playfulness Scale (1977) to control for already developed imagination. Two other criteria were taken into consideration, regularity of attendance and parental approval.

Instrument

Lieberman (1977) hypothesized that as a result of stimulus novelty becoming familiar through exploratory behaviour, imaginative playfulness can set in. Lieberman's Playfulness Scale (See Appendix A) contains five scales that refer to the frequency or quantity of five traits, the quality of those traits shown and an estimate of the child's intelligence. Two of the components, which Lieberman hypothesized make up playfulness, are 'manifest joy' and 'sense of humour' which Hutt (1966) also noted during diversive behaviour. The remaining three of Lieberman's components, 'physical', 'social' and 'cognitive' sponteneity, are ways of responding to environmental stimuli.

The Plaything

A basic wooden wheeled plaything was designed with one front steering wheel and two back wheels supporting a three-sided open-roofed box measuring 3' x 2'6" x 3'. Windows, measuring 14" x 4" were situated on the two sides of the box. The plaything was designed to be modified to produce two conditions, unstructured and structured. The structured condition consisted of three alternative standard versions, a firetruck, an ambulance and a camper, considered to give more or less equal identification possibilities for both girls and boys in roles as popular heroes and family members. For each of the three standard versions, a set of appropriately realistic attachments were provided which could be easily attached and removed by the children themselves. The unstructured version had no accessories available. (See Appendix B).

Procedure

The experiment was conducted in a small room attached to a daycare centre complex. One dyad at a time used the plaything. Each dyad served as its own control, thus reducing interactive effects due to individual differences. The only intervention by the experimenter during the experimental period was in respect to safety, in connection with the use of ladders on the firetruck. Prior to their initial exposure to the plaything, the subjects were told that the experimenter would take them to the playroom where they would play with a plaything. The subjects were told that they would be filmed during that playtime and that when the timer bell rang it was the end of the

play session. Prior to each exposure to a structured version of the plaything, its name and use were stated (e.g. "This is a firetruck and it's the kind of vehicle that is used to put out fires"). Prior to each exposure of an unstructured condition of the plaything, it was stated that the subjects should "figure out what they could use the plaything for". This statement was also made prior to extended sessions. Scheduling within the four weeks was at variable times during the mornings. The assignment of treatment conditions was identical for both dyads. Each subject had the same partner throughout the experiment.

Coding Sheet

From videotapes a trained observer coded occurrences of ir inative play behaviour measured by eleven dependent variables. Dyad behaviours were coded every thirty seconds during each five minute exposure and then summed for each session. (See Appendix C).

Observers and establishment of rating reliability

Two observers, unfamiliar with the hypotheses of the study, used the experimental coding sheet on other videotaped material. Both observers then coded all variables of the first five experimental sessions and a correlation of .93 (Pearson) was obtained. Thereafter one observer rated the observations.

Design

Figure A

	Monday	Tuesday	Wednesday	Thursday
week 1	U	EF	U	EF
week 2	U	EC	U	EC
week 3	U	EA	U	EA
week 4	U	EE	UU	

The experiment was organized as an ABACADA time series design (Fig. A). The control sessions are represented by condition U during which the unstructured form was presented. The structured treatment sessions are represented by conditions EF (firetruck), EC (camper) and EA (ambulance). Both control and experimental sessions were of five minutes duration. In order to measure the cumulative effects of the treatment, two final sessions of double length were scheduled. During session EE, all attachments for all three types of vehicle were available to each dyad. The function of session UU was to measure the cumulative effect of the control sessions, i.e. whether there would be evidence of symbolic imaginative responses specifically related to the treatment(s).

Dependent variables

Behaviours were recorded for individuals on a joint dyad coding sheet from the videotape of each session. The recorded score was the number of coded occurrences of a given behaviour in a given session.

I Investigation: physical or visual manipulation of the plaything to discern salient characteristics;

2 Parallel activity: each child individually follows his/her own activity with no verbal or gestural interaction;

3 Investigation/manipulation: child has a defined goal and tries to test his/her efficacy towards realization of goals;

4 Co-operative activity: children co-operate in joint activity accompanied by language or gesture;

5 Miscelleneous off-task: child looks around, fidgets. Any other uncategorizeable behaviour can be included;

6 Standard label: child orally names plaything and/or accessories accurately;

7 Non-standard label: child orally names plaything and/or accessories any non-conventional label;

8 Standard role: child states verbally or designates gesturally he/she is pretending to be a fireman, doctor, nurse, ambulance driver, injured patient, family member.

9 Non-standard role: any other role designated verbally or behaviourally;

10 Standard theme: designated verbally a standard theme, that is, firetruck, camper, ambulance;

11 Non-standard theme: any other designated themes.

Method of Analysis

For the purpose of individual analysis, the scores for the two subjects in each dyad were combined, and the unit of analysis was the dyad score for each session. The reason for combining the scores was that when two subjects were interacting, it was impossible to determine the degree to which the behaviour of one was affected by the behaviour of the other.

The first five dependent variables were established in order to describe generally the kind of individual and social behaviour prompted by the plaything.

After examining the relationship among variables, it was decided to chunk those variables that measured related behaviours (e.g. labels, roles and themes), since such variables had high intercorrelations ranging from .80 to .93. Therefore, to test hypothesis I, because standard labels, roles and themes would be those directly related to the iconicity of the plaything, variables 6,8 and 10 were combined as "Standard Chunk". To test hypothesis II, variables 7, 9 and 11 were combined as "Non-Standard Chunk" because non-standard labels, roles and themes would be those not directly related to the structured condition of the plaything.

CHAPTER 4

Results

When tested against the assumptions of ANOVA, only two of the eleven variables were statistically independent and met the assumption of homogeneity of variance. Therefore the results are reported and analysed non-statistically in the following ways. First, means and standard deviations for both dyads on variables and chunks for sessions 1-13 are shown (Table I) followed by qualitative data. Totals for extended unstructured (UU) and structured (EE) sessions are also presented (Table I). Second, time series analyses for dyads individually and combined for sessions 1-13 are shown (Figs. 1 3), followed by bar graphs to illustrate combined and individual dyad scores during the extended unstructured and structured sessions (Figs. 14,15 and 16). Quantitative and qualitative data for the extended sessions are also included.

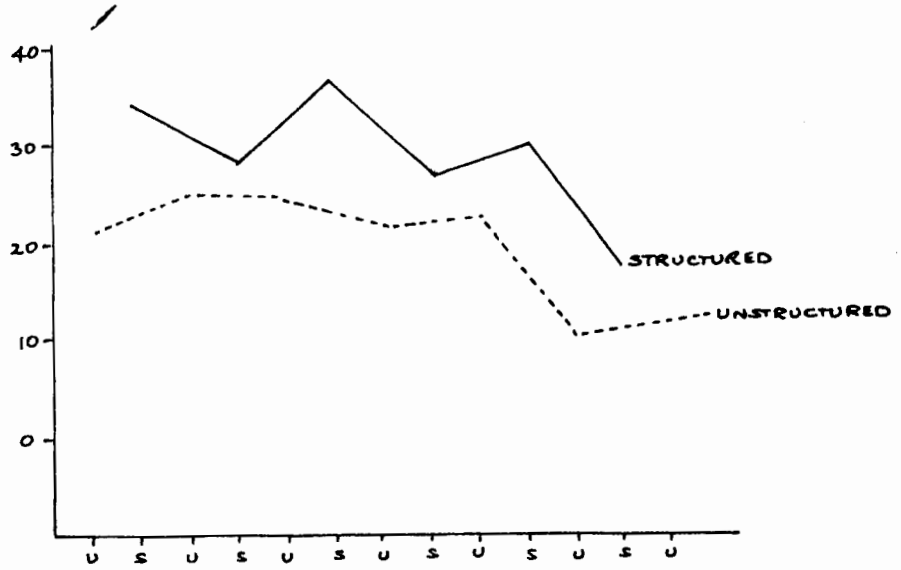
TABLE I - Means and standard deviations for both dyads on all variables and chunks. Totals for extended unstructured and structured sessions.

CONDITION	INVESTIGATION	PARALLEL	INVESTIGATION MANIPULATION	CO-OPERATION	MISCELLENEOUS OFF-TASK	STANDARD LABEL	NON-STANDARD LABEL	STANDARD ROLE	NON-STANDARD ROLE	STANDARD THEME	NON-STANDARD THEME	STANDARD CHUNK	NON-STANDARD CHUNK
UNSTRUCTURED	M:5.35	5.17	0.89	3.78	2.35	0.14	0.46	2.42	1.00	0.89	1.35	6.71	11.28
N=7 SESSIONS	SD:2.07	2.07	1.54	2.48	1.83	0.35	0.69	5.91	1.12	1.13	1.61	4.00	5.38
STRUCTURED	M:7.87	6.50	3.25	5.00	0.37	0.50	0.12	11.00	0.0	5.75	0.0	48.5	0.5
SESSIONS	SD:1.45	2.00	2.96	2.72	0.51	0.75	0.35	19.05	0.0	3.41	0.0	48.5	0.5
1)FIRETRUCK													
N=2													
2)CAMPER	M:8:00	2.50	2.75	6.87	0.50	0.37	0.12	15.75	0.37	4.75	0.37	51.5	3.0
N=2	SD:2.00	1.92	3.57	2.58	0.92	0.74	0.35	27.27	0.51	3.49	0.51	51.5	3.0
3)AMBULANCE	M:5.87	3.75	2.87	8.00	0.0	0.12	0.0	15.75	0.12	8.00	0.0	65.0	0.0
N=2	SD:2.85	1.28	3.60	2.26	0.0	0.35	0.0	27.27	0.35	2.26	0.0	65.0	0.0
STRUCTURED	M:7.25	4.25	2.95	6.62	0.29	0.33	0.08	14.16	0.16	6.16	0.12	54.16	1.16
OVERALL	SD:2.30	2.40	3.25	2.73	0.62	0.63	0.28	2.74	0.38	3.27	0.33	19.57	2.64
N=6													

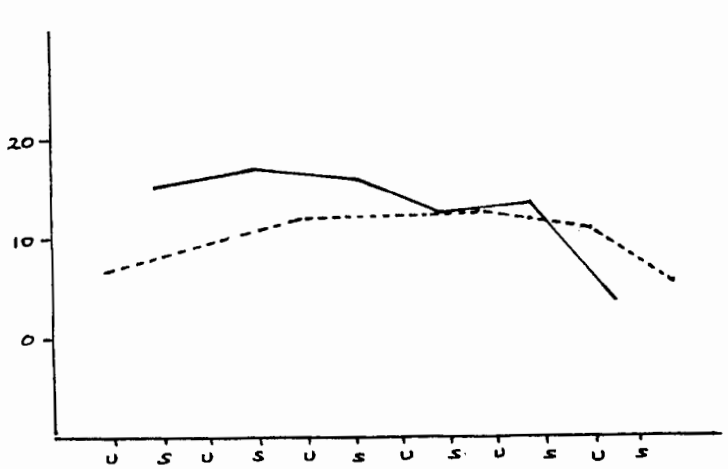
UU TOTALS	47	43	19	37	8	10	5	14	18	6	12	30	35
EE TOTALS	56	27	9	43	6	2	0	26	0	12	0	20	6

Fig. 1. INVESTIGATION

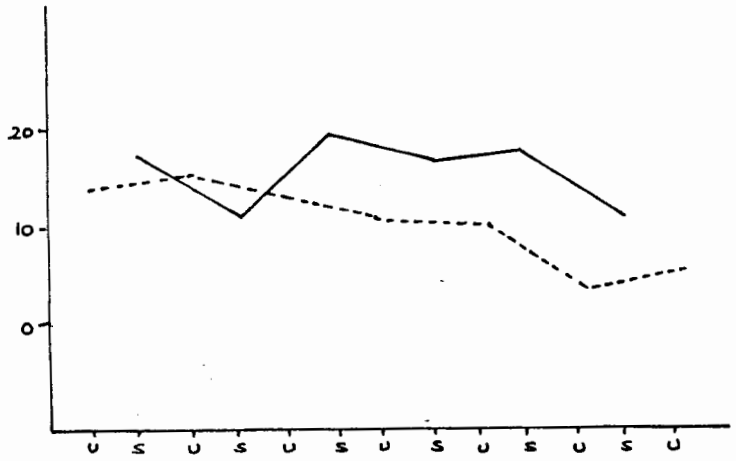
The structured condition produced more investigation than the unstructured condition although there was a decline with exposure.



Dyads Combined



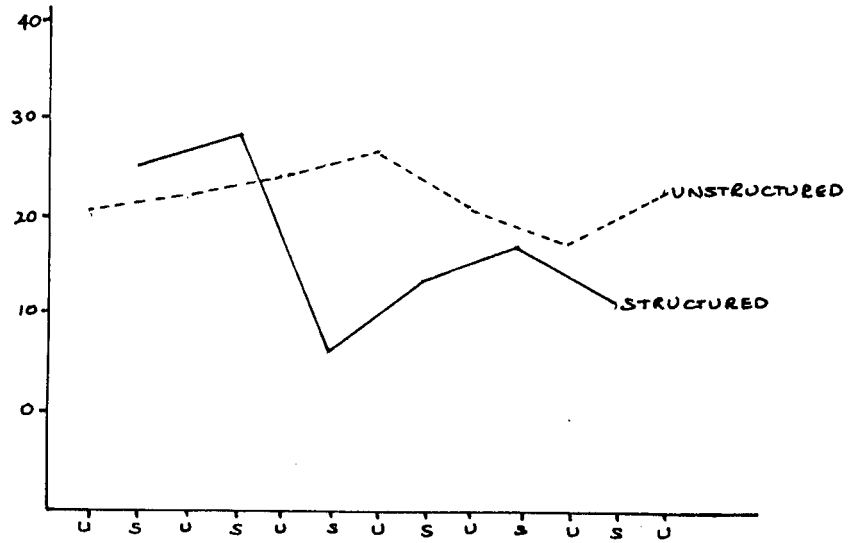
Dyad I



Dyad II

Fig. 2. PARALLEL

The structured condition elicited less parallel behaviour than the unstructured condition. There was a decline in the parallel behaviour of Dyad I with the initial exposure to the camper. There was a consistent decline in the parallel behaviour of Dyad 2 throughout the experiment.



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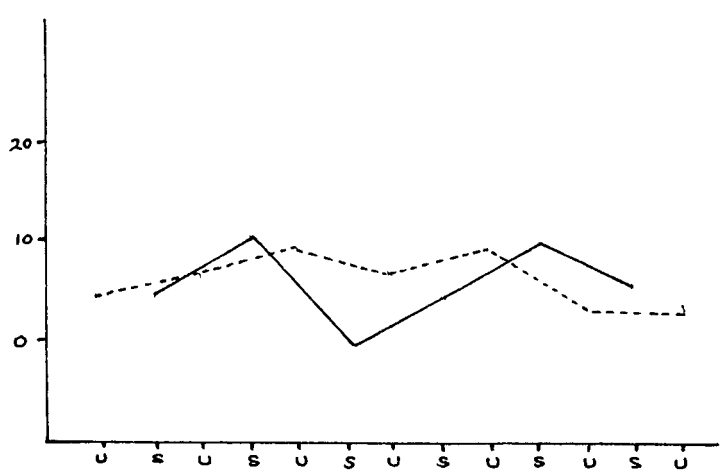
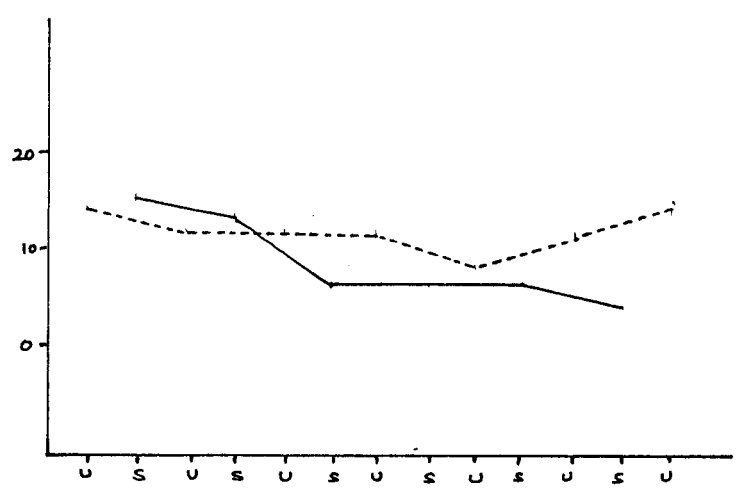


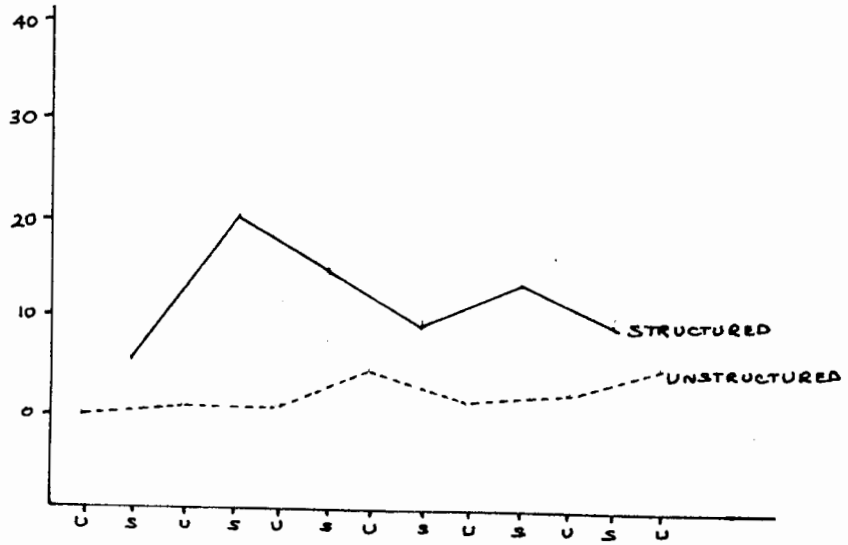
Dyad I



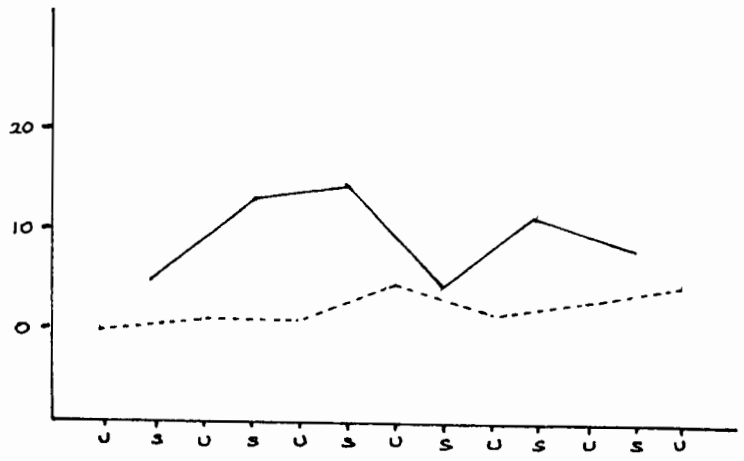
Dyad II

Fig. 3. INVESTIGATION-MANIPULATION

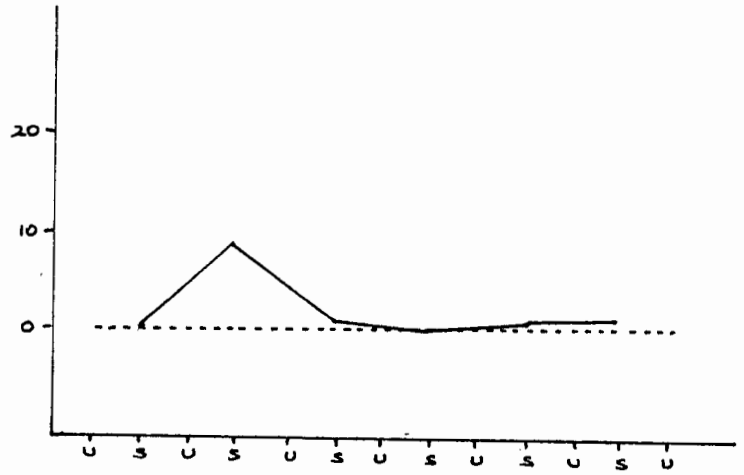
I-M was greater for both dyads with the structured plaything.



Dyads Combined



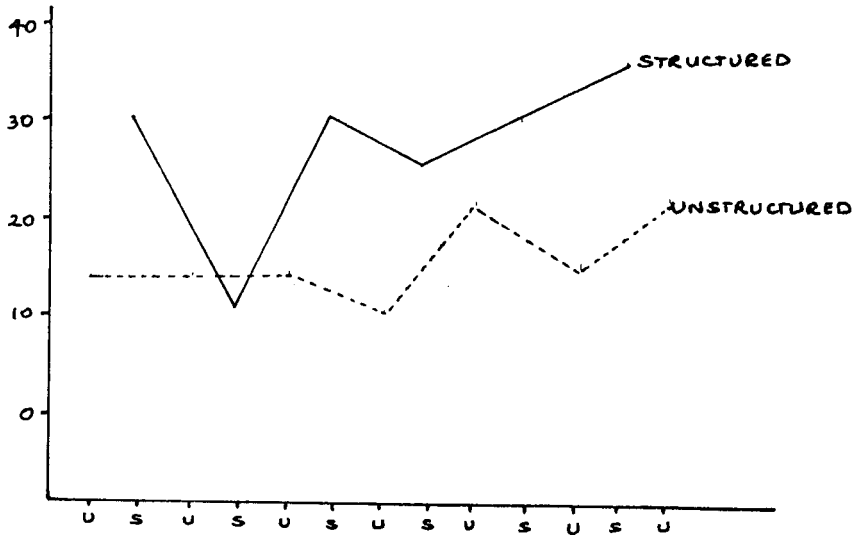
Dyad I



Dyad II

Fig. 4. CO-OPERATION

Apart from a decline during the second exposure to the firetruck, when co-operation fell below that recorded for the unstructured condition, there was increased co-operation with structure. Dyad I consistently produced more co-operation with the structured forms.



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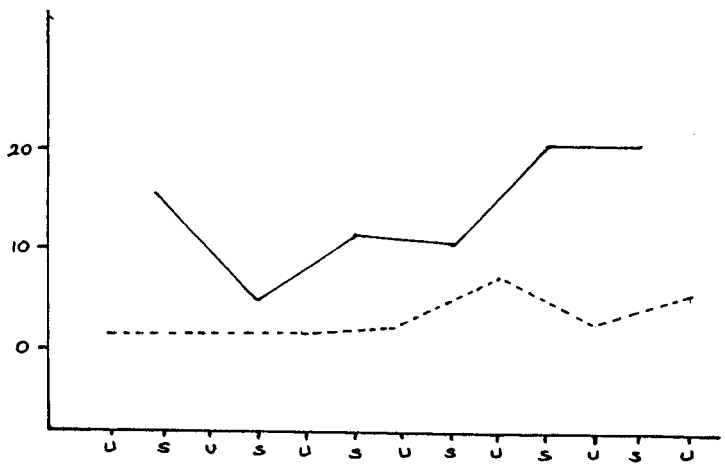
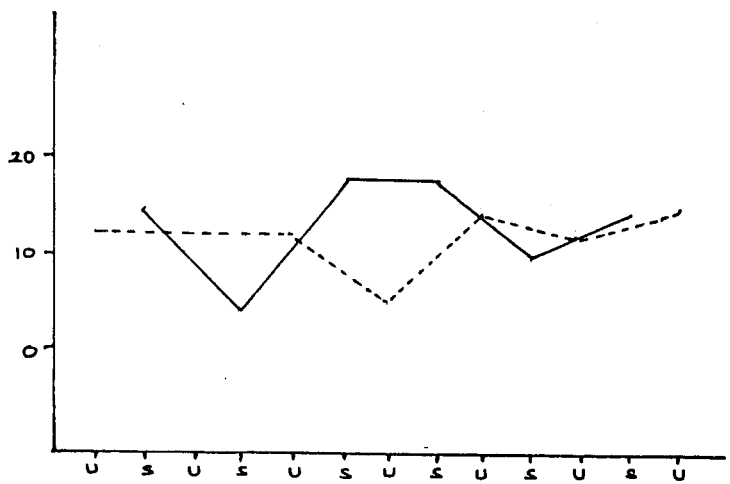


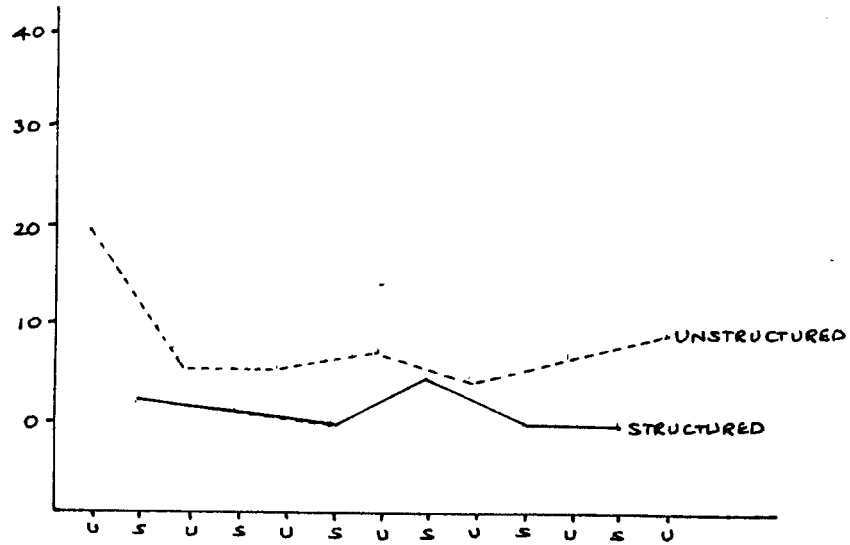
Dyad I



Dyad II

Fig. 5. MISCELLANEOUS OFF-TASK

There was consistently more off-task behaviour in the unstructured condition. Structure elicited only three instances of off-task behaviour in Dyad I and one instance in Dyad 2.



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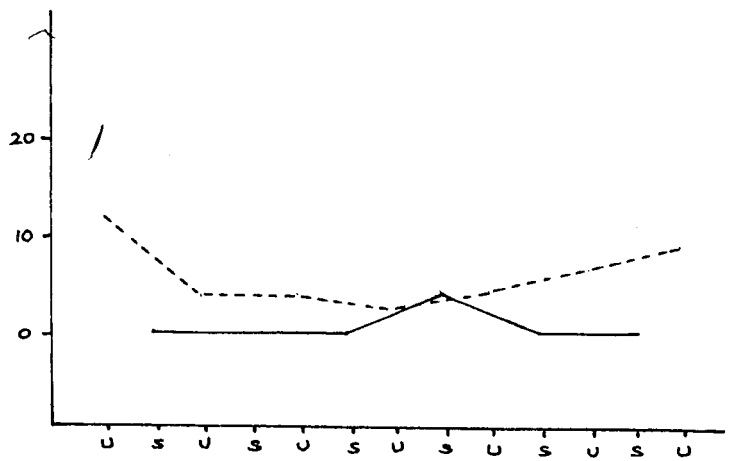
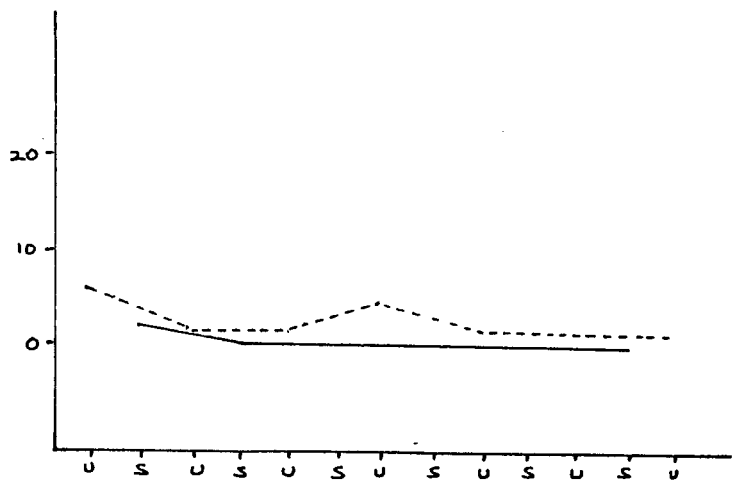


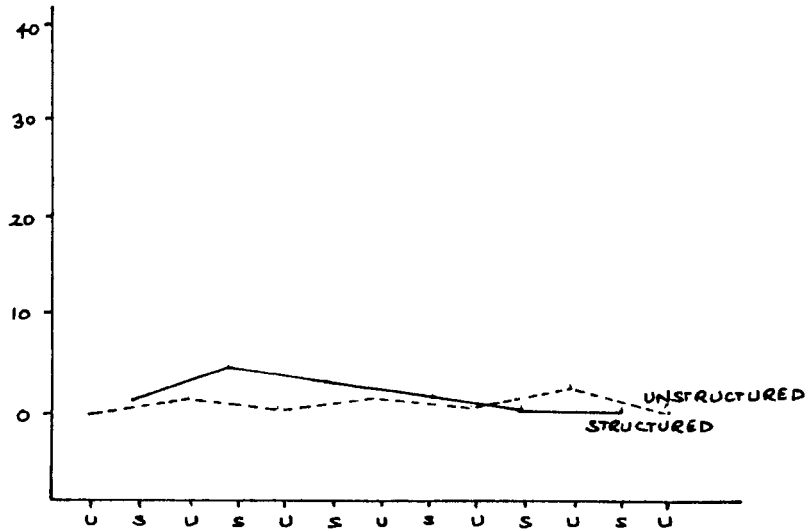
Dyad I



Dyad II

Fig. 6. STANDARD LEVEL

Structured and unstructured conditions appeared not to differ.



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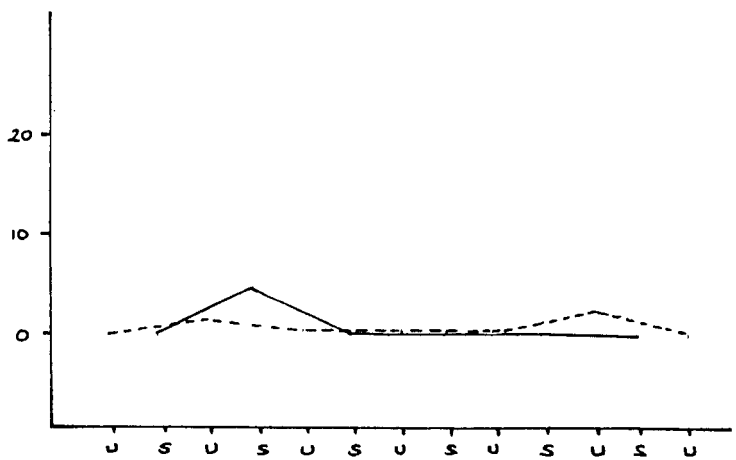
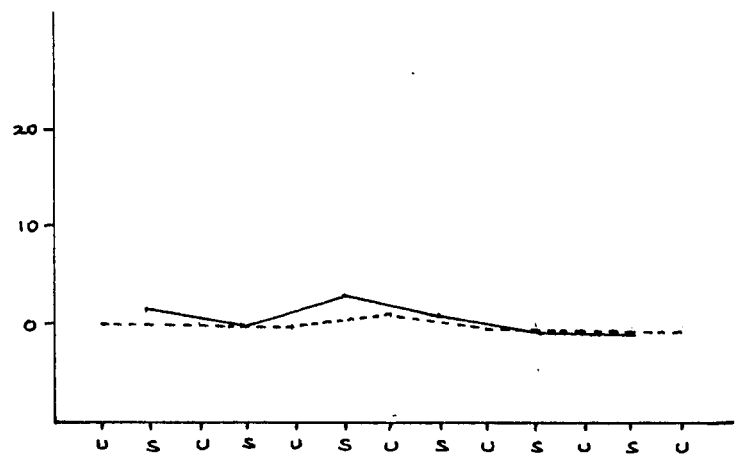


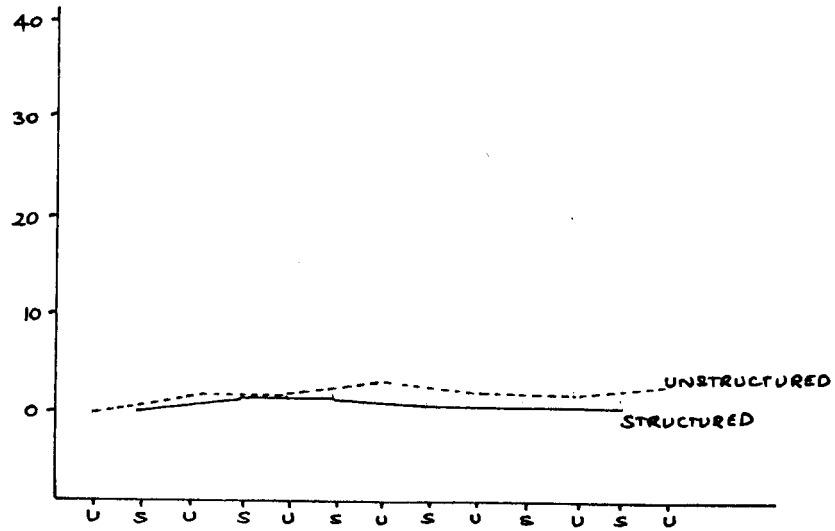
Dyad I



Dyad II

Fig. 7. NON-STANDARD LABEL

The unstructured condition elicited more non-standard labels than the structured forms. Dyad 2 produced no non-standard labels in the structured condition and only two instances were recorded for Dyad I.



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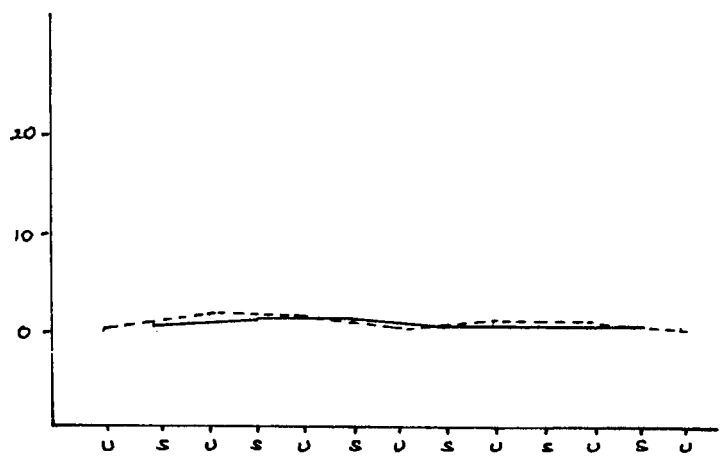
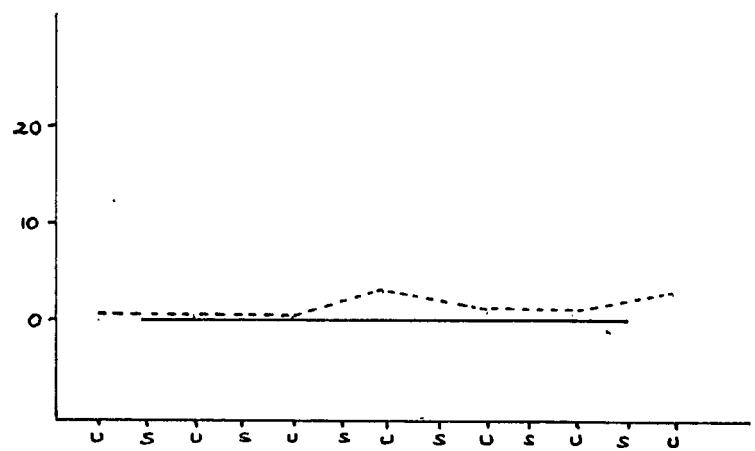


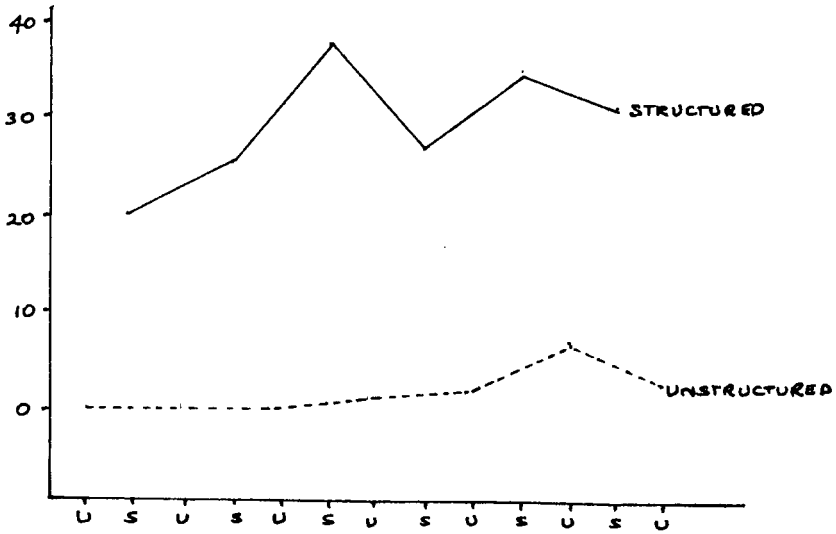
Dyad I



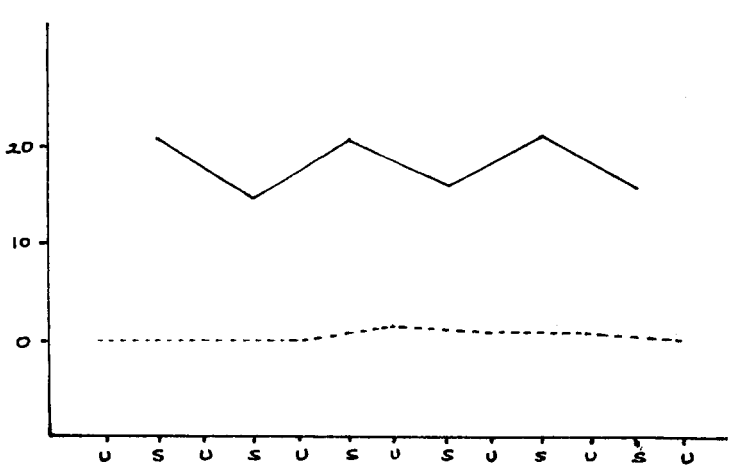
Dyad II

Fig. 8. STANDARD ROLE

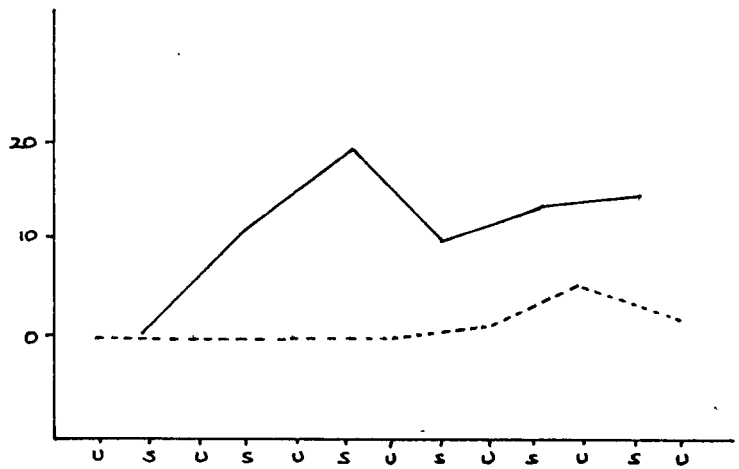
There were consistently more standard roles for both dyads with the structured condition.



Dyads Combined



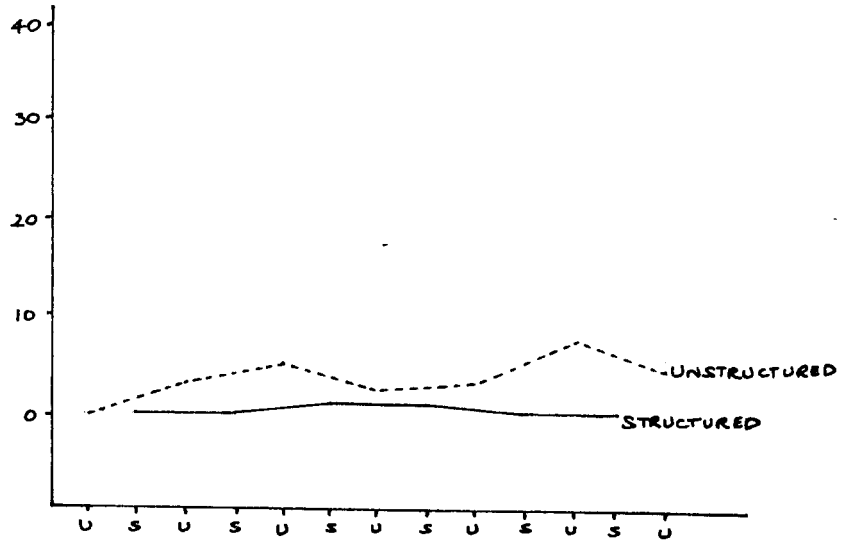
Dyad I



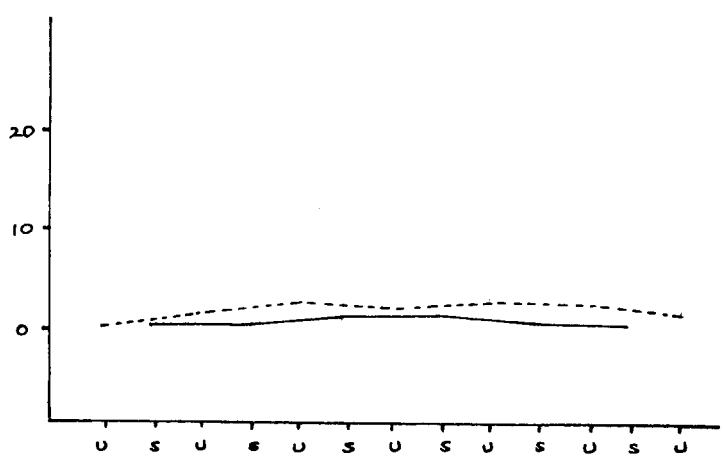
Dyad II

Fig. 9. NON-STANDARD ROLE

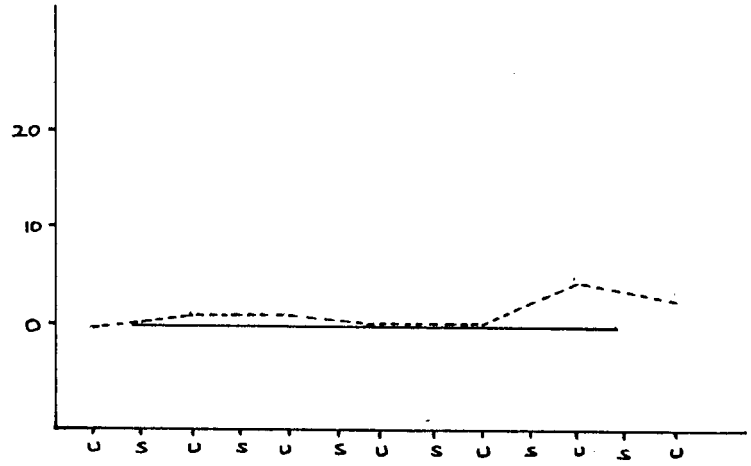
There were constantly more non-standard roles in the unstructured condition for both dyads.



Dyads Combined



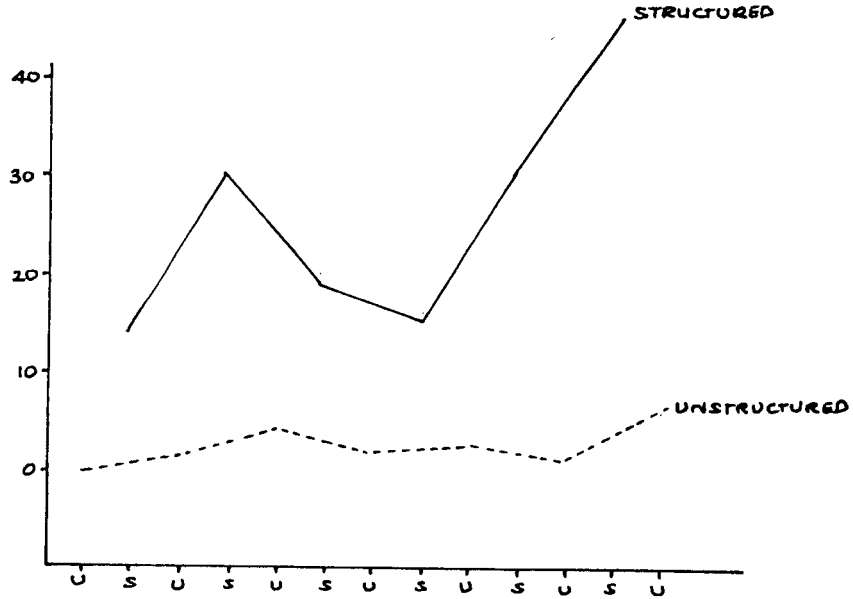
Dyad I



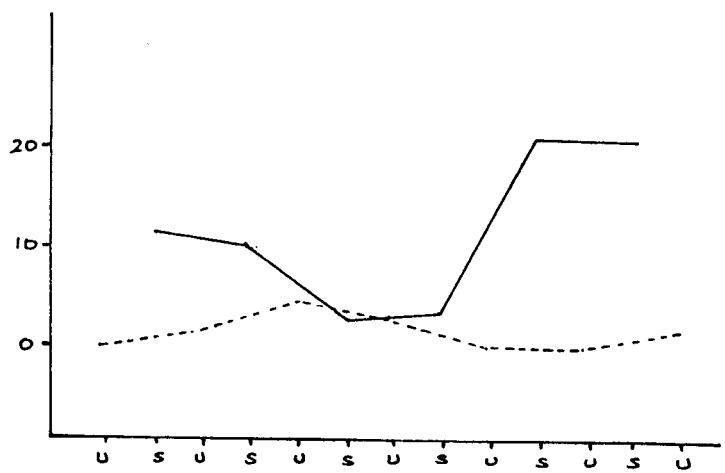
Dyad II

Fig. 10. STANDARD THEME

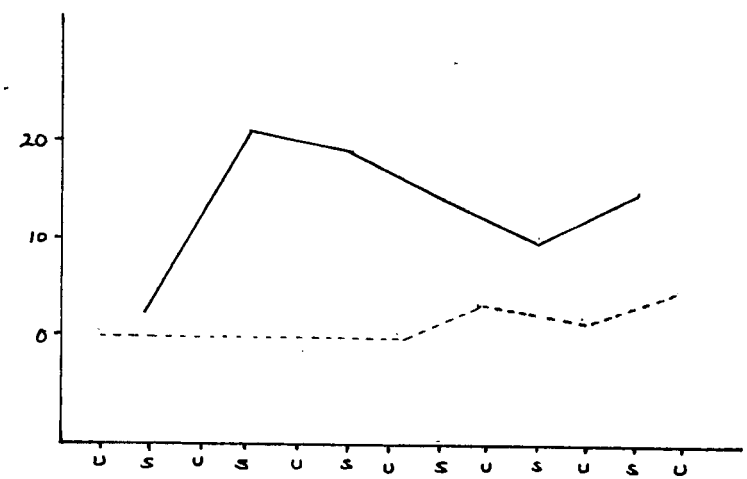
There were consistently more standard themes with structure for both dyads.



Dyads Combined



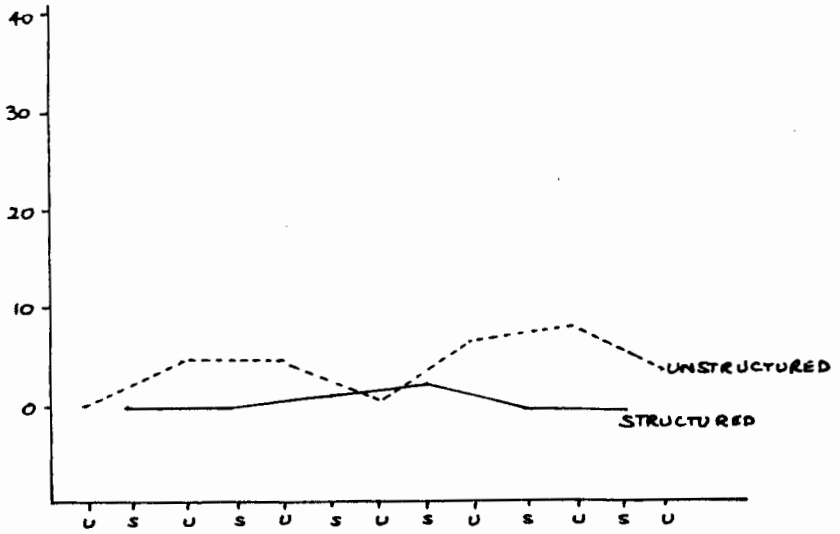
Dyad I



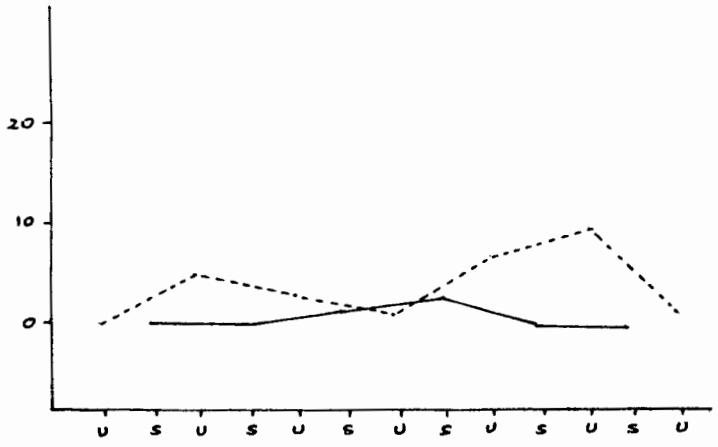
Dyad II

Fig. 11. NON-STANDARD THEME

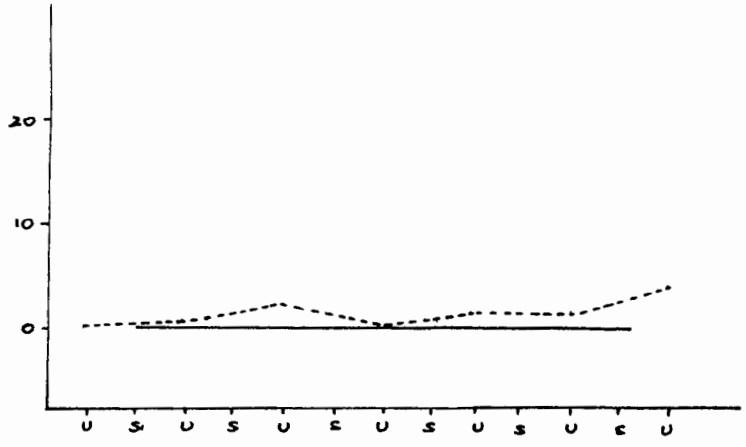
There were more non-standard themes in the unstructured condition although there was a decline for both dyads at session 7.



Dyads Combined



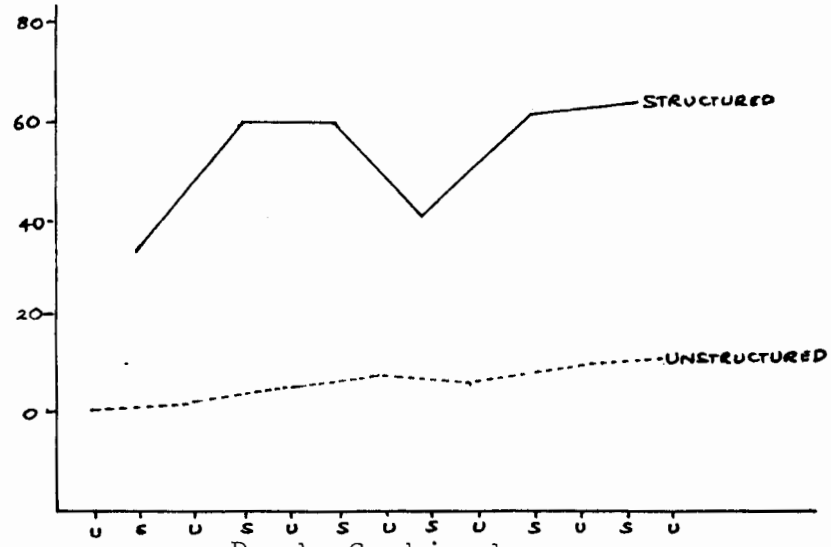
Dyad I



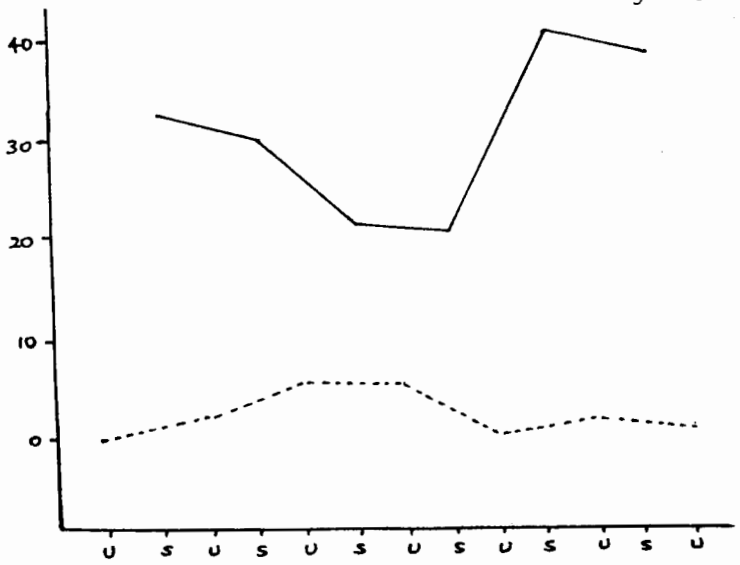
Dyad II

Fig. 12. STANDARD CHUNK

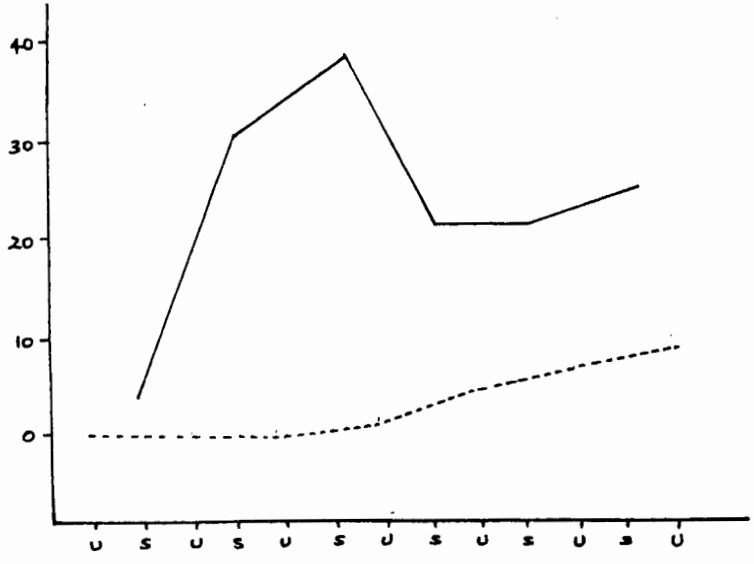
There were consistently more standard labels, themes and roles in the structured condition for both dyads.



Dyads Combined



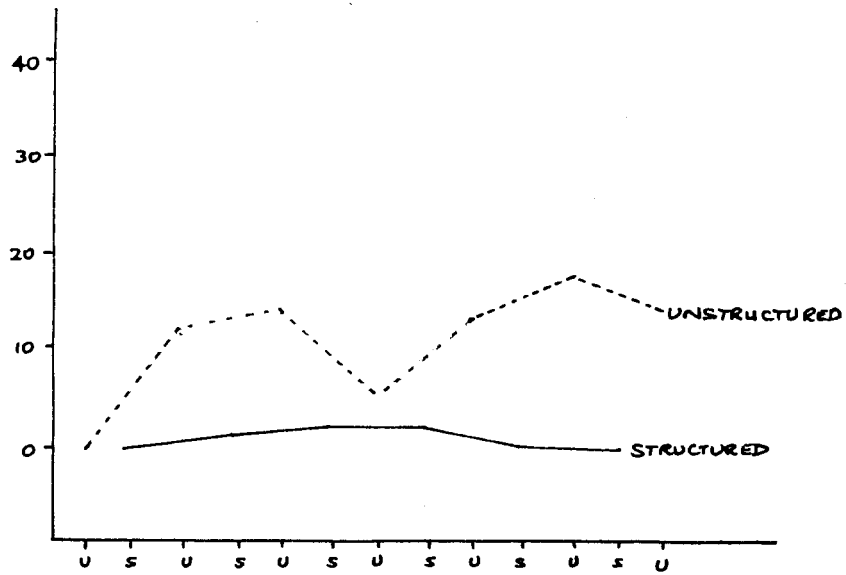
Dyad I



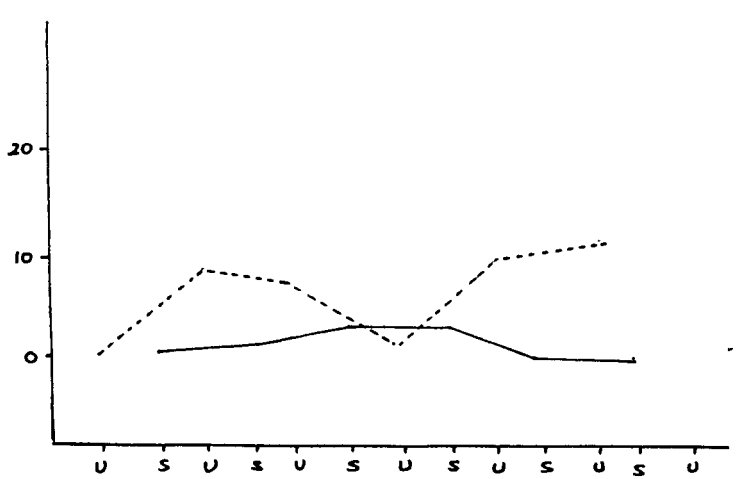
Dyad II

Fig. 13. NON-STANDARD CHUNK

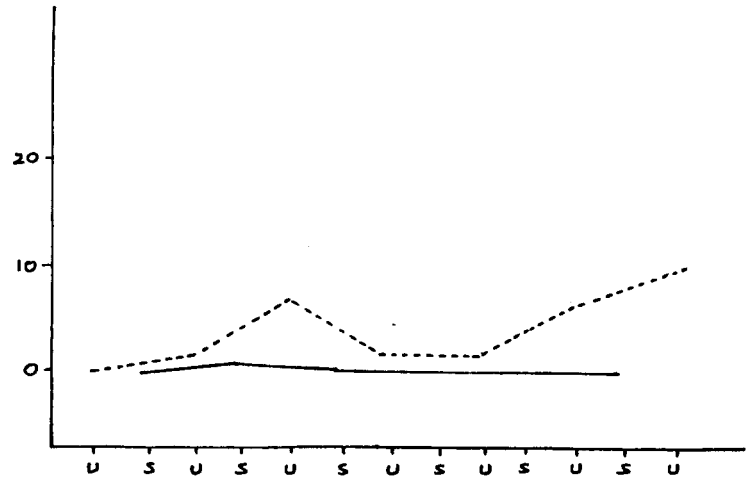
There were more non-standard labels, roles and themes in the unstructured condition. There was a decline in this behaviour for Dyad I around session 7.



Dyads Combined



Dyad I



Dyad II

Qualitative difference

Qualitatively, the differences between the structured and unstructured sessions were very noticeable. During structured sessions, the subjects greeted the appearance of the plaything excitedly and appeared pleased and interested through the five minutes of each session. They seemed to be able to fullfill the requirements of the situation with more self confidence and command of the situation. They tended not to be distracted by other noises, such as distant airplanes and vacuum cleaners. It seemed that plaything structure, by providing at least iconic imaginative focus, elicited concentration, fluency in related roles and themes and accessory use, thus increasing overall the ability to organize and integrate diverse stimuli. A qualitative difference was also noted in the involvement with standard labels, roles and themes and the more temporary nature of the non-standard labels, roles and themes. Involvement in structure reflected more cooperation whereas the more rapidly changing themes during the unstructured session were punctuated with an increased level of off-task behaviour.

Fig. 14. Extended unstructured and structured sessions: Totals for both dyads.

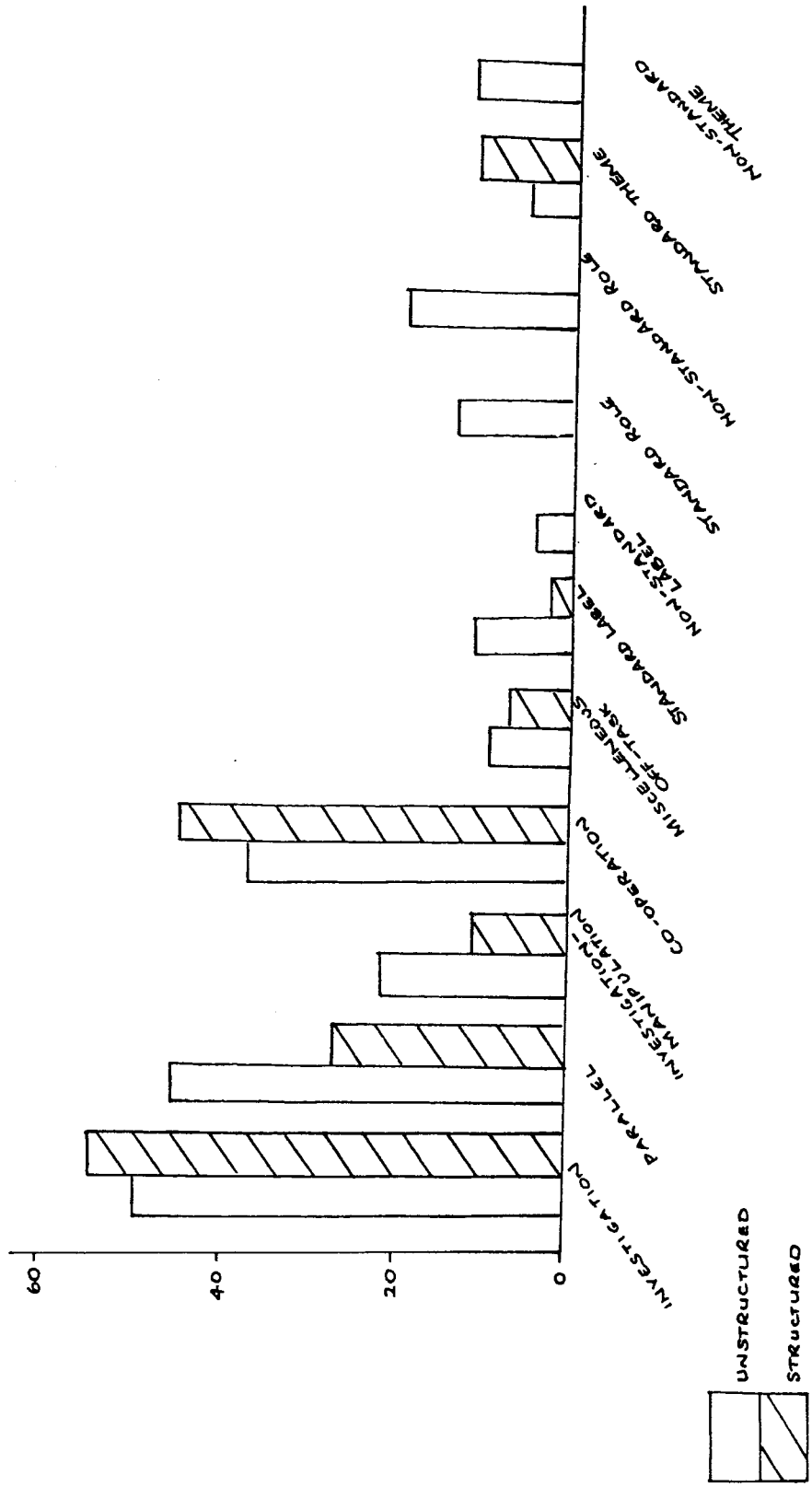
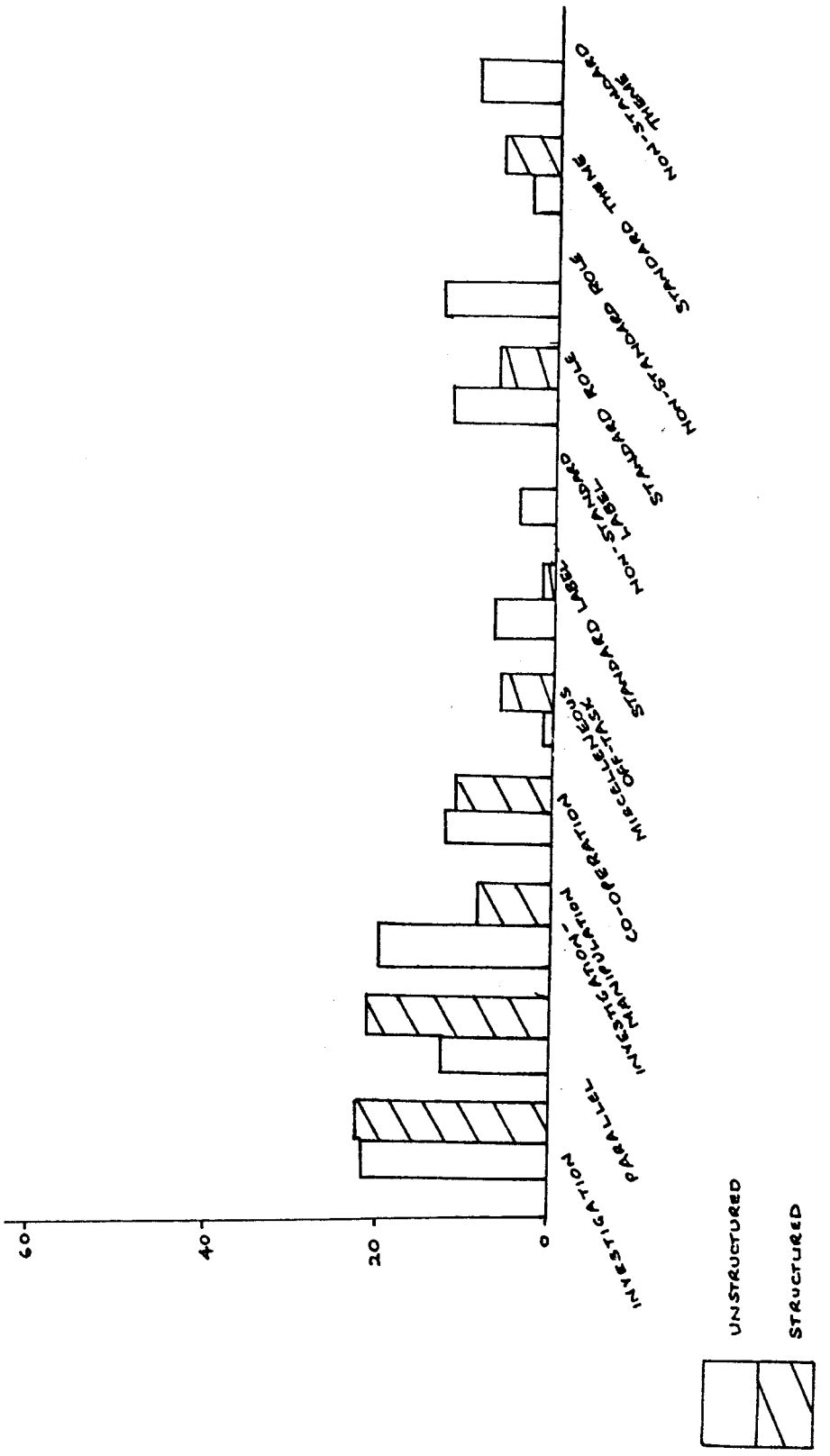


Fig. 15. Extended unstructured and structured sessions. Totals for Dyad I



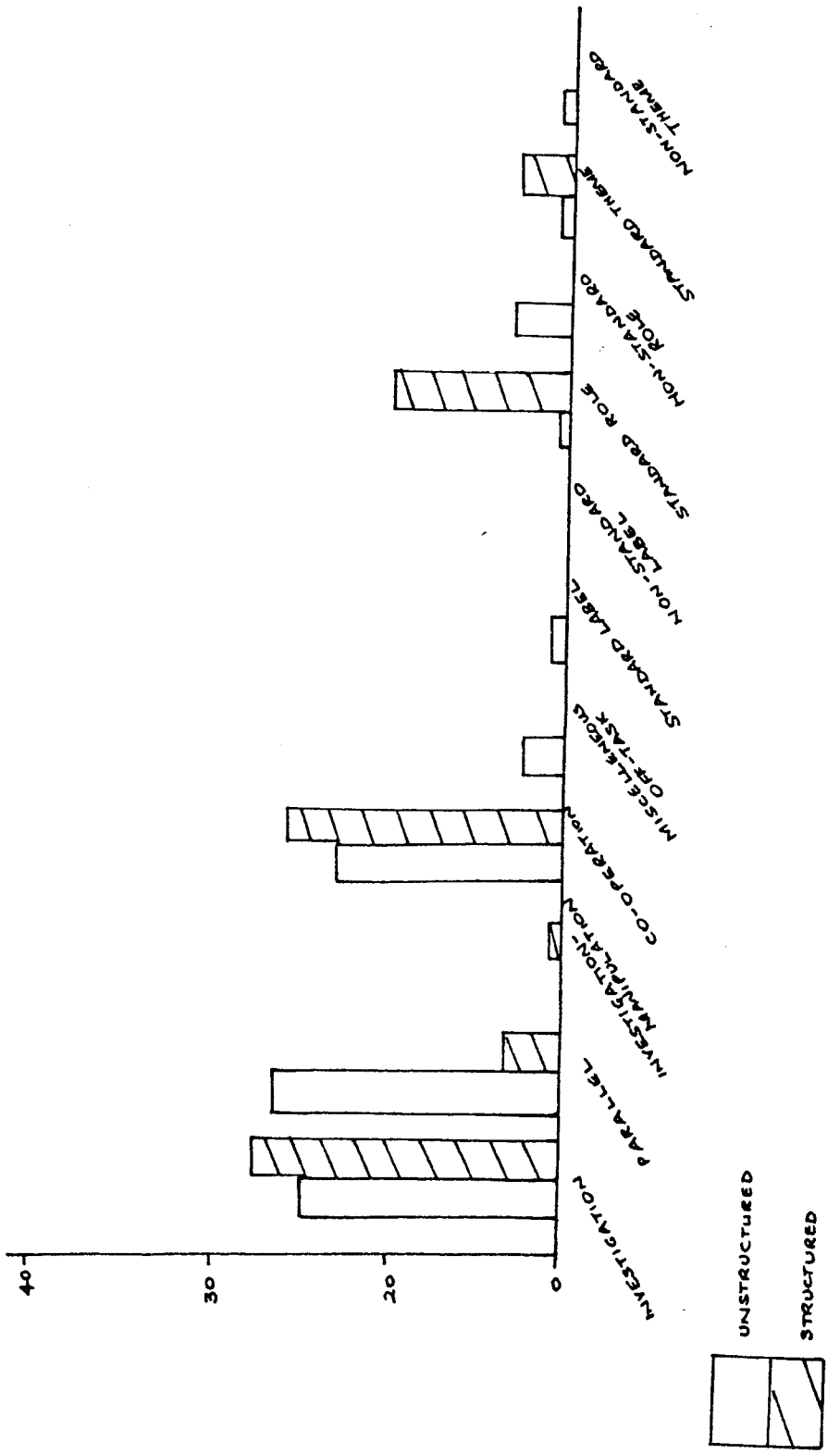


Fig. 16. Extended unstructured and structured sessions. Totals for Dyad 2.

Extended Sessions 14-15

Quantitive data

Totals of standard behaviours, that is labelling, roles and themes indicate that during the extended unstructured session some symbolic imaginative behaviour was beginning to take place. Dyad I symbolism was rooted in firetruck literalness and Dyad 2 in camper literalness. The extended unstructured session also contained one in-depth theme for each dyad, although there were still many individual, insubstantial and temporary ones reflected in increased parallelism compared to the earlier structured sessions. During this session, the non-standard and standard themes of Dyad 2 were interwoven.

Qualitative differences

During the extended unstructured sessions and unlike previous shorter sessions with the unstructured plaything, there was no initial lack of enthusiasm. For example, upon entry to the experimental room, Dyad I immediately began to play with the plaything as if it were a firetruck and both subjects began to determine whether imaginary ladders and hoses were ready to go to a fire. One subject donned an imaginary fireman's hat, followed by the other and sirens shrieked as they drove off to the fire. Neither motility nor total language was experimentally measured, but there appeared to be a dramatic increase in both compared to the previous shorter control sessions.

Interestingly, motility did not deter from the theme, as had previously been noted, but rather enhanced and promoted the theme. Arriving at an imaginary fire, make-believe ladders were carefully removed from the firetruck and hoses swished with water. Much of the language was imperative in form. This standard theme lasted approximately three minutes.

The main non-standard theme for Dyad I was an icecream-hot dog truck in which there was not only symbolic imaginative use of the plaything itself but also voices and gestures for different non-standard roles were incorporated. The plaything was divided into a fridge, barbecue, coke machine and cash register, all of which were modeled by one or other of the dyad and maintained by both subjects throughout the theme which lasted approximately three minutes. This non-standard theme was initiated by one subject after an approximate one minute lull in the play following the firetruck theme.

The remainder of the extended unstructured session for dyad I was spent sitting by a window discussing the weather and local geography. Although the plaything was totally disregarded during this period, the language interaction that took place was involved and coherent.

Dyad 2 spent a considerable amount of the extended unstructured session in a camper type theme amalgamated with a jungle theme. Camper accessories, for example, pots and cutlery, were symbolically maintained and numerous wild animals were alternately imagined and fed. The window was also used as a television and far more adventurous use of the plaything (investigation, investigation-manipulation and off-

task behaviour) was recorded than throughout the previous unstructured sessions. However, these outcomes were more as a result of the jungle than the camper theme.

Although the extended structured session tended to elicit initial confusion in both dyads, after approximately 30 seconds, Dyad I co-operatively chose and maintained the firetruck theme and Dyad 2 the camper theme, both of which were reflected in the extended unstructured session which followed the next day. Rather than enrich standard themes or elicit semi-related or divergent themes, exposure to all accessories tended to fracture the main themes in a negative way, although they were basically maintained. However, despite this factor, co-operation was still maintained and although not a measured variable, there was evidence of imaginative symbolic use of the accessories. For example, doctor's stethoscope and camper cutlery were used as 'tools' to fix 'a broken firetruck' and the blanket was used as a 'roof'. The emergency lights were placed at the back end of the firetruck to show it had broken down and was being fixed.

CHAPTER 5

Discussion

Variables 1-5 were designed to describe generally the kinds of individual and social behaviour prompted by the plaything. There was consistently more investigation, investigation-manipulation and co-operation with the structured plaything. Structure also stimulated on task activity with respect to the imaginative variables. Non-structure stimulated off-task and parallel behaviour which was reflected in decreased levels of co-operation, investigation and manipulation. It may be that the subjects not only experienced an initial lack of visual organization but also disappointment with the undefined play outcomes of the unstructured plaything. It is also likely that exploration and concentration did not occur due to the lack of novelty and complexity.

Hypothesis I

The results of this study support Hypothesis I. Structure in a plaything elicits more iconic imaginative behaviour than non-structure. There were more standard labels, roles and themes during exposure to the structured plaything. The camper form elicited most standard roles. It may be that family roles and accompanying 'home-like' stimuli are so specific that all behaviour remains on-task. During the extended structured session where a multiple choice form was available, the recent experience of each dyad was reflected in their preferred choice

of iconicism, that is, dyad I chose the firetruck and dyad 2 chose the camper.

Hypothesis II

The results of this study do not support Hypothesis II. There were more non-standard behaviours with the unstructured plaything and practice in destructuring the literalness of the plaything did not result in symbolic imaginative behaviour above baseline for the unstructured plaything. Despite high levels of exploratory behaviour during the first six structured sessions, the expected transition to symbolic imaginative behaviour during the extended sessions did not occur. It is likely that more time was required for full assimilation via exploratory behaviour than was provided in this study. This was suggested by Hutt's finding that increased complexity of a plaything leads to longer period of exploration. It is also possible that iconically stimulated imaginative behaviours were so powerful that symbolic imaginativeness was displaced. However, during the extended unstructured session there was some evidence of symbolism. Presumably this occurred as a direct result of recent experience. Not only were the three forms transferred by both dyads, that is, prior practice with dismantling the previous literalness of these forms stimulated 'standard-like' behaviours without the presence of those forms, but there was also a substantial increment in quality, cooperativeness and length of one non-standard theme to the exclusion of passing individual ones. In contrast to the earlier unstructured sessions, motility although not experimen-

tally measured, was observed to be usefully incorporated. Investigation and investigation-manipulation were also maintained without exploration-provoking accessories.

Educational implications

a) Variables 1-5

Realism in a plaything stimulates on-task exploration, concentration and cooperation, all of which are usually considered educationally desirable. For example, if the realistic stimulus were a mobile library, with appropriate accessories and adequate exposure, it may be assumed that children would build up personal histories from practice with books, records, lending procedures, fines, etc., and the roles related to a mobile library; they would not be well versed in the roles of spacemen and developing space related themes.

b) Imaginative variables

If an educational aim is to stimulate and increase imaginative development, then provision of realistic stimuli will reliably stimulate iconic imaginative behaviour. That is, if it is deemed educationally desirable that children pretend that they are certain identities and engage in thematic plots incorporating these identities, provision of relevant realistic accessories that constitute a particular realistic stimulus will ensure the elicitation of those responses. For example, 'house' or 'home' areas can be included

in a classroom for the stimulation of iconic imaginative behaviour but may not stimulate genuinely symbolic imaginative behaviour. And, unless a child has a significant personal history of iconically stimulated imaginative play, then symbolic imaginative behaviour would not be expected to occur. That is, in Piagetian terms, the child's actions will not only have acquired meaning in relation to the objects around him but also there will be evidence of a developing ability to represent an absent object by means of his own actions with or without the aid of objects that resemble the represented content to a greater or lesser degree.

The results of this study indicate that environmental provision for the development of imagination need no longer consist of what has previously and vaguely been termed 'junk' material. Such material may be all right for children who have highly developed imaginative capabilities. For children with less well developed imaginations, however, a realistic plaything will, at the very least, give practice and feedback in appropriate labelling, roles and themes. Furthermore, if that realism can be restructured, there are, at least, indications that, with more refinement in design and a longer exposure period, meaning can be liberated from a concrete object by a child's interaction with it thus producing genuine symbolic imaginative behaviour. A major practical implication would be financial

benefits from purchasing merely one plaything that (a) reliably prompts certain iconic imaginative behaviours in connection with the addition of certain realistic accessories and (b) can also be used in an unstructured condition to elicit symbolic imaginative behaviours and themes unrelated to any available accessories, all without dependence upon teacher input.

A major question raised by this study is whether an instructional plaything is as good as, or better than, more conventional methods of teaching. Of course, experimental comparison would be necessary, but the results of this study indicate a partial achievement of imaginative-like behaviours through instructional play.

Implications for further research

The results of this study indicates that playthings can be instructional and can be designed for the purpose of producing imaginative-like behaviours, the basis for that design being in the player-plaything interactional structure. As well as providing appropriate reinforcement, contingent upon the occurrence of specific (in this case imaginative) behaviours, a plaything must also provide reinforcement for simple activity with it. Certainly no satiation was noted with the structured versions and, contrary to current opinion, the realism of the standard accessories triggered some symbolic activity.

Although there were no incidences of transferred standard behaviours during the first seven unstructured sessions, the extended unstructured session elicited more standard labels than the extended structured session and there was a distinct increase in standard roles and themes over the earlier sessions. It may be that during the first six structured sessions, due to inadequate time exposure, the subjects were unable to explore the dismantling procedures in any depth. However, in the extended structured session they were presented with all accessories and an unstructured plaything which necessiated a choice regarding reconstituted realism. Certainly there was no hesitation about the choice of structure over non-structure in either dyad and the manner of plaything presentation plus recent personal experience elicited restructuring behaviour. It is likely that increased exposure and dyad structure choices influenced behaviour in the extended unstructured session.

It seems likely that the appeal of literalness in the first six structured sessions may have been so strong as to eclipse the possibilities of change through dismantling and reconstruction behaviour. A more promising approach might be to introduce these procedures in a more sequential manner, for example, after an initial exposure to a realistic structured form with all accessories, a second exposure could be presented with one fewer accessory. Alternatively, with consecutive exposures, a realistic structure might be constructed with the addition of an accessory at every exposure. Such a design would also give not only increased but more

articulated exposure to dismantling and restructuring techniques but would also require a longer experimental period.

Although motility was not measured, in retrospect, it would be an important variable to include in the manner of Ellis and Scholtz (1978). Despite the appeal of motility to less imaginative children and its usefulness as a plaything variable, use of motility, which seemed to increase distinctly in the unstructured condition, tended to be the only response during the total unstructured exposures and therefore obliterated the possibility of any symbolic imaginative responses. For example, pushing, jumping on and off, recorded as off task behaviour, required virtually no interaction between subjects, no exploration, manipulation and certainly no concentration. Such actions seemed to be solely for their kinesthetic pleasure. The subjects, unable to function with ease when faced with an unstructured task that required flow of ideas and set shift, displayed lack of flexibility, fluency and sponteneity.

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Appendix A

Playfulness Scale (Form K)

RATING INSTRUCTIONS

As a teacher, you know that children differ in many ways—some are shy, some are friendly, some grab what they want, others ask, or wait, for it.

In this study, we are interested in finding out how children differ in the way they go about their play activities—how spontaneous, how cheerful, how "full of the devil" they are—and we hope to have your cooperation in this work.

Attached you will find, therefore, a rating measure made up of five scales that refer directly to a child's behavior during play. You will note that each of the five scales or questions has two parts. Part A of the question aims to get at the frequency or quantity of the trait; Part B tries to assess the quality of the trait shown. For example, "how often does the child show joy" would be the quantity of the trait, and "with what freedom of expression" would be the quality of the trait.

We hope you will find it possible and worthwhile to look at the children in your group along the traits suggested in the rating scales and give us your evaluation of them.

We are also interested in finding out what your impression is of the child's intelligence and physical attractiveness, and we would like you to give us your estimate of these as well.

When you rate the children, you will, of course, want to compare them with one another as well as keep in mind a general standard for these traits in kindergartners.

It is easier and better to rate all children first on one trait (or question) and then do the same for each of the six other questions. The sheets for marking down your ratings have therefore, been set up for the different traits.

There will be 12 ratings for each child. Please put down the figure that best indicates your evaluation of the child's present standing. Descriptive terms are also given to help you in making your rating.

Any comments about the content or form of the questions, or about any difficulties that you may have in answering them, will be welcomed.

RATING SCALES

1. A. *How often does the child engage in spontaneous physical movement and activity during play?*

   This behavior would include skipping, hopping, jumping, and other rhythmic

movements of the whole body or parts of the body, like arms, legs or head, that could be judged as a fairly clear indication of exuberance.

Very often	Often	Occasionally	Rarely	Very rarely
5	4	3	2	1

B. *How is his/her motor coordination during physical activity?*

Excellent	Very good	Good	Fair	Poor
5	4	3	2	1

II. A. *How often does the child show joy in or during his/her play activities?*
This may be judged by facial expression, such as smiling, by verbal expressions, such as saying "I like this," or "This is fun," or by more indirect vocalizing, such as singing as an accompaniment of the activity, for example, "choo, choo, train, go along." Other behavioral indicators would be repetition of activity or resumption of activity with clear evidence of enjoyment.

Very often	Often	Occasionally	Rarely	Very rarely
5	4	3	2	1

B. *With what freedom of expression does he/she show joy?*
This may be judged by the intensity or loudness of a chuckle or a sing-song, as well as by the child's ability to repeat or resume his/her activity by his/her own choice.

Very high	High	Moderate	Some	Little
5	4	3	2	1

III. A. *How often does the child show a sense of humor during play?*
By "sense of humor" is meant rhyming, gentle teasing—a "glint-in-the-eye" behavior—as well as an ability to see a situation as funny as it pertains to himself/herself or others.

Very often	Often	Occasionally	Rarely	Very rarely
5	4	3	2	1

B. *With what degree of consistency is humor shown?*
This may be judged by its occurrence across situations and from day to day.

Very high	High	Moderate	Some	Little
5	4	3	2	1

IV. A. *While playing, how often does the child show flexibility in his interaction with the surrounding group structure?*
This may be judged by the child joining different groups at any one play period, and becoming part of them and their play activity, and by being able to move in and out of these groups by his/her own choice or by suggestion from the group members without aggressive intent on their part.

Very often	Often	Occasionally	Rarely	Very rarely
5	4	3	2	1

B. *With what degree of ease does the child move?*
This may be judged by ready acceptance of the new situation, lack of distress shown over the change, including an ability also to amuse himself/herself if left solitary after peer interaction.

Very high	High	Moderate	Some	Little
5	4	3	2	1

V. A. *How often does the child show spontaneity during expressive and dramatic play?*
Instances of such behavior would be labeling the play products in clay, sand, or paints as they grow and/or changing them as a result of, for example, a personal whim, an accidental shape, or a suggestion from the peer group; similarly, in dramatic play, a labeling of play roles as the group structure develops and changes, for example, extending or shrinking a "family" as playmates come or go.

Very often	Often	Occasionally	Rarely	Very rarely
5	4	3	2	1

B. *What degree of imagination does the child show in his/her expressive dramatic play?*
Instances of imagination would be labeling and using inanimate or animate objects for other than the accepted usage, as well as incorporating nonexistent objects into the play situation.

Very high	High	Moderate	Some	Very low
5	4	3	2	1

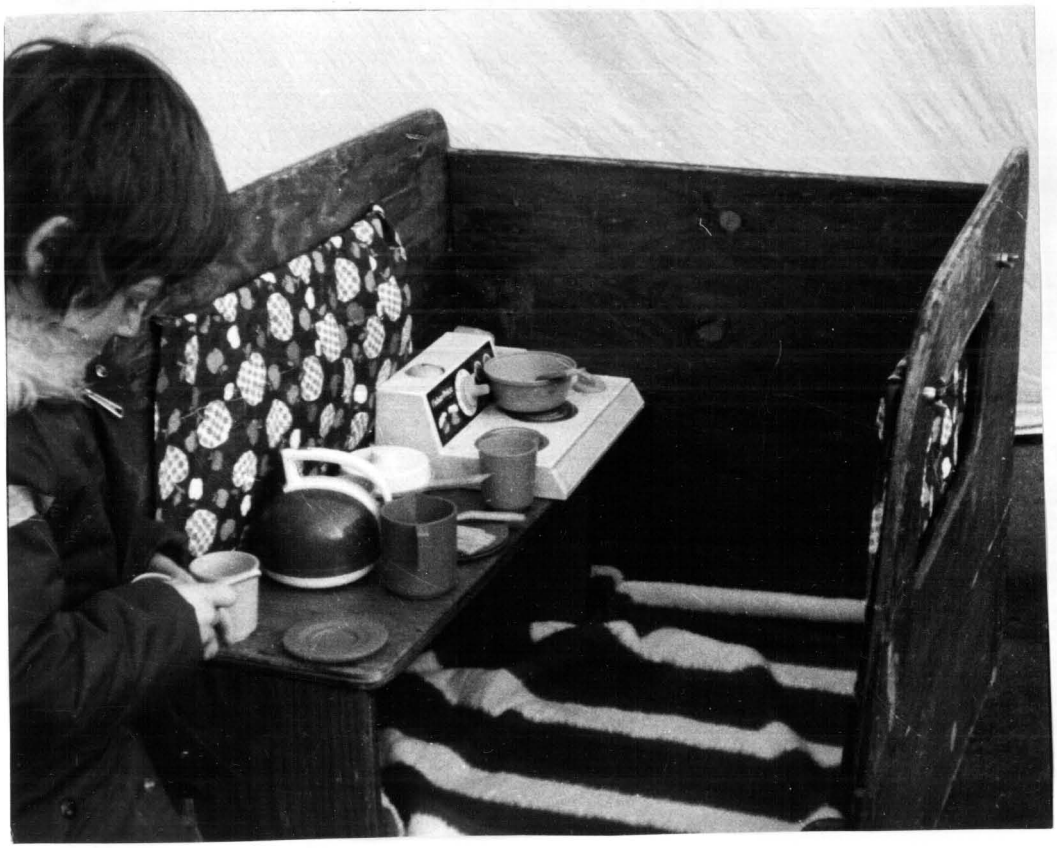
VI. *How bright is the child?*
This is your estimate of the child's intelligence based on observed behavior or inferred potential.

Extremely bright	Bright	Average	Moderately bright	Not too bright
5	4	3	2	1

VII. *How attractive is the child?*
This is your evaluation of the child's physical appeal.

Beautiful	Very attractive	Nice-looking	Passable in looks and appearance	Somewhat homely and unattractive
5	4	3	2	1

Appendix B



APPENDIX C

Minutes	1.....	2.....	3.....	4.....	5.....	Comments
Measure						
Investigation						
Parallel						
Investigation/ Manipulation						
Co-operative						
Miscelleneous off-task						
Standard label						
Non-standard label						
Standard role(s)						
Non-standard role(s)						
Theme standard						
Theme non-standard						