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Title: A STUDY OF PERCEPTUAL CORRELATES TO ROLE-TAKING ABILITY WITH FOURTH THROUGH SIXTH GRADE CHILDREN

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This study was designed for the purpose of expanding knowledge of the correlates of role-taking as measured by Feffer's Role-Taking Task. The variables of perception, sex, age, reading achievement, and ordinal position were investigated. The perceptual variables measured were visual memory, field dependence/independence, auditory memory, and organizing and synthesizing ability. The instruments used were Memory-For-Designs, Children's Embedded Figures Test, Digit Span, and Block Design, respectively. Reading Achievement was measured by the Metropolitan Achievement Test.

One hundred and nine fourth through sixth grade students were administered the Role-Taking Task and the four perceptual tests. Demographic data were obtained through school records. An estimate of verbal intelligence was used as a control. Nine hypotheses were formulated, and were analyzed using Pearson product moment correlations, t-tests and stepwise regression analysis. Means and standard

deviations were used to gain additional descriptive data on the variables. The hypotheses were tested using the group considered as a whole. For further analysis purposes the subjects were considered according to three age groupings, 9.6-10.5, 10.6-11.5, and 11.6-12.5. Data using two scoring systems on the Role-Taking Task are presented.

Analysis of the data revealed that the Children's Embedded Figures Test and Digit Span had significant correlations ($p < .05$) with the Role-Taking Task. Block Design and the Memory-For-Designs were not significantly related to role-taking. Of the four perceptual variables the Children's Embedded Figures Test explained the most variation, using the regression analysis. More variation was explained by the perceptual variables at the 9.6-10.5 age range than the other age groupings including total sample.

There was not a significant difference between the performance of males and females on the Role-Taking Task. However, males performed better than females at the younger age group, but this was reversed for the following two ages. The relationship between age and role-taking was significant for the total and middle age groups at the .01 level. Reading Achievement and the Role-Taking Task were significantly related for the total group and the ages 10.6-11.5. Later and first borns did not differ significantly in their performance on the Role-Taking Task.

A Study of Perceptual Correlates to Role-Taking Ability With Fourth Through Sixth Grade Children

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A STUDY OF PERCEPTUAL CORRELATES TO ROLE-TAKING ABILITY WITH FOURTH THROUGH SIXTH GRADE CHILDREN

I. INTRODUCTION

The individual is a unique entity who has the potential of becoming more than he is at any given moment. He develops and finds meaning in his life through choice, commitments and experiences. The degree to which he is open to experiences available to him determines the variety of choices he may make. The degree to which he is aware of himself and others defines his responsibility as a person.

One of the most important factors in the growth process is differentiation between self and others. In this differentiating process a child learns to distinguish traits attributable to him and those that are distinctly others'. Attributes which are called "me" become integrated into a role conception or cognitive structure of self. As a child develops, he does many things which expand his ideas of self and others. The extent a child is able to identify attributes to others, as distinct from self, increases with age. As a child grows older and his experience with others expands, he generally becomes more adept in his ability to understand another's perspective; that is, to take another's role. As this role-taking ability increases, interpersonal communication takes on new depth.

Since the early 1930's role-taking as a skill which a person

acquires has been the subject of discussion and investigation. Mead (1934) influenced much of the trend of thought at that time. His influence extends to current role theorists as well, such as the concept of taking the role of the other in the process of personality development. This skill, called role playing or role enactment, as a concept is included in "role theory" (Appendix A) and is used for diagnostic and therapeutic purposes as well as being a technique employed by educators to facilitate learning. Underlying role playing skill is the ability to take roles. Common assumptions about role-taking are that (1) role-taking is an ability which is developmental, that is, it increases with age and experiences, (2) role-taking is a basic element in the role playing or role enactment process, and (3) role-taking ability is a crucial part of effective communication (Feffer, 1959, 1970; Feffer and Fourevitch, 1960; Wolfe, 1963; Bowers and London, 1965; Brim, 1967; Flavell, 1968; Thompson, 1968).

Understanding the developmental process increases awareness of ways a more facilitative climate for growth can be provided for each individual. Age alone is not a sufficient explanation for the growth process. Rather, underlying qualities such as cognitive ability, perceptual skills, as well as environmental factors are more explanatory. Research has indicated that age, intelligence, and certain Piagetian cognitive tasks are related to role-taking ability (Feffer and Gourevitch, 1960; Feigenbaum, 1968; Flavell, 1968; Feffer, 1970).

Little research has been done to determine if other perceptual skills are also related.

The process of role-taking implies ability to distinguish self from others, differentiating among roles, the aspect of organizing and synthesizing thought processes in relation to the other and the ability to put this perceptual process into action. Retention in visual and auditory memory plus ability in visual perception should be directly related to role-taking ability. In order to more precisely describe role-taking as a developmental process, longitudinal studies are needed. However, given drawbacks, a cross sectional design will be used to obtain developmental trends.

Purpose

This study was designed for the purpose of expanding knowledge of the correlates of role-taking as measured by Feffer's Role-Taking Task. This was accomplished by (1) investigating the interrelationship between certain perceptual skills and role-taking ability, (2) correlating role-taking ability with these perceptual skill variables, sex, age, reading achievement and ordinal position, and (3) determining how each perceptual skill varies in relation to the other with regards to role-taking ability.

Definitions

Role-taking. This ability involved the covert, cognitive process of adopting the perspective of another. The ability to make specific inferences about another's capacities, attributes, expectations, feelings and potential reactions was implied. This process was measured by the Role-Taking Task, RTT (Feffer, 1970).

Visual memory. This area of perception required the ability to retain and reproduce geometric figures upon immediate recall. This was measured by the Memory-For-Designs Test, MFD (Graham and Kendall, 1969).

Field dependence/independence. This concept involved the process of the individual identifying a figure which was embedded within an organized field. Increased field independence was demonstrated by more ability in separating the figure from the field, or the background. This perceptual area was measured by the Children's Embedded Figures Test (Witkin et al., 1971).

Auditory memory. This perceptual skill implied the ability to concentrate on verbally presented material and required the facility to demonstrate retention by immediate oral repetition. This area was measured by Digit Span (DS), a sub-test on the Wechsler Intelligence Scale for Children, WISC (Wechsler, 1949).

Analyzing and synthesizing ability. This area of perception

implied the non-verbal ability to conceptualize and restructure an unorganized field. Block Design (BD), a sub-test on the Wechsler Intelligence Scale for Children (Wechsler, 1949), was used.

Verbal intelligence. The Wechsler Intelligence Scale for Children measured two broad areas of intelligence, verbal and performance. The sub-test which correlates most highly with verbal intelligence is Vocabulary. This sub-test was used as an estimate of intelligence (Wechsler, 1949).

Reading achievement. Levels of reading attainment were assessed in relation to grade level in school. For this study stanine values obtained on the Metropolitan Achievement Test were used (Buros, 1972).

Significance of the Study

Assessing correlates to role-taking ability is expected to delineate related skill areas. Significant relationships may have implications for the type of training in communication skills which children need to develop. Further, the study is designed to explore the significance of other demographic variables in relation to role-taking which have not been researched. In addition, this study is expected to provide data on the Role-Taking test. Additional information as to the use of this test will aid further research.

Hypotheses

Hypothesis One. There is no significant relationship between the Role-Taking Task Total Score and Memory-For-Designs.

Hypothesis Two. There is no significant relationship between the Role-Taking Task Total Score and the Children's Embedded Figures Test.

Hypothesis Three. There is no significant relationship between the Role-Taking Task Total Score and Digit Span.

Hypothesis Four. There is no significant relationship between the Role-Taking Task Total Score and Block Design.

Hypothesis Five. There is no significant difference between males and females on the Role-Taking Task Total Score.

Hypothesis Six. There is no significant relationship between age and the Role-Taking Task Total Score.

Hypothesis Seven. There is no significant relationship between reading achievement and the Role-Taking Task Total Score.

Hypothesis Eight. There is no significant difference between children in the first ordinal position and those in other ordinal positions on the Role-Taking Task Total Score.

Hypothesis Nine. There is no difference in the variance contributed by one perceptual variable as compared to another with regard to role-taking ability.

Limitations

Several limitations to this study narrow the inferences and generalizations which can be made.

(1) Role-taking was being discussed in a very specific sense using an instrument specifically designed for this singular purpose. Studies relating this instrument to other role-taking and role playing instruments have not been done. However, theoretical material was presented which represents role-taking as a basic skill in the communication process. Normative data regarding role-taking ability were not available.

(2) The perceptual tests chosen represented only a very small portion in the total field of perception.

(3) The population selected allowed generalizations to be made with other small communities of similar composition.

Analysis of Data

The interrelationship between perceptual variables and other variables to role-taking ability will be tested with Pearson's product moment correlations and t-tests. Regression analysis will be run with the perceptual variables to determine how much variance each contributes to role-taking ability.

II. REVIEW OF LITERATURE

Discussion of theoretical positions in the literature in relation to role-taking and role playing outnumber empirical studies. This is exemplified in role theory literature by the works of Mead (1934), Moreno (1940), and Sarbin (1952, 1955, 1968), and further role theory applied by Newcomb (1950), Neiman and Hughes (1951), Mangus (1957a, b), Dyer (1960, 1962), Turner (1962), and Brim and Wheeler (1967).

Changes in self-perceptions and attitudes are regularly associated with changes in perceptions of and attitudes toward others. Individuals develop and change in relation to and in communication with one another. One of the ways perceptions of self and others is facilitated within the classroom is through the method of discussing feelings about self and others. The understanding of these attributes involves the role-taking process. Role playing goes a step further in that it requires action, which is based on role-taking ability.

In the classroom role playing is more frequently used than direct attempts to assess or train in the more basic area of role-taking. Multiple values of role playing in the classroom have been reported. Some which have been discussed in the literature are: opportunity for face-to-face communication; exploration of a wide variety of problem areas without fear of consequence; means of

improving mental health in that it can open outlets previously blocked; and improvement of understanding of others (Shaftel, 1950; Sobel, 1952; Benne, 1954; Chester and Fox, 1966; Olsen, 1966; Ramirez, 1969).

More specifically this enactment process has been applied in exploring attitudes and gaining information about occupations (Torrance, 1949). Role playing has encouraged greater involvement in academic fields because of the identification and motivation engendered (Wood, 1952; Zeleny, 1960; Shaftel, 1967, 1970).

Ramirez (1969) elaborates that role playing creates spontaneous history of common experience and dialogue which serves as a basis for initiating, maintaining, and evaluating natural inquiry in the classroom. Both Ramirez and Benne (1954) consider a major goal of education to widen the range of roles available to an individual and to increase group members' sensitivity toward what roles are needed.

Bruner (1961) indicates that the more one has practice (in the act of discovery through role playing), the more likely he will be able to generalize into a style of problem-solving almost any task he would encounter. Simply practice in role playing does not itself sensitize, for multiple variables are usually responsible for change in a person.

There are several steps within the role-taking process before one is able to effectively relay a message to another (Flavell, 1968). The first which must be acquired involves the process of identifying

the existence of another's role as distinct and separate from one's own. This does not imply that he is able to identify the attributes of the difference, but only that they exist. Secondly, once the separateness is perceived, one must feel a need to utilize the knowledge he has about separate existence; he must want to communicate effectively with another. Recognizing separateness and having the desire to relate are only part of the process, for thirdly, he needs to be able to infer from a variety of cues and predict the role attributes of another. A fourth step is the recognition that one's own point of view, perspective or action may interfere with one's being able to infer the role attributes of another. A person must recognize and have some control of his own needs, or his inference will reflect more of himself than the other. A strong need exists to maintain one's own equilibrium. Only when one feels some degree of confidence with himself is he able to deal effectively with his own needs as a possible interfering factor in understanding another. Lastly, one must be able to apply the knowledge or skill described in the preceding stages in order to achieve a particular goal response.

Many factors affect progression from stage to stage of the role-taking process. Some of these variables are social, emotional, cognition, perception, sex, age, reading achievement, and ordinal position. For the purposes of this study, social and emotional factors

are not under investigation, even though their validity as contributing factors are obvious.

Role-Taking and Cognition

Two main areas of cognition have been studied in relation to role-taking ability. These areas are Piaget's tasks of cognitive development and more conventional measures of intelligence.

The Role-Taking Task (RTT), developed by Feffer (1959), is based on Piaget's theoretical framework of cognitive development. Simplistically, cognitive development is the process of reorganization of behavior in which focusing upon single aspects of the experimental field sequentially (sequential decentering) becomes subordinated to focusing upon a number of aspects of the field in relation to one another (relational decentering). An example of this is in Piaget's classical experiment of conservation. In this study the child is asked to make judgements of equivalent quantities of liquid poured into containers of different shapes. Lack of conservation is shown in his focusing first on one dimension, such as height of liquid, without taking into account the changes of shape of the container. The young child shows this lack of conservation whereas the older child is able to focus upon both aspects and coordinate change along both dimensions. Swinson (1965) investigated the relationship of cognitive development and the Role-Taking Task with 60 first and second grade

boys. Cognitive development was measured by the following Piagetian tasks: serialization of asymmetrical relations, conservation of quantity and formation of classes. Positive relationships ($r = .52$, $r = .40$) at the $p < .01$ level were found for first and second graders, respectively, when total concrete operations tasks and the Role-Taking Task were correlated. Where age, I. Q. and grade were partialed out, significant relationships were also found.

In relating the Role-Taking Task with Piagetian tasks, decentering scores were found to be higher for older than younger children, and that WISC Vocabulary standard scores are positively related to both (Feffer and Gourevitch, 1960). Feigenbaum (1968) used the Peabody Picture Vocabulary test and five tests of correspondence and conservation as pre- and post-tests in a six-week training program using reversibility and reciprocity, physical perspective taking, and social role playing. He found that reversibility-reciprocity training does not induce conservation of discontinuous quantities in children. Improvement in children's social role-taking ability is more closely associated with reversibility-reciprocity training than with other kinds. Groups given role playing and physical perceptive training significantly regressed in role-taking ability.

The more conventional cognitive measure, mental age, has also been positively correlated with role-taking ability (Feffer and Gourevitch, 1960; Wolfe, 1963; Bowers and London, 1965; Thompson,

1968; Feffer, 1970; Wright, 1972). The criteria for mental age has been the full scale Wechsler Intelligence Test for Children (WISC), Vocabulary Subtest of the WISC, and California Test of Mental Maturity.

The RTT was expanded to be used with mentally retarded children (Feffer, 1970). Results of investigating the performance of these children indicated significant association between mental age and RTT levels of shift and coordination composite and the highest score obtained. The hypothesis was confirmed that "role-taking of the retarded, as elicited by the revised RTT procedure and evaluated by the present scoring categories, has developmental implications which are similar to that of previously tested intellectually normal children" (Feffer, 1970, p. 19).

Swinson (1965) also investigated the relationship between the Role-Taking Task and Intelligence. Intelligence was measured by the Kuhlman-Anderson method. For the 60 first and second graders, considered as a group, the correlation was . 10, and separately . 01 and . 23, respectively. As these were not significant, and the relationships previously cited between Piagetian tasks and the Role-Taking Task were, she concluded that role-taking was more related to the non-conventional measure of intelligence. Swinson noted that intelligence tests are less well defined measures of cognition. Differences between her scores and Feffer's may be due to the scoring techniques

used in the studies for the Role-Taking Task, and different measures of intelligence.

Role-taking and Perception

One study has been reviewed which related role-taking (as measured by the Dramatic Acting Test) with the Porteus Maze Test and London's Picture Discrimination (Bowers and London, 1965). Product moment correlations of .51 and .60 were found, respectively, which were significant at the .05 level.

In personal communique, Feffer (1971) commented on incidental findings in previous studies which have not yet been reported. In particular he would expect to find a relationship between Kohs Blocks and the Role-Taking Task. In his 1959 study with adult males, a positive relationship between the RTT and the Gottschaldt Embedded Figures Test was found. Additionally, those who scored higher on the RTT also produced more integrated movement responses on the Rorschach. He concludes by commenting,

> My impression is that the Gottschaldt, the integrated M responses, and the WAIS block design tap a common function: an ability to break down and reorganize strongly cohering perceptual gestalten. It's another question and a theoretical one, as to the nature of the relationship between this ability (if one were to find this) and the RTT and conservation response (Feffer, 1971, p. 1).

Research in the area of perception as directly related to role-taking is paucit. However, considerable research has been done into

the broad area of personality and perception.

Particularly pertinent are the elaborate studies reported by Witkin et al. (1954) with the Rod and Frame Test and the Embedded Figures. Ability to identify figures which are embedded within a field has been related to cognitive style, perceptual development and personality traits. The construct field independence has been applied to one who differentiates the embedded figures better than one who does not. In other words, he is not limited by the field itself, but can reorganize and reconceptualize in order to analyze and identify one part of it. Field dependent people tend to leave the organization of the field as it is.

Field independence represents an articulated cognitive style and field dependence a global cognitive style. Articulation and global cognitive styles represent the two extremes with most people falling more towards the middle from both ends. Articulation refers to the use of "more varied and complex principles of field integration." This implies increasing discrimination of items from their background (figure from ground), reorganizing a field which is already organized or "imposing structure on a field, and so perceive it as organized, when the field has relatively inherent structure" (Witkins et al., 1971, p. 7). On the other hand, in the global dimension, the structure of the field determines how the whole as well as its parts are perceived. If the field is unstructured one would tend to perceive it as diffuse and be unable to impose structure.

Studies have related performance in identifying embedded figures with three factors of intelligence on the Wechsler Intelligence Scale for Children. As identified by Cohen they were analytic (including sub-tests Block Design, Object Assembly, Picture Completion), verbal-comprehension (Vocabulary, Information, Comprehension), and attention-concentration (Digit Span, Arithmetic, Digit Symbol). Field-independent subjects performed better on the analytical triad. Since Block Design involves the capacity to overcome embeddedness, "too rigid adherence to a conceptualized image of the solution may impair performance on this task" (Goodenough and Karp, 1961, p. 242). A factor common to both perceptual and intellectual tasks involved disembedding. Thurstone (as cited in Witkin et al., 1954) found correlations of .57 and .51 between scores on the Gottschaldt figures test and Kohs-Block Design. In comparing WISC performance with scores on the embedded figures test, with 12-year-olds, product-moment correlations of .54 and .57 were found for boys and girls, respectively, on the Verbal Scale and .88 and .73 for the Performance Scale.

Within the personality dimension, field independence seems to be related to an increased sense of separate identity, that is, one's ability to differentiate between his own feelings and those of others. He relied more on internal resources rather than being influenced by the external. The field dependent person was very attentive to others'

reactions and feelings and his behavior tended to be modified accordingly. What he perceived was strongly influenced by his feelings, in contrast with being able to discriminate among them. In terms of characteristic defenses it was more typical for the field dependent person to use isolation, obsessive-compulsive or intellectualization than the field dependent person who tends to use repression and denial (Witkin et al., 1962).

A longitudinal study found that children become more field independent as they grow older until moving toward stabilization around 17 years of age, and plateauing in young adulthood. They retain their relative degree of field dependence among their peers throughout this development (Witkin, Goodenough and Karp, 1967). In general, males tend to be more field independent than females. These sex differences may not be present before eight years of age or in geriatric groups. In contrast, in standardizing the revised Children's Embedded Figures Test used for this study with children from 5 to 12 years of age, neither sex or the interaction between age and sex were significant. Children who were found to be field dependent on the Children's Embedded Figures Test were significantly more affected by approval or disapproval than children who were field independent (Witkin et al., 1971). Witkin's findings support a generally held tenet of personality theory that "a particular way of perceiving usually occurs in association with congruent personality characteristics" (Witkin et al., 1954, p. 429)

The paucity of research relating perceptual skills with role-taking ability extends into the variables used in this study. Virtually non-existent are studies relating memory with role-taking. Auditory memory has been found to be related to personality variables such as tolerance to frustration, which affects one of the abilities required which is concentration (Glasser and Zimmerman, 1967). The other aspect of memory which has not been related to role-taking ability is visual memory. An indirectly related study was done by Mackie (1963). He found that brain damaged children who scored lower on the Memory-For-Designs test showed behavioral rigidity when they were asked to solve new problems which required a shift or change in a previously learned skill. This inflexibility demonstrated in this particular perceptual field area may also relate to poor role-taking since the latter requires flexibility in shifting perspective.

Role-taking and Sex

Three studies have reported findings relating role-taking to sex. Bowers and London (1965) found no differences between role playing ability and the sexes of 40 children between 5 and 11 years of age. The role playing test used was the Dramatic Acting Test. In another study using the Role-Taking Task with male and female undergraduate psychology students (Feffer and Suchotliff, 1966), significant differences were not found.

Wright (1972) conducted a study with four groups of children, a total of 100 sixth graders, which investigated the effect of creative drama on role-taking skills. Role-taking was measured by Feffer's Role-Taking Task. Males received significantly higher scores on a post-test than females ($F = 4.170$, $p < .05$). Females did not show significant improvement. An explanation was given that girls learn to be more sensitive than boys through their social training, but that boys can be helped to develop in this area. Practice in role-taking appears to be more important than discussion of character development.

Role-taking and Age

Three main patterns of response have emerged in Feffer's (1970) investigation with the Role-Taking Task. The procedure consisted of an individual making up a story, then retelling it from the point of view of two of the characters. At about six years of age "uncorrected decentering" was present, in that there was obvious discontinuity between all versions of the story. Between seven and eight years of age a limited, fluctuating form of coordination developed between perspectives. The third pattern emerged about nine years of age and involved synthesis of different perspectives, and hence it was considered the simultaneous coordination indicative of the cognitive operation. Flavell (1968) elaborated that in his egocentrism the young

child takes notice of certain data but does not cognize that his notion of data differed from another. The skills to organize and think about it are not yet developed in the young child, and he is unable to go beyond his intellectual egocentrism of one view. With increased social interaction with others, the child finds that his views are not necessarily those held by others. As he reevaluates his percepts in light of his knowledge, cognitive egocentrism gives way.

Several studies supported the contention that older children are better role-takers than younger (Feffer and Gourevitch, 1960; Wolfe, 1963; Bowers and London, 1965; Buchsbaum, 1965; Thompson, 1968; Feffer, 1970). Feffer's 1960 study reported that RTT scores increased with age with the exception of one inversion. The 10 to 11 age group scored higher than the 12 to 13. As a possible explanation for Feffer's inversion, Candell (1965) suggested that it may have represented a reoccurrence of egocentrism at the onset of formal and abstract thought which results from a qualitative change in thought processes. In investigating this phenomena with children 9 to 13 years of age, an inversion at that age group was not found, but a regular increase in RTT scores with age ($r = .44$, $p < .01$).

Selman (1971) found relationships between Kohlberg's Moral Judgement measure and two of Flavell's role-taking tasks with 60 eight to ten-year-olds. Kohlberg has hypothesized six stages relating to the development of moral judgement. The higher levels of moral

judgement require the ability to take another role. Between ages 9 and 13 cognitive characteristics of conventional moral thought are "moral stereotyping, empathic moral definition, sensitivity to and self guidance by anticipated approval or disapproval by others and identification with authority and its goals"(Selman, 1971, p. 88). Development of the ability to understand the reciprocal nature of interpersonal relations is a necessary but not sufficient condition for the development of conventional moral thought.

Thompson (1968) investigated interpersonal adjustment of children in their role playing ability. Two assumptions were that role playing is crucial for the occurrence of well-adjusted behavior and that role playing as a personality variable is a developmental phenomenon. The study tested the hypotheses that (1) older children are better role players, (2) younger, well-adjusted children are better role players than the poorly adjusted, and (3) role playing ability for specific contents varies among populations. Subjects were 90 boys, ages 7 through 12; 30 were hospitalized delinquents (low socialized group), 30 were out-patient delinquents (middle socialized group), and 30 were "normal" within the local community (high socialized group). Subjects were matched for intelligence, socioeconomic status and age. The main instruments used were the Dramatic Acting Test (verbal test), Social Charades Test (non verbal), and the Vocabulary Sub-Test from the Wechsler Intelligence Scale for Children. Results

indicated that older children were better role players than younger on both measures of role playing. The prediction that role playing ability for specific content varies among the population was not supported by either measure of role playing. On the Dramatic Acting Test all subjects, regardless of adjustment group, played aggressive roles more skillfully than they did cooperative roles.

Reading Achievement

Multiple factors have been related to under-achievement in reading at school. Many of these related to organic etiology. A handicap in one of the modalities of learning, such as inadequate perception of gestalten (Koppitz, 1965; Trieschumann, 1968; Elkind, 1969), has been shown to have an affect on reading level. Emotional problems also have a bearing on the child's achievement in reading (Feldhusen, 1967). For example, the highly anxious child may be so concerned about the correct pronounciation of words that he is inadequate in grasping the meaning of what he is reading. In attempting to assess the general reasons underlying reading underachievement, separation of organic and emotional causation is difficult. Both diagnostic categories of children frequently display inadequacies in the perceptual area, such as in visual motor tasks, memory organizing and synthesizing ability.

When looking further into the emotional problems, many of the

underachieving children seem to have poor concepts of themselves and related difficulties in peer group relationships. The role-taking process may be a factor basically related to perceptual disorganization which is also related to reading achievement.

Hoyser (1971) investigated the relationship between therapeutic non-directive play, reading achievement and self-concept with 54 third grade boys. An improvement in self concept was found for the youngsters who participated in both play and reading groups rather than only one or the other. Axline (1947) found that second graders who were exposed to a therapeutic environment in the classroom with no emphasis on learning to read, made considerable improvement in reading. Seeman and Edwards (1954) also found significant changes in reading achievement for fifth and sixth graders who were exposed to a non-directive therapeutic approach.

Ordinal Position

Numerous studies have been done in the area of ordinal position and its relationship to a wide variety of factors, with conflicting results. Some of the factors which have been investigated are achievement (Altus, 1956; Schacter, 1963; Datta, 1967), creativity, ability, achievement and sex (Circirelli, 1967), personality (Schooler, 1961; Schacter, 1964), and role diffusion (Sutton-Smith and Rosenberg, 1966).

The most related of these studies to role-taking was the role diffusion theory as used by Sutton-Smith and Rosenberg (1966). It hypothesized that those with a more highly diffused role would seek acting and drama as part of their search for identity. Thus, non-first borns, who had older siblings as models, power-holders, and rewarders, would have more competence in social adaptation to a variety of people. First borns would not be as apt to develop these skills as readily since the power for their management and rewards comes typically from adults. In this study the college subjects were rated in a role playing scene. The first born and second born were asked to play opposite each other. The second born rated higher, and had also played in a greater number of plays in high school. Perhaps the second born had a greater need to seek identity because he had more difficulty establishing separateness than a first born.

From another focus, the first born, who not only had his parents but siblings with whom to communicate, may have developed more role-taking skills. Flavell (1968) suggested that the child with a sibling two or three years younger than himself may have had considerable bearing on increasing role-taking skills. This relationship was hypothesized because it was felt that older children had much to gain by trying to understand the younger child's role attributes for purposes of both informative and persuasive communication.

Summary

In considering the field of role-taking, the first impression received was the limited number of empirical studies which have been reported in the literature. Far greater coverage was given to theoretical discussions and practical applications of the role-taking process. Contributions to combine theory with measures of role-taking have been made by only a few (Feffer, 1959, 1970; Feffer and Gourevitch, 1960; London and Bowers, 1965; Feigenbaum, 1968; Flavell, 1968). In addition to the paucity of literature even more limited were the studies using role-taking which have investigated the correlates of this process.

Flavell (1968) suggested that there was a need for more intensive research with a causal-analytic approach. Such studies would be searching for relationships between role-taking and related skills, and between these skills and other variables. Of particular importance would be the identification of antecedent variables "because it could contribute to our understanding of the conditions and constraints which govern developmental rate" (Flavell, 1968, p. 220).

III. METHODOLOGY

The questions raised in this study were investigated by comparing the performances of 109 fourth, fifth, and sixth grade students who ranged in age from 9 years 6 months to 12 years 5 months. In addition to the WISC Vocabulary used for screening, four tests of perceptual ability and one role-taking test were administered in consistent order to all subjects.

Instruments

Vocabulary Subtest, Wechsler Intelligence Scale for Children

This subtest is one of 12 on the WISC. It is comprised of 40 words arranged in ascending order of difficulty. The majority of the items (6 through 40) are scored at three levels, zero, one and two, depending upon the quality of the response. The manual contains several examples of scorable responses at each level. This subtest was chosen as an estimate of verbal intelligence, for two reasons. One, several of the studies related to role-taking used this as a criterion (Feffer and Gourevitch, 1960; Bowers and London, 1965; Feffer and Suchotliff, 1966). Secondly, the WISC Vocabulary has been reported as ranking as the single best indicator of intelligence (Glasser and Zimmerman, 1967). Vocabulary is the subtest most

highly correlated with overall WISC scores (r = .71 to .87). Additionally, vocabulary stands up the best under emotional disturbances. Reliability of .77 to .94 is reported using the split-half technique.

Memory-For-Designs (MFD)

This is a test designed to measure immediate visual memory. It consists of 15 geometric figures on separate five-by-eight inch cards. Each design is presented to the subject for five seconds. He is then asked to reproduce the design by drawing it on a piece of paper in front of him. All 15 designs are presented in the same manner. This test generally requires 5 to 15 minutes to complete. Norms are available in the manual. The test was standardized on subjects ranging in age from 8 years 5 months to 60 years. Immediate test-retest reliability ranges from .72 to .90. Its primary validity is based upon diagnosis of brain damage, with correct percentage in diagnosing ranging from .42 to .90 (Buros, 1965).

Digit Span

This test is a supplementary test on the verbal scale of the WISC. It purports to measure immediate verbal recall. The test is divided into two parts, digits forward (ranging from three through nine in a series) and digits backward (ranging from two through eight in a

series). The examiner states the digits at an interval of one per second, and asks the subject to repeat them just as they had been stated, or backwards, as the task may be. Total score is based on addition of the total number forward and backward. Standard scores are available according to age norms provided in the WISC manual. This particular subtest correlates poorly with overall general intelligence, but it is also a perceptual measure. Poor performance suggests lowered ability to concentrate and lowered tolerance to frustration in addition to an actual disorder. These personality factors contribute to the reportedly poor reliability (Glasser and Zimmerman, 1967). This test was included because of its wide acceptance by clinicians since it is part of the WISC, and its ease of administration.

Block Design

This WISC subtest is a measure of ability to analyze and synthesize visually perceived material within a time limit. Items consist of nine identical one-inch cubes with their sides varying in color between red, white, blue, and yellow. Only the red and white blocks are used in making the designs, the other colors serve as distractors. For subjects eight and older who are not mentally retarded, the examiner begins with Design C for demonstration as well as scoring, and continues for the next seven designs or until the subject misses two in a

row. The items become progressively difficult. For Design C, the examiner presents the card with the design and puts the blocks together himself in view of the subject. After disassembling his design, the subject attempts to make the design with the blocks as it appears on the card. If he fails, he is given another trial. If he fails again he is given the more simple designs A and B. On the successive items after C, one through seven, the subject is shown the card with the design and is requested to make one like the picture. The card is left for reference. The items are timed, with bonus points being given for more rapid successful times. Items one through four, using a total of four blocks, are limited to 75 seconds; items five through seven, necessitating nine blocks, are allowed 150 seconds. A total score is obtained, and the age norm tables consulted for standard score. This test is described as an excellent measure of nonverbal intelligence as well as a specific measure of perceptual organization and spatial visualization ability (Glasser and Zimmerman, 1967). Correlation with the Intelligence Quotient is high (r = .80) and moderately high with Full Scale Score (r = .72) (Wechsler, 1949).

The Children's Embedded Figures Test (CEFT)

This test was designed and normed on ages 5 through 12. A version was developed in 1963 by Goodenough and Eagle (1963) as an

easier and more appropriate test for children than the Embedded Figures Test which was primarily for adults. This current test represents an attempt to further refine this earlier attempt. Test materials include 25 cards, two small wooden houses and two small wooden tents. The design represented by the cut-out house is embedded in 14 of the test items, and the cut-out tent in 11 items. Relatively elaborate demonstration procedures are described. Only tentative normative data are available on a total of 160 children, ages 5 to 12. Sex was not found to be a significant factor. Socioeconomic status has been reported to be a significant factor. Reliability scores range from .83 to .90. Validity correlations between the CEFT and the Embedded Figures Test are between .83 and .86 for the 11-year-olds, and .70 to .73 for age nine. Positive correlations between WISC Block Design, Object Assembly and Picture Completion have been reported (Witkin et al., 1971).

Make a Picture Story (MAPS)

MAPS is a method designed to elicit projective responses from subjects. The subject is required to place a figure against a background and tell a related story about the scene he selected. This method was selected to be used as stimuli for the Role-Taking Task for two main reasons. First, role-taking studies using the Role-Taking Task have used this method (Feffer, 1970). The same items

employed in Feffer's work were used in this study. Secondly, this method seemed to be one to which elementary school children could respond.

Two primary materials of the MAPS are background scenes and the figures. Supplementary materials include Figure Location Sheet, Figure Identification Card and Theater carrying case. The supplementary materials were not used in this study.

Twenty-two background scenes are achromatically printed on thin cardboard 8-1/2 by 11 inches. The 22 cards were originally selected on the assumption that they would elicit responses from the majority of the problem areas found in clinical practice. Of the 22 cards, seven were used for this study, which were those used by Feffer (1970). The scenes included were street, living room, bedroom, nursery, doctor's examination room, schoolroom, and empty room.

Sixty-seven figures are available in the MAPS kit, including men, women, children, indeterminate sex, fantasy, and animals. They are scaled in proportion to what they represent. For example, a six-foot human figure is 5-1/2 inches tall. The 15 figures included in this study, which were based on Feffer's selection (1970), were the policeman, gunman, doctor, man with gifts, man arguing, boy on crutches, lady-hand to mouth, lady-with apron, elderly lady, negro man reading, negro lady, girl-passively standing, girl-hands clasped, boy-back, and boy-fist raised.

The MAPS method has been used in clinical practice and as a research tool with ages 6 to over 60. The test has been used as a diagnostic instrument, supplement to psychodrama and play therapy, and as a therapeutic device.

The manual offers no reliability, validity, or normative data. Schneidman (1952) commented that the manner in which the former two could be applied to this particular projective test was not understood.

Role-Taking Task (RTT)

This is a verbal role-taking test which was developed by Feffer (1959). It is essentially a scoring system which is applied to stories which have been told by the subjects. The subject is asked to tell a story with a beginning, middle and end. He is first presented with the Living Room Scene and the 15 MAPS figures, and asked to select three figures for his story. After the initial story for each picture is related, the examiner selects two figures in the story who have a role-reciprocal relationship or if none, two who represent societally defined roles and reciprocals (for example, father-son). The figure which is developed last in the initial story is included as one of the two figures. The subject is then requested to "make believe (pretend) that you are the _____ and tell the story again as if you are the _____" (Feffer, 1970, p. 67). These instructions are repeated for the second figure. For the second story the subject selects his own background scene, otherwise the same procedure is followed.

The rationale underlying the scoring is based upon an extension of Piaget's decentering concept as related to interpersonal content (Feffer, 1959; Feffer and Gourevitch, 1960). As applied it is assumed that the picture represents social content and can be described from more than one point of view. The role of the figure which the subject is required to take represents a given viewpoint. The figures he focuses upon when taking the role represent the social objects upon which decentering occurs.

RTT performance is evaluated in terms of the degree to which the subject is able to shift from his initial orientation (as represented by the initial story) in refocusing upon the figures from the various roles, while at the same time maintaining continuity between various versions of the initial story. As Feffer elaborates,

> It is assumed that in successful role-taking the individual is evidencing a type of decentering that is simultaneously coordinated with his previous focus. Conversely, inadequate role-taking can be manifested as either a lack of shift, or a shift which lacks any coordination. These general considerations serve as the basis for the specific categories whereby RTT decentering activity is evaluated (Feffer, 1970, p. 72).

This rationale is applied to the role-taking categories as follows:

Self-entry	Elaboration-entry
No role-taking	Character elaboration (CE)
Simple role-taking (SR)	Perspective elaboration (PR)
Role-Taking	

Self entry refers to the content related to a given figure when taking the role of that figure. The content about a figure when taking the role of another figure is elaboration entry.

Criteria for evaluating protocols is based upon Feffer's (1970) revised scoring system. The revision was undertaken to aid in differentiating performance with mental retardates. The system added two categories in self entry, No Role-Taking and Simple Role-Taking, and an additional coordination score at a lower level of involvement in Perspective Elaboration.

The classifications listed above refer to the type of shift (1) between the actor's initial story and self entry, (2) between the initial story and elaboration of the reciprocal figure (Character Elaboration), or (3) between the elaboration on the reciprocal figure and a self entry. The degree of shift is arranged developmentally from no role-taking through perspective elaboration. That is, the highest incidence of no role-taking occurs with the lower mental age categories.

Definitions of the shift level as taken from Feffer (1970) are as follows:

1. NR (no role-taking): Content in the self-entry which indicates that the subject essentially has no understanding that there are different viewpoints upon which to focus.

2. SR (simple role-taking): A shift in focus in accordance with the requirements of the role-taking situation, but one that occupies a middle category between no understanding that different viewpoints are involved and one in which there is a clear understanding of this. Such nascent role-taking is

usually manifested in some selection and reorganization which are appropriate to the role of the given figure, e. g., the character as the second figure speaks "dialogue" in responding to what the first figure said in his previous role.

3. RT (role-taking): Content in the self-entry which indicates that the subject has a clear understanding that different perspectives are involved in the retelling of the initial story. One indication of this understanding is the subject's emphasis upon the presence of an "inner orientation" of the figure whose role he is taking. Thus, any indication of feelings, attitudes, motives, and intent which distinguishes this role from others would suggest the RT level of shift (Feffer, 1970, p. 5).

1. CE (Character Elaboration): Scored when there is no clear differentiation between an "outer orientation" ascribed to the elaboration-entry and an "inner orientation" ascribed to the self-entry.

2. PE (Perspective Elaboration): In order to score at this level of shift, the subject must indicate an appropriate inner-outer orientation in his self and elaboration entries when taking the role of a given figure. That is to say, the self-entry must be inner-oriented and the elaboration-entry must be outer-oriented.

3. CP (Change of Perspective): Scored when the S is able to produce a PE not only from the viewpoint of a given figure, but from the viewpoint of the reciprocal figure as well. This essentially suggests that the individual is coordinating perspectives from both points of view, and hence is showing a type of reversibility of thought indicative of the cognitive operation as delineated in Piaget's system (Feffer, 1970, p. 6).

In addition to type of shift, stories are also analyzed according to the degree of consistency or coordination between the initial story and self or elaboration entries. Scores of one through three are assigned within the self entry group and Character Elaboration according to degree of consistency. Perspective Elaboration is scored according to the sublety of coordination PE0 through PE5. Scores

are given as follows: One point when there is basic fragmentation and/or global coherence of consistency of, for example, a situation or general affective quality; two points when there is relative degree of consistency in regard to the major theme, but with minor contradictions; three points when there is essential coherence or consistency.

The scoring for PE is as follows (Feffer, 1970):

PE0: (1) an appropriate inner-outer orientation in self and elaboration entries when taking the role of a given figure; (2) self-entry of the reciprocal figure does not have an inner orientation, or (3) there is no correspondence, or at best, a rough correspondence by virtue of belonging to the same gross space-time sphere, between the elaboration entry and the self-entry of the reciprocal figure.

PE1: Step 1 has above, plus (2) self-entry of the reciprocal figure has an inner orientation, and (3) the elaboration entry is consistent with the self-entry of the reciprocal figure in terms of a specific action.

PE2: Steps 1 through 3 as in PE1, plus (4) the self-entry of the reciprocal figure includes a description of an internalized state, and (5) the elaboration entry is not coordinate with the internal state of the reciprocal figure as evidenced in the self-entry.

PE3: Steps 1 through 4, plus (5) the elaboration entry is coordinate with the internal state of the reciprocal figure as evidenced in its self-entry.

PE4: Steps 1 through 4, plus (5) the elaboration entry must include a description of the reciprocal figure's external characteristics which exactly reflect that figure's internalized state as evidenced in its self-entry.

PE5: Steps 1 through 4, plus (5) the elaboration entry must include a conjecture as to the reciprocal figure's actual internalized state as evidenced in its self-entry.

For purpose of analysis, the following four scores are used.

1. Shift

NR = 0	CE = 0	Example,	
SR = 1	PE = 2	SR_3 - CE_2	= 1
RT = 2	PE = 2	(1) (0)	

2. Coordination

For categories self-entry and Character Elaboration basic fragmentation global coherence = 1

Relative degree of consistency, some minor contradiction = 2

Essential coherence or consistency = 3

Perspective Elaboration

PE0 = 0	Example,	
PE1 = 1	RT_1 - PE_1	= 2
PE2 = 2	(1) (1)	
PE3 = 3	RT_3 - PE_2	= 5
PE4 = 4	(3) (2)	
PE5 = 5	CP bonus	= 5
	Total	= 12

Change of Perspective

CP (PE x PE) = 2
CP (all other combinations) = 5

3. An overall index, or Total Score, is obtained by combining shift and coordination scores.

4. The Highest Score represents the highest category of role-taking a subject received on a character of the two stories.

For these indices the correlation with mental age is significant at the $p < .001$ level of confidence. On highest score the median scoring level increases until a leveling off at age 10. Scores on CP have not appeared until a mental and chronological age of nine has been reached.

The stories are recorded from typescripts onto a data sheet. Scoring proceeds from entries on that sheet. Examples of scoring are given in Appendix B.

The optimal number of points which can be received for both stories combined is:

Shift	16
Coordination	42
Total score	58
Highest score	12

Validation studies have involved relationships between the RTT and cognitive tasks used by Piaget, chronological age, mental age. Interjudge reliability ranges from .69 to .84. Test reliability is reported as significant at the .001 level of confidence (Feffer, 1959; Feffer and Gourevitch, 1960; Feffer and Jahelka, 1968; Lowenherz and Feffer, 1969).

Metropolitan Reading Achievement Test (Primary)

The subtests included on the Metropolitan are word knowledge, word analysis, reading, total reading, language, spelling, mathematics computation, mathematics concepts, mathematics problem-solving, total mathematics, science, and social studies. Grade level scores, stanines and percentile ranks are computed. For the purpose of this study, stanine values for the Total Reading Score were used.

Stanine values are an index for describing the relative accomplishments of individual pupils. A difference in stanine score of more than one point is considered significant (Buros, 1972). Split half reliability coefficients .96 and .97 are reported (Durost et al., 1971).

Methods

Experimenters

Three experimenters conducted the vocabulary testing.

Experimenter 1 — Researcher, Ph. D. candidate in Guidance and Counseling, Oregon State University, female.

Experimenter 2 — Completed requirements for the Ed. M. in Guidance and Counseling, Oregon State University, female.

Experimenter 3 — Counselor intern, Oregon State University, assigned to the Lebanon public schools, female.

The philosophy of counseling and the type of training experienced on the Masters level was similar for the three experimenters although they represented three levels, differing in the amount of training received. Their graduate work was under the same major professor. Additionally, Experimenter 1 had a supervisory relationship with Experimenter 3 in practicum in Lebanon for the 1971-72 school year. Experimenter 2 was enrolled in Reading and Conference through Oregon State University in the area of testing and role-taking.

Training sessions were provided for the experimenters. In the first session the experimenters met in order to review and become familiar with the tests to be used and procedures to be followed throughout the study. The first test to be administered, WISC Vocabulary, was covered in detail first. The experimenters administered ten of these tests to children not in the study but who were within the age group to be tested. Other sessions were held to discuss questions which arose, and arrange the scheduling of the WISC Vocabulary administration to the subjects.

When the Vocabulary testing was completed. Experimenters 1 and 2 began training sessions, covering rationale, administration procedure, and practice for the perceptual skill tests and the Role-Taking Task. The experimenters administered between five and ten tests to children not included in the study but who came within the same age range. Following this a session was held to discuss questions related to practice. The experimenters observed one another administering the test to youngsters other than subjects.

In order to assess consistency in manner of presentation of the Vocabulary Testing and the complete battery, two judges separately observed each experimenter administering the test. Ratings were assigned on a check list (Appendix D). Judges were in the same room that testing was accomplished. Judge A was the senior counselor with the Lebanon School District and Judge B was an Ed. D. candidate in

Guidance and Counseling, Oregon State University. Both had training in test administration. The results of the observations suggest that differences among experimenters are not a significant factor affecting the results of testing.

To assess reliability on the RTT, ten protocols were scored by both experimenters independently. A Spearman rank order correlation of .92 was obtained at the .01 level. Experimenter 1 also scored ten protocols which had been evaluated by Feffer. Using rank order, a reliability coefficient of .80 was obtained.

Subjects

The subjects were initially selected from 300 fourth, fifth, and sixth grade students from Greenacres and Queen Ann Elementary Schools in Lebanon, Oregon, public school system. Lebanon has a population of 7,500 with the primary employment related to the lumber mill industry. Three criteria were used for general screening: age, availability of achievement scores taken in the Fall, 1971, and estimate of intelligence. Students falling within the three-year age range, between 9 years 6 months and 12 years 5 months of age, met the initial screening requirement. Age of the child was determined from the date of March 27, 1972. It was determined from the school records which students currently enrolled had achievement test scores from the Fall, 1971 group testing with the Metropolitan Achievement

Test. Those who did not were dropped from the study. Subjects with scaled scores on the WISC Vocabulary between 8 and 12 met criteria for final screening.

Screening with WISC Vocabulary

The WISC Vocabulary was individually administered to the remaining 230 subjects by the three experimenters. A mimeographed sheet with the general directions, words, name of child, and room was provided each experimenter. Subjects were assigned to the experimenters in the following manner. Experimenter 1 tested all students in Queen Ann School and one fifth grade classroom in Greenacres. Experimenters 2 and 3 tested the remainder in Greenacres, with Experimenter 2 testing all subjects in one sixth grade room, and dividing the remaining grades between them.

Each experimenter independently scored the same ten randomly selected WISC Vocabulary tests. In order to obtain reliability of the scoring among the experimenters, Cochran's Test for Homogeneity of Variance was used, obtaining the statistic $s^2 = .40$. The hypothesis stating that the scores did not differ significantly was accepted. Therefore, the scoring of each experimenter for the test she had administered was accepted. Out of the subjects who met the screening criteria, 109 were selected for testing.

Materials

In addition to the standard test equipment used, each experimenter had a clip board with scoring sheets designed for this study, plain white paper 8-1/2 by 11 inches, pencils for scoring, and sharpened number 3 pencils for the subjects. Two tape recorders, two extra tapes for each experimenter, and two stop watches were available. The scoring sheet which was designed for this particular study, provided for ease of recording responses (Appendix D).

Room

A well-lighted room relatively free from outside distractions and allowing privacy was used in both schools. If there were a possibility that interruptions would occur, a sign was placed on the outside of the door, "Testing, come back later."

Communications with Staff

Prior to the beginning of the testing the teachers and principals involved were informed of the study through discussion with the researcher and a brief written statement. The purposes of the testing, and other relevant details such as time involved, were discussed and questions welcomed. It was clarified that once the study began no specific information gleaned from the testing regarding a child would

be available. Although the experimenters were available to discuss questions parents might have raised, the need to do so was apparently not present.

Procedure

Each subject was tested individually by one of the two experimenters in a single session usually of 80-minute duration. Each experimenter made arrangements with the classroom teacher regarding manner of obtaining children and discussion of scheduling considerations. Of the 109 subjects, 79 were tested by Experimenter 1 and 30 by Experimenter 2. Names of students were available according to classroom. To avoid the confusion of two experimenters interrupting a classroom and for ease of establishing a schedule for testing of the subjects, each experimenter tested all the subjects within a particular classroom. The experimenters tested those subjects that she had seen when the WISC Vocabulary was administered for screening purposes.

The subjects were acquainted with the experimenter through the administration of the WISC Vocabulary. Additionally, each experimenter discussed the testing within assigned classrooms prior to taking individual students for testing. The following points were covered: (1) introduction of themselves; (2) interest stated in the responses of fourth, fifth, and sixth graders on a particular word list;

(3) time involved; (4) involvement of many but not all students; (5) many of those seen would be working with the experimenter at a later time; and (6) time for questions was provided. To introduce the subject to this additional portion of testing, the experimenter related the following:

> It's good to see you again. Remember when we talked before, I mentioned that I might want to see you again? This time, there are a number of different things we'll be doing together. Please try to do the very best job you can.

Prior to testing, names and ages of siblings were obtained from the subject.

A consistent order of presentation was maintained: Role-Taking Task, Memory-For-Designs, Children's Embedded Figures Test, Digit Span, and Block Design. After each test the subject was asked if he would like a "stretch break," an opportunity to get up, walk around, get a drink of water, etc. If at any time the subject indicated that he did not want to continue testing, no pressure was put on him to remain. He was, however, encouraged to discuss how he felt about it.

The Role-Taking Task was tape recorded and complete typescripts were made.

IV. FINDINGS

The purpose of this study was to investigate various factors which were hypothesized to relate to role-taking ability. First, the study attempted to assess the assumption that the perceptual skill variables, visual memory, field dependence/independence, auditory memory, and ability to organize and synthesize are related to role-taking ability. The perceptual variables were measured by the Memory-For-Designs Test (MFD), Children's Embedded Figures Test (CEFT), Digit Span (DS), and Block Design (BD), respectively. Role-taking ability was assessed by the Role-Taking Task (RTT). Second, the relationship of sex, age, reading achievement and ordinal position to Role-Taking ability were tested. Reading achievement was measured by the Metropolitan Achievement Test. Third, the interaction among the perceptual variables was analyzed in relation to role-taking. Two Role-Taking Task scores, the Role-Taking Task Total and the Role-Taking Task Highest were used for analysis purposes. The Role-Taking Task Total represents the total Shift, Coordination and Change of Perspective demonstrated by each of the four characters included in the two separate stories as told by each subject. The Role-Taking Task Highest was obtained by taking the highest score received on one of the four characters by each subject. The Highest score was a combination of Shift and Coordination. Since Feffer (1970)

used the Highest category to more closely approximate previous studies as well as to minimize motivation factors, it was included in order that comparisons may be made with his original study. The Role-Taking Task Total was based on the revised scoring system (Feffer, 1970). As the more representative score, it may have been more discriminating as a measurement of cognitive structuring of social content. Correlations obtained between the Role-Taking Task Total and Role-Taking Task Highest were moderate to high, as can be observed in Table 1.

Table 1. Product moment correlations of Role-Taking Task Total Score and Role-Taking Task Highest Score by age.

Variables	Age (years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=39)	Total (N=109)
Role-Taking Task Total and Role-Taking Task Highest	.751**	.923**	.756**	.843**

**Significant at the .01 level.

Analysis Procedure

The nine hypotheses of the study were tested using a linear analysis of the data to determine if a relationship between role-taking ability and the independent variables existed. The Role-Taking Task Total was used to test the hypotheses, although data on the Role-Taking Task Highest will be cited.

The Pearson Product Moment Correlation Coefficient, r, was used to determine how well Role-Taking Task Total or Role-Taking Task Highest were related to each of the perceptual variables, age and reading achievement. T-tests were used to test the difference between the ordinal position and between males and females in relation to Role-Taking Task Total and Role-Taking Task Highest. A stepwise linear regression was performed on both the Role-Taking Task Total and Role-Taking Task Highest to evaluate which of the perceptual variables could best explain variation in Role-Taking ability.

Hypothesis One

H_1: There is no significant relationship between the Role-Taking Task Total Score and Memory-For-Designs.

Product moment correlations for each age group as well as the total group are presented in Table 2. Mean values and standard deviations are displayed in Table 3. Since there were no significant correlations between the Memory-For-Designs and the Role-Taking Task Total Score, the null hypothesis of no relationship is accepted.

Further analysis with Role-Taking Task Highest Score with Memory-For-Designs by age groups and the total sample were also below significance level. An inspection of mean values for Memory-For-Designs indicated a slight decrease in scores across age groups. On this particular test, lower scores represented better performance, thus indicating better performance in the older ages.

Table 2. Product moment correlations of Role-Taking Task Total Score and Role-Taking Task Highest Score with Memory-For-Designs by age.

Variables	Age (years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=39)	Total (N=109)
Role-Taking Task Total Score	-.157	.172	-.075	.005
Role-Taking Task Highest Score	-.114	.129	-.146	-.035

Table 3. Means and standard deviations on Memory-For-Designs by age.

Age	Mean	Standard deviation
9.6-10.5 (N=22)	5.63	5.32
10.6-11.5 (N=48)	5.58	4.70
11.6-12.5 (N=39)	4.56	5.31

Hypothesis Two

H_2: There is no significant relationship between the Role-Taking Task Total Score and the Children's Embedded Figures Test.

Table 4 displays product moment correlations between the Role-Taking Task Total Score and the Children's Embedded Figures Test. Since a significant relationship existed for the total sample of this study, the null hypothesis was rejected. Analysis of the relationship by age group did not reveal significant correlations.

Further analysis indicated that for the Role-Taking Task Highest Score there was a significant relationship with the Children's Embedded Figures Test in the youngest age group, but not for the middle, oldest, or the sample considered as a whole. Mean values on the Children's Embedded Figures Test increased with age.

Hypothesis Three

H_3: There is no significant relationship between the Role-Taking Task Total Score and Digit Span.

As displayed in Table 6, a significant relationship was found at the .05 level of significance between the Role-Taking Task Total Score and Digit Span for the sample as a whole. On this basis the hypothesis of no difference was rejected.

Further analysis did not reveal a significant relationship between the Role-Taking Task Highest Score and Digit Span. The magnitude of

Table 4. Product moment correlations of Role-Taking Task Total Score and Role-Taking Task Highest Score with the Children's Embedded Figures Test by age.

Variables	Age Years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=39)	Total (N=109)
Role-Taking Task Total Score	.392	.224	.090	.226*
Role-Taking Task Highest Score	.416*	.114	-.087	.125

*Significant at the .05 level

Table 5. Means and standard deviations on the Children's Embedded Figures Test by age.

Age	Mean	Standard deviation
9.6-10.5 (N=22)	15.54	4.71
10.6-11.5 (N=48)	16.18	5.51
11.6-12.5 (N=39)	17.05	4.85

Table 6. Product moment correlations of Role-Taking Task Total Score and Role-Taking Task Highest Score with Digit Span by age.

Variables	Age (years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=39)	Total (N=109)
Role-Taking Task Total Score	.374	.170	.092	.206*
Role-Taking Task Highest Score	.290	.127	.047	.160

*Significant at the .05 level

Table 7. Means and standard deviations on Digit Span by age.

Age	Mean	Standard deviation
9.6-10.5 (N=22)	9.13	1.35
10.6-11.5 (N=48)	9.33	2.00
11.6-12.5 (N=39)	10.33	2.00

the correlations declined as age increased for both Role-Taking Task Total and Highest Scores with Digit Span. Inspection of the mean values in Table 7 showed an increase across the three age groups.

Hypothesis Four

H_4: There is no significant relationship between Role-Taking Task Total Score and Block Design.

As given in Table 8, product moment correlations between Role-Taking Task Total Score and Block Design for the total number of subjects indicated that there was not a significant relationship. Therefore, the hypothesis of no significant relationship was accepted.

Additional analysis by age group indicated the tendency for the correlations to be slightly higher for younger age group. The correlations of Role-Taking Task Highest Score with Block Design by age groups including the total sample were not significant. With the Role-Taking Task Highest Score it was the older age group which had the higher correlations. Mean values (Table 9) revealed that the middle age group were poorer performers than the other two age groups.

Hypothesis Five

H_5: There is no significant difference between males and females on the Role-Taking Task Total Score.

Data were analyzed by computing t-test values between males and females in relation to Role-Taking Task Total Score and

Table 8. Product moment correlations of Role-Taking Task Total Score and Role-Taking Task Highest Score with Block Design by age.

Variables	Age (years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=39)	Total (N=109)
Role-Taking Task Total Score	.148	.007	.088	.126
Role-Taking Task Highest Score	.094	.022	.224	.134

Table 9. Means and standard deviations on Block Design by age.

Age	Mean	Standard deviation
9.6-10.5 (N=22)	25.86	11.00
10.6-11.5 (N=48)	21.54	11.02
11.6-12.5 (N=39)	28.82	11.65

Role-Taking Task Highest Score. Results are displayed in Table 10. Since the difference in mean values between sex and the Role-Taking Task Total Score were not significant, the null hypothesis was accepted. Although not significant, the means indicate a slight tendency for girls to perform better on both the Role-Taking Task Total Score and Role-Taking Task Highest Score.

Table 10. Results of Role-Taking Task Total Score and Role-Taking Task Highest Score in relation to sex.

	Males		Females		t-Values
	mean	SD	mean	SD	
Role-Taking Task Total Score	32.78	11.42	34.26	11.31	-.681
Role-Taking Task Highest Score	8.39	2.02	8.71	1.81	-.883

In further analysis displayed in Tables 11 and 12, females showed an increase in means across the three age groups for both Role-Taking Task Total and Highest Scores. However, the mean for the males in the middle age group for the Role-Taking Task Total Score was less than the means of the other two age groups. Males performed better then females in the younger age group in both Role-Taking Scores, but in the other two age groups females were better performers.

Table 11. Means, standard deviations, and correlations on the Role-Taking Task Total Score by sex and age.

Age	Sex	Mean	Standard deviation	t-Value
9.6-10.5	Males (N=12)	33.25	10.42	.091
	Females (N=10)	28.30	10.47	-.123
10.6-11.5	Males (N=27)	31.63	12.71	.424*
	Females (N=21)	33.38	11.59	.570**
11.6-12.5	Males (N=17)	34.29	10.32	-.050
	Females (N=22)	37.82	10.51	-.032

*Significant at the .05 level
**Significant at the .01 level

Table 12. Means, standard deviations, and correlations on the Role-Taking Task Highest Score by sex and age.

Age	Sex	Mean	Standard deviation	r-Value
9.6-10.5	Males (N=12)	8.25	1.91	-.293
	Females (N=10)	8.10	2.18	.040
10.6-11.5	Males (N=27)	8.37	2.17	.512**
	Females (N=21)	8.38	1.83	.520**
11.6-12.5	Males (N=17)	8.53	1.97	.144
	Females (N=22)	9.32	1.49	-.081

**Significant at the .01 level

Hypothesis Six

H_6: There is no significant relationship between age and the Role-Taking Task Total Score.

As displayed in Table 13, the correlation of Role-Taking Task Total Score with Age was significant at the .01 level. On this basis the hypothesis of no difference was rejected. When analyzed by age levels, a significant relationship was found only for the middle age group. The means increased at progressive age levels, lending support to concluding an overall slight but positive relationship (Table 14).

Table 13. Product moment correlations of Role-Taking Task Total and Highest Scores by age.

Variables	Age (years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=109)	Total (N=109)
Role-Taking Task Total Score	.032	.491**	-.064	.253**
Role-Taking Task Highest Score	-.130	.513**	-.012	.232*

*Significant at the .05 level

**Significant at the .01 level

Further analysis revealed a correlation significant at the .05 level between Role-Taking Task Highest Score and Total Age. A significant relationship at the .01 level for the middle age group was

Table 14. Means and standard deviations on Role-Taking Task Total Score by age.

Age	Mean	Standard deviation
9.6-10.5 (N=22)	31.00	10.50
10.6-11.5 (N=48)	32.39	12.14
11.6-12.5 (N=39)	36.28	10.44
Total (N=109)	33.50	11.34

Table 15. Means and standard deviations on Role-Taking Task Highest Score by age.

Age	Mean	Standard deviation
9.6-10.5 (N=22)	8.18	1.99
10.6-11.5 (N=48)	8.37	2.00
11.6-12.5 (N=39)	8.97	1.73
Total (N=109)	8.55	1.92

also found. The means showed slight increase from youngest to oldest age groups.

Hypothesis Seven

H_7: There is no significant relationship between reading achievement and the Role-Taking Task Total Score.

Table 16 displays the results of product moment correlations between the Role-Taking Task Total and Highest Scores with Reading Achievement. Since the correlation between the Role-Taking Task Total Score and Reading Achievement was significant at the $p < .01$ level for the total sample, the hypothesis of no difference was rejected.

In analyzing by age groups, there was a significant relationship for the middle age group, ages 10.6 to 11.5. Further analysis indicated that there were also positive relationships between the Role-Taking Task Highest Score and the total group as well as the middle age group. The mean values as displayed in Table 17 indicated a slightly lower performance for the middle age group.

Hypothesis Eight

H_8: There is no significant difference between children in the first ordinal position and those in other ordinal positions on the Role-Taking Task Total Score.

Table 18 displays the results of t-tests for unequal samples which were computed between first and later born children in relation

Table 16. Product moment correlations of Role-Taking Task Total Score and Role-Taking Task Highest Score with Reading Achievement by age.

Variables	Age (years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=39)	Total (N=109)
Role-Taking Task Total Score and Reading Achievement	-.065	.425**	.083	.255**
Role-Taking Task Highest Score and Reading Achievement	.218	.368**	.103	.278**

**Significant at the .01 level

Table 17. Means and standard deviations on Reading Achievement by age.

Age	Mean	Standard deviation
9.6-10.5 (N=22)	4.86	1.81
10.6-11.5 (N=48)	4.62	1.86
11.6-12.5 (N=39)	5.64	1.84

Table 18. Means, standard deviations, and t-values on Role-Taking Task Total and Highest Scores for first and later borns.

Variables	First borns (N=24)		Later borns (N=85)		t-Value
	mean	SD	mean	SD	
Role-Taking Task Total Score	30.95	10.81	34.22	11.44	-1.24
Role-Taking Task Highest Score	8.16	1.92	8.65	1.91	-1.10

to the Role-Taking Task Total Score and Role-Taking Task Highest Score. The null hypothesis was accepted as there was not a significant difference between children in the first ordinal position and those in other ordinal positions and the Role-Taking Task Total Score.

Analysis using the Role-Taking Task Highest Score also revealed no significant difference. However, mean values indicated a trend for later borns to perform better than first borns on the Role-Taking Task using both scoring systems.

Hypothesis Nine

H_9: There is no difference in the variance contributed by one perceptual variable as compared to another with regard to Role-Taking Ability.

In order to test the hypothesis of the interaction between the four perceptual variables and obtain predictive values, a regression analysis was run for Role-Taking Task Total Score. As can be seen in Table 19,

there was difference in variance contributed, and the null hypothesis was rejected.

The Children's Embedded Figures Test was shown to be the single best indicator of Role-Taking Ability for the younger and middle age groups as well as the sample as a whole. It was chosen second in the oldest age group, explaining 1.76 percent of a total 7.12 percent of the variation. Considering the age groups where Children's Embedded Figures Test was chosen first, more variation was explained at the youngest age group which was 15.36 percent of a total variance of 27.54 percent. Digit Span was second in the amount of variation explained. It was chosen second both in the equation in the youngest age group and total sample, explaining 11.93 and 2.5 percent, respectively. The total amount of variation explained by the four perceptual variables decreased from 27.54 percent in the youngest age group to 11.80 and 1.57 percent, respectively, for the successive age groups.

The regression on Role-Taking Task Highest Score indicated that for the youngest age group, Children's Embedded Figures Test was chosen as the best predictor, explaining 17.27 percent of a total 24.50 percent of the variance. For the youngest age group the order of the variables was the same as for Role-Taking Task Total Score.

As the second best predictor, Digit Span explained 6.70 percent of the variance. Block Design and Memory-For-Designs contributed

Table 19. Multiple regression analysis on Role-Taking Task Total Score with Memory-For-Designs, Children's Embedded Figures Test, Digit Span, and Block Design by age groups.

Variable	% of Variance explained	Variable	% of Variance explained
Age group 9.6-10.5		Age group 10.6-11.5	
CEFT	15.36	CEFT	5.03
DS	11.93	MFD	4.00
BD	.21	DS	2.35
MFD	.04	BD	.42
R^2 = 27.54		R^2 = 11.80	
Age group 11.6-12.5		Age group total	
DS	.849	CEFT	5.10
CEFT	.36	DS	2.50
BD	.27	MFD	.51
MFD	.09	BD	.03
R^2 = 1.57		R^2 = 8.14	

Table 20. Regression analysis on Role-Taking Test Highest Score with Memory-For-Designs, Children's Embedded Figures Test, Digit Span, and Block Design by age groups.

Variable	% of Variance explained	Variable	% of Variance explained
Age group 9.6-10.5		Age group 10.6-11.5	
CEFT	17.27	MFD	1.67
DS	6.70	DS	2.06
BD	5.16	CEFT	1.17
MFD	.007	BD	.26
R^2 = 24.49		R^2 = 5.16	
Age group 11.6-12.5		Age group total	
BD	5.03	DS	2.58
CEFT	1.76	CEFT	.76
MFD	.28	BD	.32
DS	.05	MFT	.07
R^2 = 7.12		R^2 = 3.75	

minimally. For the middle age group, Memory-For-Designs was selected first, explaining 1.67 percent, followed by Digit Span explaining an additional 2.06 percent, Children's Embedded Figures Test, 1.27 percent, and Block Design, .26 percent. Block Design was shown to be the single best predictor in the oldest age group, explaining 5.03 of the total 7.12 percent of the variance. Additional amounts of variation were explained successively by the Children's Embedded Figures Test, Memory-For-Designs and Digit Span, accounting for 1.76, .28, and .05 percent, respectively.

When all of the ages were considered as a group, the best predictor was Digit Span, explaining 2.58 percent. The total amount of variation of Role-Taking Task Highest Score explained by the perceptual variable increased with age.

Supplementary Data

Relationships Between Reading Achievement and the Perceptual Tests.

Table 21 displays the relationship between reading achievement and the perceptual variables Memory-For-Designs, Children's Embedded Figures Test, Digit Span, and Block Design. Positive relationships at the .01 level were found for all of the perceptual measures except Memory-For-Designs. The middle age group was more consistent in showing a positive relationship between Reading Achievement and Children's Embedded Figures Test, Digit Span, and Block Design.

Table 21. Product moment correlations of Reading Achievement and the perceptual tests by age.

Variables	Age (years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=39)	Total (N=109)
Reading Achievement and Memory-For-Designs[a]	.118	-.134	-.150	-.111
Reading Achievement and Children's Embedded Figures Test	.451*	.476**	.222	.393**
Reading Achievement and Digit Span	.085	.296*	.237	.286**
Reading Achievement and Block Design	.046	.461**	.368*	.389**

*Significant at the .05 level

**Significant at the .01 level

[a]Low scores on the Memory-For-Designs means higher performance.

Correlations Among the Perceptual Tests. Intercorrelation between the perceptual tests by age are displayed in Table 22. Significant relationships were found for the total age group between all perceptual tests except Children's Embedded Figures Test and Memory-For-Designs. For the oldest age group significant relationships existed between all except Children's Embedded Figures Test and Memory-For-Designs, and the Children's Embedded Figures Test and Block Design.

The Children's Embedded Figures Test and Block Design were significantly related at the $p < .01$ level for the middle age group, but significance was not found between Children's Embedded Figures Test and Digit Span, or Memory-For-Designs. Block Design and Memory-For-Designs are related at the $p < .01$ level for the middle age group. There were no significant relationships between the perceptual tests at the youngest age group.

Table 22. Intercorrelations between the perceptual tests by age.

Variables	Age (years) 9.6-10.5 (N=22)	10.6-11.5 (N=48)	11.6-12.5 (N=39)	Total (N=109)
Children's Embedded Figures Test and Digit Span	.077	.177	.366*	.249**
Children's Embedded Figures Test and Memory-For-Designs[a]	-.242	-.116	-.134	-.154
Children's Embedded Figures Test and Block Design	.144	.637**	.191	.391**
Block Design and Digit Span	.397	.210	.433**	.359**
Block Design and Memory-For-Designs[a]	.368	-.230	-.468**	-.359**
Memory-For-Designs and Digit Span[a]	-.131	-.118	-.326	-.220*

*Significant at the .05 level

**Significant at the .01 level

[a]Low scores on the Memory-For-Designs means higher performance.

V. DISCUSSION AND IMPLICATIONS

The need for further research into correlates of role-taking ability stimulated this investigation into the variables of perception, sex, age, reading achievement, and ordinal position. The perceptual variables measured were visual memory, field dependence/independence, auditory memory, and organizing and synthesizing ability. The instruments used for these variables were Memory-For-Designs, Children's Embedded Figures Test, Digit Span, and Block Design, respectively. Reading Achievement was measured by the Metropolitan Achievement Test.

One hundred and nine fourth through sixth grade students were administered the Role-Taking Task and the four perceptual tests. Demographic data were obtained through school records. Verbal intelligence was used as a control. Hypotheses were analyzed using Pearson product moment correlations, t-tests, and stepwise regression analysis. Means and standard deviations were used to gain additional descriptive data on the variables.

Discussion

The following section includes the hypotheses and findings of this study. Hypotheses are presented; each is followed by an interpretation relating to previous studies when available.

Hypothesis One

There is no significant relationship between the Role-Taking Task Total Score and Memory-For-Designs.

Visual memory, as measured by Memory-For-Designs, was not found to be significantly related to the Role-Taking Task Total Score for the total sample and the null hypothesis was accepted. Significant relationships were not found when the total group was divided into the three age groups, 9.6-10.5, 10.6-11.5, and 11.6-12.5

An aspect of memory was implied in the Role-Taking Task in that the subject was requested to tell his initial story twice more, but from the perspective of two characters. Since the characters used for the initial story remained in view at all times, a need to recall them from visual memory was not required. Taking this one aspect into consideration, a relationship was not expected. However, the possibility still exists that visual memory may be important at the beginning stages of role-taking development, which this study did not tap. The scoring of the Memory-For-Design reflected the degree of distortion in recalling the geometric designs. An element of distortion was represented in the Role-Taking Task by inconsistencies and perhaps irrelevant details included when the stories were retold from the perspective of the two characters. That is, a subject may receive maximum scoring points because he consistently coordinated the perspectives of both characters in his story. He may have,

however, included superfluous data, even bizarre, which did not detract from his score. This dimension was not adequately measured by the Role-Taking Task scoring system, but could be observed through qualitative appraisal of the protocols.

The Memory-For-Designs and the Children's Embedded Figures Test both involved an element of visual memory, but the two tests were not significantly related. For the youngest age group there was more of a tendency than at the other age groups for those who scored high on the Memory-For-Designs (which means poorer performance) to score high on the Children's Embedded Figures Test. For this group, at least, a negative relationship was implied between the Memory-For-Designs and the Children's Embedded Figures Test. One explanation of this was that the subject had more emotional investment with the Children's Embedded Figures Test since the figures are related to meaningful objects. In contrast, the Memory-For-Designs were geometric forms.

Difference in motivational level, as stimulated by the social content of the test items, may have been a significant factor. Higher motivation and identification are expected with figures that represent social content.

When data were analyzed using Role-Taking Task Highest Score, similar results were found. There were no significant correlations for total age group or for the three separate ages. By way of

explanation, similar rationale would follow as just discussed. Additionally, since the Highest Score represented the subject operating at maximum motivational level, it was even less likely that visual memory would play a significant interactive role among a relatively normal population.

Hypothesis Two

> There is no significant relationship between the Role-Taking Task Total Score and the Children's Embedded Figures Test.

Of the four perceptual tests, the Children's Embedded Figures Test has the most positive relationship with the Role-Taking Task. A significant product moment correlation at the .05 level was found between Role-Taking Task Total Score and the Children's Embedded Figures Test for the group considered as a whole. The null hypothesis was rejected.

Correlations by age groups were not significant, although positive. There was a trend for the magnitude of the correlations to decrease with increasing age. It was assumed that higher scores on the Role-Taking Task were reflective of increased awareness of self and others. Field independence (or higher scores on the Children's Embedded Figures Test) was also theoretically related to increased sense of separate identity.

The Role-Taking Task required that the subject structure a

field. Although the potential for organization was there, the initial presentation was unstructured. Specifically, he was presented with a scene and requested to select three figures and relate a story which required the ability to structure. The next step of having him retell the story from two separate points of view required discriminating these figures from the original field he structured and reorganizing it from a different perspective. The more he was able to coordinate perspective and shift his focus, the greater his role-taking ability. On the Children's Embedded Figures Test, the two characteristic cognitive approaches are articulated and global. Field independence relates to the articulated style. Theoretically, high articulation may be related to a consistently detailed approach on the Role-Taking Task. In one whose approach is global, there may be a tendency to relate in rote repetition or quotes rather than more complete description of feelings. Therefore, the more stringent requirement of reorganizing the field to the extent of differentiating inner-outer orientation of two separate roles (on the Role-Taking Task) might be more characteristically met by those tending to be field independent.

The Role-Taking Task Highest Score and the Children's Embedded Figures Test for the youngest age group were significantly related at the .01 level. Significant correlations at the other age groupings, including total sample, were not found.

A possible explanation for the correlations between Role-Taking

Task Highest and the Children's Embedded Figures Test might have been due to a factor of motivation. Since the Role-Taking Task Highest Score was assumed to be representative of the character which the subject identified with most, his peak performance for which he was perhaps most highly motivated was reflected. More than one character in the story had the potential for receiving the highest score. Theoretically, when motivation and identification are contributing highly to Role-Taking Task performance there would be fewer characters receiving the same high score. Several characters receiving the same score reflected an evenness in performance, perhaps due to plateau effect. In taking a closer look at the Scatter of Highest Scores, 31.36 percent of the youngest age group had more than one character which received the highest score, followed by 39.58 percent for the middle and the oldest group with 51.28 percent. Considering this aspect of motivation, the younger children seemed to be more interested and challenged in the Children's Embedded Figures Test.

One study (Feffer, 1971) relating the Gottschaldt Embedded Figures Test and the Role-Taking Task with adults found a significant positive relationship. The findings of the present study, also using the Role-Taking Highest Score, were only consistent with the 1959 study with the youngest age group.

Hypothesis Three

There is no significant relationship between the Role-Taking Task Total Score and Digit Span.

There was a significant correlation between the Role-Taking Task Total Score and Digit Span for the total sample of this study, and on this basis the null hypotheses was rejected. Positive correlations were observed in decreasing order of magnitude across age groups, but they were not significant. A perceptual skill of immediate auditory memory was hypothetically related to the ability to recall the initial story on the Role-Taking Task. More specifically, the sub-categories of scoring for role-taking ability which were Shift and Coordination, including Perspective Elaboration, were related to the ability to recall descriptions made about characters in cross reference. The coordination of perspectives of both characters' points of view perhaps required more skill related to auditory memory. Although auditory memory was one of the skills contributing to success in role-taking ability, it was not a major one. Perhaps the low correlations were reflective of the minimal significance auditory memory has in overall role-taking ability.

Correlations between Role-Taking Task Highest Score and Digit Span were positive, but not significant, for all three ages and the total sample. The correlations of both Role-Taking Scores with auditory memory are so low that they actually reflect a similar relationship,

rather than one scoring system having a distinct advantage over the other. Stretching a point, the Highest Score did not include the more stringent scoring requirement of coordinating two perspectives, but rather just Shift and Coordination. The interplay of auditory memory with Role-Taking Ability was more significant in the aspect measured by Perspective Elaboration.

Hypothesis Four

> There is no significant relationship between the Role-Taking Task Total Score and Block Design.

Since significant correlations were not found between Role-Taking Task Total Score and Block Design for the total sample, the null hypothesis was accepted. Significant correlations were not found when the sample was considered by age groups. Analysis between Role-Taking Task Highest Score and Block Design also did not reveal significant relationships.

These results were not consistent with Feffer's (1971) conjecture that a significant relationship existed. Evidently, role-taking ability and Block Design do not tap a function common to both which was hypothesized to be analyzing and synthesizing ability. Perhaps one primary factor which differentiated between the Role-Taking Task and Block Design was the nature of the material of the task. The material was social content in orientation for the Role-Taking Task

but not for Block Design. Multiple factors contributed to role-taking ability and restructuring the cognitive field. Analyzing and synthesizing ability which Block Design measured was less effected by nuances which were important to role-taking ability, such as in the more subtle areas of the personality dimension.

Hypothesis Five

> There is no significant difference between males and females on the Role-Taking Task Total Score.

Comparing the mean values with t-tests significant relationships were not found between the total number of males and females on the Role-Taking Task Total or Highest Scores. However, the mean for the total sample using both scoring systems was slightly higher for females than males. Males received higher Role-Taking Task scores than females in the 9.6-10.5 age group, but this position was reversed for the two successive age groups.

The main conclusion of no sex difference supports the results of Bowers and London (1965) and Feffer and Suchotliff (1966). The inference of males performing better than females within the youngest age group in this study found no support in the literature. An hypothesized explanation lies in the more rapid maturing process in females around age 10-1/2. Their interests were rapidly expanding to involve new areas of social development which include becoming more aware

of themselves and others. Cultural expectations also existed for this social maturity to occur. On the other hand, boys were not developing as quickly physically and their primary interests were generally external to demonstrating sensitivity in the social area. The increase in difference in mean scores between males and females, with females achieving higher scores in the middle and oldest age groups, reflected this growth process.

Hypothesis Six

> There is no significant relationship between age and the Role-Taking Task Total Score.

A significant correlation between age and the Role-Taking Task Total ($p < .01$) and Highest ($p < .05$) Scores led to the conclusion that there is a tendency for older children to perform better than younger ones. Mean scores on both scoring systems increased slightly as age increases. Closer analysis by age indicated that a significant relationship existed only for the middle age group.

The findings of a positive relationship using the Total Score is in keeping with results reported by Feffer and Gourevitch (1960), Wolfe (1963), and Buchsbaum (1965) using the Highest Score. Increased role-taking ability with age was also found by Bowers and London (1965) and Thompson (1968) using the Dramatic Acting Test. Using age as a criteria the role-taking process was considered developmental. However, caution is demanded due to the cross-sectional

design of this study rather than longitudinal procedure.

One explanation may come from Ilg and Ames (1955). Their framework suggests that developmental patterns are observed in a continuum of behavior which includes equilibrium, outward and inward overbalance, and extreme outward overbalance. According to the suggested patterning, children between 10.6 and 11.5 would be fluctuating around outward overbalance. At age 10.6 children progress from equilibrium to outward overbalance, and at age 11 they move toward relative equilibrium again. Role-taking involved projection, requiring the facility to be other-directed. This is consistent with the above theoretical position of children at this age being outward in their orientation.

Perhaps the significance of the middle age group was related to most of the subjects within that group experiencing more involvement with the elementary guidance counselor, and accordingly making more growth in awareness of self and others.

Hypothesis Seven

> There is no significant relationship between reading achievement and the Role-Taking Task Total Score.

The significant correlation between the Role-Taking Task Total Score and Reading Achievement for the total sample led to rejecting the null hypothesis. Caution must be exercised, however, since the

middle age group which has the biggest number of subjects was also significantly correlated. Further analysis revealed significant correlations for the middle age group and total sample for the Role-Taking Task Highest Score.

Both perceptual and personality factors influence reading achievement. The perceptual variables measured in this study were anticipated to relate to Role-Taking Ability, but a relationship to reading achievement was also expected. Reading Achievement was significantly correlated with the Children's Embedded Figures Test at the youngest age group (at .05 level of significance) and the middle and highest significantly related at the .05 level, and .01 for the total age groups. Significant correlations at the .01 level were found between Reading Achievement and Block Design in the middle and total age group, and at the .05 level of the oldest age group. Memory-For-Designs and Reading Achievement were not significantly related.

Two related suggestions were applicable in interpreting the significant relationship between reading achievement and the Role-Taking Task. Feelings of adequacy of self were related to role-taking, reading achievement, and field dependence/independence. And, hypothetically, reading could have increased knowledge of people which was related to the ability to understand another's perspective. Further, reading may have had an effect similar to Wright's (1972) finding that role-taking scores increased for boys who participated in

creative drama, if it were assumed that reading served as a type of "vicarious" role enactment. Vicarious role enactment served a purpose similar to actual role enactment, which had, according to role theory, the effect of changing attitudes toward self and others. Vicarious role enactment through reading may have had beneficial results in gaining awareness of self and others as does the process of role playing.

Secondly, Reading Achievement, Role-Taking, field dependence/independence and auditory memory had verbal interaction with the examiner and the social content as common factors. The social content was lower in Digit Span, and as expected the correlations are lower between Digit Span and role-taking than role-taking and reading achievement or the Children's Embedded Figures Test.

One reason reading achievement and role-taking were more highly correlated in the middle age group was possibly related to special programs in which those students participated. Specifically, the elementary school counselor spent considerably more time in the fifth grade level in group guidance activities than in the fourth or sixth grades. One of the approaches used was with a guidance series which had texts available. Pictures were also used. The emphasis was on values and one method was to present a scene, discuss feelings and alternative solutions. Role-playing activities were also part of it. In the other school, the fifth grade girls were exposed to role-playing.

Since the children were cross-graded in actual reading activities, the influence of specific formal reading programs were minimal.

Hypothesis Eight

> There is no significant difference between children in the first ordinal position and those in other ordinal positions on the Role-Taking Task Total Score.

Although the t-test did not confirm that either first or later borns were better role-takers using the Role-Taking Task Total Score, there was a tendency in the direction of the later borns. The inference that later borns were better role-takers supported research by Sutton-Smith and Rosenberg (1966). Non-first borns may have developed more role-taking skills because they had to receive approval and power from both parents and siblings, whereas first borns received this primary recognition from parents.

Further analysis with the Role-Taking Task Highest Score also yielded no significant relationship. The same rationale as given for the Role-Taking Task Total Score applied.

Hypothesis Nine

> There is no difference in the variance contributed by one perceptual variable as compared to another with regard to Role-Taking Ability.

Since the perceptual tests contributed varying amounts in explaining the variance of the Role-Taking Task Total Score for the

total sample, the null hypothesis was rejected. The overall decreasing amounts of variance contributed to the Role-Taking Task Total Score across the three age groups (which are 27.54, 11.80, and 1.57 from youngest to oldest) reflected the decreasing importance of all perceptual skills measured in role-taking ability.

Of the four perceptual variables, Children's Embedded Figures Test was shown to be the best predictor. Further analysis by age group showed that it explained more variance at the youngest age group, 15.36 percent. The two variance percentages were similar for the middle and total, 5.03 and 5.10 respectively, but negligible for the oldest age group.

The Children's Embedded Figures Test required not only the perceptual skill of differentiating figure from ground, but it also reflected psychological dependence or independence from the field. A similar underlying construct in the Role-Taking Task was a cognitive level of maturity which implied flexibility in operating within a self-made structuring of the field. Further, increasing level of cognitive maturity was theoretically demonstrated by increasing decentering ability as measured by the Role-Taking Task. Accordingly, higher scores on the Children's Embedded Figures Test was reflecting greater flexibility seen in cognitive maturity. This common factor of cognitive maturity would relate to the Children's Embedded Figures Test contributing perhaps more highly than the other perceptual

variables. More differentiation could have been expected at the younger age level since the Children's Embedded Figures Test was expected to be more discriminating at the lower age levels. The perceptual skill involved was apparently a more important factor within that younger age group.

The perceptual tests also explained more variation at the youngest age group for Role-Taking Task Highest Score. The Children's Embedded Figures Test was the best predictor of the perceptual tests also in the age group 9.6-10.5, explaining 17.27 percent of 24.49 percent of the total variation. The amount of variation accounted for by the Children's Embedded Figures Test decreased for the middle and oldest age groups to 1.17 and 1.73 percent, respectively. The same rationale of interpretation applied as related above for the Role-Taking Task Total Score.

In the oldest age group, Block Design was the best predictor of Role-Taking Task Highest Score, explaining 5.03 of 7.12 percent of the total variation. The amount accounted for by Block Design at the other age groups including total was negligible. One reason for the Children's Embedded Figures Test and Role-Taking Task to be related at the younger and Block Design at the older may relate to the nature of the tasks in relation to abstract thought. That is, perhaps the older group was experiencing the development into Piaget's stage of formal abstract thought. Thus, children within that group are much

more likely to be able to deal with situations hypothetically rather than relying on experience alone as was true of children prior to this stage. Higher scores on the Role-Taking Task also reflect the ability to project. The projective quality of the Role-Taking Task in developing character description involving two characters implied ability to deal with the material more abstractly. At 9.5 years of age, children were in the beginning stages of actual role-taking ability in coordinating perspectives. Perhaps other types of perceptual skills such as the Children's Embedded Figures Test were more relevant in the 9.6-10.5 age range which did not require the same type of abstract thought, but a more direct experience such as disembedding figure from ground on already structured material.

Digit Span was of more predictive power at the youngest ages for both Role-Taking Task Total and Highest Scores, explaining 11.93 and 6.70 percent, respectively. Concentration and attention which Digit Span reflected in addition to auditory memory may have been of more importance in the younger rather than older because of the increased reliance on abstract thought at the older ages.

Regression analysis showed that Memory-For-Designs generally contributed minimal explanation of the total variation of both the variables, Role-Taking Task Total and Highest Scores. In comparing the predictive value of the Memory-For-Designs across age groups for Role-Taking Task Total, better explanation was provided for the

ages 10.6-11.5 than for the other age groups with 4.00 percent of a total 11.80 percent of the variance explained. Memory-For-Designs was of less predictive power for regression on Role-Taking Task Highest with 1.67 of a total 5.16 percent of the explained for the middle age group. Research did not suggest reasons for the phenomena of Memory-For-Designs explaining more of the variation at the middle age group for Role-Taking Task Total Score. The percentage of the variation dealt with was low enough to be of minimal significance in differentiating between the perceptual tests.

Implications for Further Research

This study served as an ex post facto investigation into role-taking correlates within a narrow age range. The results indicated several areas for further study.

1. As a group, perceptual skills as measured in this study explained only a minimal amount of total variation in role-taking ability. Perhaps the age considered was too old and the range too limited to obtain discriminating differences on the perceptual tests. This has support in the study since two of the perceptual tests, the Children's Embedded Figures Test and Digit Span were the better predictors for Role-Taking Task Total Score in the youngest age group. A study over a larger age range, particularly with younger age groups, would provide useful

descriptive data as to this relationship. A possible explanation of general poor predictive ability related to the nature of the perceptual tests used. In particular, the Memory-For-Designs and Block Designs required fine motor skills. Role-taking was assumed to involve role-enactment, gross motor skills. An investigation is suggested into the dimension of gross motor skill development as related to role-taking ability.

2. The Children's Embedded Figures Test, which tapped both personality and perceptual factors, needs to be further investigated in relationship to the Role-Taking Task to determine common operating factors. Perhaps the relationship between them relied not so much on a specific perceptual skill but an aspect of personality integration. A study investigating groups 9 to 11 years is particularly indicated. Control for variables of grade, intelligence, sex, and reading achievement is recommended. A comparison of the Children's Embedded Figures Test and Role-Taking Task with a measurement of personality which would tap self awareness and integration would enlarge the limited understanding of their relationship.

3. In this study, age and grade were not synonomous. In all three age groups, the three grades could have been represented. Contamination of special programs for certain grades or amount of experience in school were not controlled by this kind of age

grouping alone. Another study which would control for this factor would lend more weight to age being interpreted as a contributing factor to role-taking ability.

4. A study further investigating the relationship between reading achievement and role-taking ability would shed more light on common factors involved. Some factors which should be considered are reading according to grade level in addition to the stanine values used in this study. Other reading tests could be used to determine if similar results to this study were obtained. It would be additionally interesting to explore the usual type of material selected by the student for reading as related to role-taking scores.

A comparison study of specific treatment groups using a pre-test, post-test on the Role-Taking Task is suggested. Treatment groups to be considered could be those who participate in role enactment through role-playing and those who engage in selected general areas of reading. This would assist in delineating the role of reading as vicarious role enactment.

5. The middle age group used in this study, 10.6-11.5 years, mostly fifth graders, needs further investigation since the Role-Taking Task and age are most highly correlated for that age range, as are the Role-Taking Task and Reading Achievement. The suspected importance of special programs in group

counseling which utilize methods relating to reading points out the need to expand the investigation. Special programs in reading available to children at previous grade levels are relevant to explaining reasons for the higher correlation for this particular age.

6. The need to investigate sex differences in role-taking ability from pre-school through adolescence is indicated. A trend was observed in this study for a shift from boys to girls in role-taking ability around 10-1/2 years of age. Studies determining if significant sex differences are present prior to that time as well as the trend after this age would assist in defining the nature of the inference of a shift in role-taking ability.

7. This study was of a cross-sectional rather than longitudinal nature. Inferences which can be drawn about the developmental process implied are therefore limited. The role-taking studies reviewed are all cross-sectional. Longitudinal analysis of role-taking ability would be far more definitive and provide useful reliability information. In particular, a longitudinal study relating perceptual skills would be of interest to see if the trend for them to decrease in predictive power from 9.6-12.5 years is borne out. If the longitudinal study began in pre-school years, a much more realistic picture could be achieved of the role of these perceptual skills in the development of role-taking ability.

8. Studies relating the Role-Taking Task to a wider array of variables are needed to further define what the test measures. Specifically, these variables could include further studies on the relation of role-taking to behavior, emotional maturity level, social development, self-awareness, and other role-taking measures.

9. The Role-Taking Task Total Score and the Role-Taking Task Highest Score were found to be highly related. However, in some cases the two scores discriminated differently with the same variables. The value of these scores needs clarification through thorough investigation. Shift and Coordination combine to define the Role-Taking Task Highest Score. These two plus Change of Perspective are included for Role-Taking Task Total Score. There may be some differences between Shift, Coordination, and Change of Perspective and the magnitude of correlations at various age levels.

10. Normative studies on the Role-Taking Task are needed in order that results can be more clearly interpreted. Two of the main reasons for the difficulty in gathering data in current studies and forming beginning normative tables are due to the discrepancy in the manner in which the studies were conducted and the different scoring procedures.

This study followed Feffer's (1971) directions for procedure

as well as scoring in a beginning attempt. To increase the usefulness of this test, it is suggested that research be conducted using uniform methodology over a span of ages ranging from pre-school through adolescence.

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APPENDICES

APPENDIX A

ROLE THEORY

Since the early 1930's, role-taking as a skill in the developmental process has been the subject of discussion and investigation. Mead (1934) influenced much of the trend of thought at that time. His influence extends to current role theorists as well, such as the prevalent concept of the importance of taking the role of the other in the process of personality development. Additionally, the school of symbolic interaction grew from his influence. One of the most pronounced ways his continuing influence is observed is through the development of a technical language which relates role concepts to role terms. Role theory is a workable model for describing a broad range of behaviors which has as its focus interaction and communication. Although the use of the term theory in its purest scientific sense cannot apply, the role conceptual framework is a useful approach. This framework investigates areas of real-life behaviors. It not only focuses upon individuals but complex group structure. Behavior is studied through investigation of others' influence upon the individuals and by the individual's perception of what his own behavior should be. Determining factors are also studied. The language of role permits identification and communication of the objects of study through description of complex behavior using role terms and concepts.

Included in the growing field of literature in the role framework are studies in role playing, learning, socialization, family structure, and occupational groups. The inclusion of these areas of study in the framework makes it satisfactory to use for the purposes of this paper for a conceptual framework, as its scope is a unique approach to the study of human behavior. However, most of the knowledge that comprises role theory has yet to be reviewed, collected, organized, and evaluated. Additionally, propositions have not been reviewed and integrated. Therefore, it is not a single monolithic theory (Biddle and Thomas, 1966).

A few factors in determining the development and modification of an individual's role are presented according to role theory concepts. Further, the distinction is made between adopting the other's view as one's own, and being aware that one is evaluated by others.

One responds not only to another's behavior but also to anticipation of another's behavior as viewed from the context of an imputed role (Turner, 1966). This anticipation is a covert process of attributing feelings and capacities to another which is termed role-taking. This process develops over time and is guided by the amount and kind of experience one has.

Role-taking is basic to the development of a social self which is a system of internalized roles (role expectations) that have been brought into awareness through the process of role-taking (Mangus,

1957). The social self is seen as a function of a significant other, for it is through interaction within that relationship that the more meaningful roles are being established. Development of role-taking skills related to role enactment is expanded upon by Brim (Brim and Wheeler, 1967). He discusses three major kinds of systems, "they-me," "I-them," and "I-me." In the they-me system the self is the object of another's actions, expectations, or attitudes. An example is, "they (parents) expect me (child) to skate." This develops into an I-them awareness with the object being the other, such as, "I expect them to want me to skate." I-me systems are generated from numerous they-me experiences to such an extent that the identity of the "they" has long been lost through many trials. An example of the I-me projection is, "I expect myself to skate." The expectations, behaviors, adjectives, etc., with which one identifies most strongly constitute his sense of identity.

The role-taking process may or may not involve adopting the other's view as one's own, but it in part determines one's own behavior. For example, part of the extent role-taking can affect behavior is related to the degree of separate identity which is maintained. Adopting the role of another is descriptive of a low level of separate identity. In the beginning stage of role-taking in a child, around the age of two years, a distinction is not made between imaginatively structuring the role of another and maintaining one's own identity. For

this young child, social interaction is usually limited in both the number of significant people and the variety of demands made of him. Thus, he is not put in a conflict situation but adopts the viewpoint of another as his own. This is the stage that a very close, perhaps almost simbiotic relationship can be observed, for example, between mother and child.

Expansion of self evolves with practice in performing role behaviors in relation to an increasing number of significant others. Conflict arises as others begin to play an important role. When it is no longer possible to continue reacting to an imputed role while adopting a conflicting role, a choice must be made. The social self then begins to become differentiated at increasing levels of complexity. As he practices role behaviors, changes are produced in identity and in significant aspects of belief and conduct. The close identity to one significant other decreases as the child learns that engaging in role-taking can serve his own needs, that he can participate in control of a situation.

Adopting the standpoint of another is only one step in the role-taking process. Another is the desire to be acceptable in another's eyes. In this case, one is aware that his behavior is evaluated by others. He adopts the attitude toward self rather than towards external resources. Since he is beginning to establish his feelings of worth, self-image is beginning to be formed. The individual's sense

of well being in large part is determined by his conformity to personal standards learned from significant others. He becomes aware of how he compares to others and how he appears to them. An individual's self-esteem and self-respect is primarily influenced by his own view of how well he has lived up to the expectations of the significant self-other relationship. The discrepancies may be between expectations and his actual level of performance, or his perception of anticipated discrepancies (Brim and Wheeler, 1967).

Changes in self-perceptions and attitudes are regularly associated with changes in perceptions of and attitudes toward others. Perception of friends is framed within role systems with which one has familiarity. The most persistently self-maintaining systems within the organized human personality (including in particular the self-system) are those which are related to role relationships. Role behaviors which have already been acquired are steadfastly maintained, together with whatever satisfactions they bring by way of response from other people. Role enactment has the effect of restricting range of relevant cues to those inputs that are informative in regard to the maintenance and support of the role (Sarbin, 1968). The more intensely one feels about a role expectation, the less deviation from it is permitted (Hawkins, 1967). This persistence accounts for much of the consistency in personality which in turn is traced to the embeddedness of self-perceptions in a given kind of role system (Newcomb, 1950).

There is continual modification of an individual's role, involving both rejection of identifying characteristics and the emerging of a new role. Modification takes place in interaction with another as well as in communication with self. There is only a small portion of total role being enacted at one time, and therefore being observed by the other. There is differential sensitivity to various aspects of the other-role. This suggests that the conception of the role by both the self and the other is vague, with much left unknown. Because so many variations of response are possible it is not difficult to imagine that unique role enactments could occur. For example, another's role behavior may be viewed in a new light because of different feelings of self at the time of enactment, thus his response to that behavior is different than previously. This begins a chain of events, in that the other sees his own behavior as being received differently and may anticipate the feelings of the other because of his unique enactment. Each experience like this leaves a residual effect on the expectations of self and other (Turner, 1962).

Since self is developed through social interaction, it thereby contains the social system within itself. Thus, one can provide his own social interaction by thought processes of taking the role of the other (Davis, 1949). In addition to the social self as a system of internalized roles, the total personality includes important elements of uniqueness, autonomy, and creativity. The I or subjective self

transcends social roles, organizes them and holds them in perspective. The total personality includes the active self that perceives, knows, takes the role of others, integrates and develops degrees of autonomy and independence. Once it is well established, the social self becomes the chief executive for the organization and direction of the conduct of that person.

In summary, role theory provides a framework to discuss personality development in terms of social interaction. The self emerges and is modified through interaction with actual and anticipated role behaviors. Feelings of self-worth develop as one evaluates himself in relation to others as well as his own expectations.

APPENDIX B

ROLE-TAKING TASK SCORING

A scoring sheet is used to record material from the transcript. In the column to the left, data given in the original story which describes each of the two actors is recorded. The two actors in reciprocity are listed separately in the next two columns, in the same order as listed in column one. Material which the actor relates about himself is recorded in row one, column two. What each actor relates about the other is recorded in row two, column two. The same procedure is followed for the second actor. The material about an actor is analyzed in relation to the initial story.

Following are examples of the scoring categories as described on page 34.

Shift

1. No Role-Taking

	Initial Story	By Doctor
Doctor	Ding Dong... Who is it?... me, the doctor come to see Jim. How are you feeling?	Clip, Clop, Clip, Clop, here he comes.

(The subject does not focus upon different points of view in the above example.)

2. Simple-Role Taking

	Initial Story	By Policeman
Policeman	There is a policeman on the street. He is going to watch the lady to across the street. He didn't see a car and it came and hit the lady.	Hello, may I watch you cross the street?

(Shift is somewhat toward role-taking, in that the character is speaking in dialogue in response to what happened in the initial story.)

3. Role-Taking

	Initial Story	By Doctor
Doctor	The doctor left the house and went to his office to go to work. When he got there he saw a boy who had one leg cut off. He took him to the hospital.	I hurried to my office to go to work. When I got there my patient was a boy with his leg cut off.

(This story shows an inner orientation on the part of the actor. The personal pronoun I is used and feelings and motives are shown.)

4. Character Elaboration

	Initial Story	By Doctor
Doctor	The policeman called a doctor because there had been an accident. The doctor thought someone was hurt.	The doctor ran down the street because there was an accident. He thought the person broke his leg.
Man	The man was walking across the street and a car hit him. He broke his leg.	The man wasn't feeling very good. They put him in an ambulance and took him to the hospital.

(Character Elaboration is scored on the above story because there is both a self and elaboration entry but there is not a clear inner-outer orientation. The content is evaluated in terms of the degree of consistency between elaboration and initial entry.)

5. Perspective Elaboration 0

	By Father	By Mother
Father	I came home from work with two big packages. (A)	(C)
Mother	She asked about what was in the packages. (B)	I fixed my husband's supper. (D)

(There is an inner-outer orientation between A and B. However, there is no correspondence between B and D.)

6. Perspective Elaboration 1

	By Father	By Mother
Father	I came home from work with two big packages. (A)	(C)
Mother	She asked about what was in the packages. (B)	I asked what he had brought home. (D)

(In addition to the inner-outer orientation between A and B, as with PEO, the self entry of the reciprocal figure (D) has an inner orientation and the elaboration entry (B) is consistent with self entry (D) in terms of a specific action.)

7. Perspective Elaboration 2

	By Father	By Mother
Father	I came home from work with two big packages. (A)	(C)

Mother	She asked about what was in the packages. (B)	I asked what he had brought home. I was very happy to see him and gave him a big kiss. (D)

(Same as PE1, plus self entry A and self entry of reciprocal figure D describe internalized states, but the elaboration entry B is not coordinate with the internal state of D.)

8. Perspective Elaboration 3

	By Father	By Mother
Father	I came home from work with two big packages. (A)	(C)
Mother	She greeted me and asked about what was in the packages. (B)	I asked what he had brought home. I was very happy to see my husband and gave him a big kiss. (D)

(Same as PE2, except that elaboration entry B is coordinate with the internal state of entry D.)

9. Perspective Elaboration 4

	By Father	By Mother
Father	I came home from work with two big packages. (A)	(C)
Mother	She greeted me with a big smile and kiss, and asked what was in the packages. (B)	I was very happy to see my husband and gave him a kiss. I asked what was in the packages. (D)

(The same as PE3, except that B includes a description of the external characteristics reflecting the internalized state in D.)

10. Perspective Elaboration 5

	By Father	By Mother
Father	I came home from work with two big packages. (A)	(C)
Mother	She greeted me with a big smile and kiss. She seemed very happy to see me. She asked what was in the packages. (B)	I was very happy to see my husband and gave him a kiss. I fixed dinner for him. (D)

(The same as PE4, except that B includes a conjecture as to the reciprocal figure's actual internalized state as given in self entry D.)

Coordination

The numbers 1, 2, and 3 are used with No Role-Taking, Simple Role-Taking, Role-Taking, and Character Elaboration to show the degree of consistency between what is said by the character and what is said in the original story. In the following example, Role-Taking (RT) will be used.

Initial Story

The street is crowded with people coming home from work. The lady gets on the bus to go home. She cannot find her purse. A kind man loans her some money.

RT1 (Lady)

I got on the bus in the morning. I forgot and left my purse at home and went back to get it. (global coherence)

RT2 (Lady)

I get on the bus after work to go home and I can't find my purse. (relative consistency with some contradiction)

RT3 (Lady)

I hurried through the crowd to catch the bus. I get on the bus and can't find my purse. A nice man loans me some bus money so that I could ride home. (essential coherence and continuity)

APPENDIX C

RECORDING SHEET

Name ______________________
ID Number ______________________
Room ______________________

Siblings and Ages: ______________________
____
____

I. Role-Taking Task

A. Scene Selected

____

Figures Selected

____
____
____

B. Scene Selected

____

Figures Selected

____
____
____

II. Memory-For-Designs

Total ______

1. ____	9. ____
2. ____	10. ____
3. ____	11. ____
4. ____	12. ____
5. ____	13. ____
6. ____	14. ____
7. ____	15. ____
8. ____	

III. Children's Embedded Figures Test

Total ______

Tent	House
P1 ____	P3 ____
P2 ____	H1 ____
T1 ____	H2 ____
T2 ____	H3 ____
T3 ____	H4 ____
T4 ____	H5 ____
T5 ____	H6 ____
T6 ____	H7 ____
T7 ____	H8 ____
T8 ____	H9 ____
T9 ____	H10 ____
T10 ____	H11 ____
T11 ____	H12 ____
	H13 ____
	H14 ____

IV. Digit Span Total ______

Forward

Trial I	Trial II
3-8-6	6-1-2
3-4-1-7	6-1-5-8
8-4-2-3-9	5-2-1-8-6
3-8-9-1-7-4	7-9-6-4-8-3
5-1-7-4-2-3-8	9-8-5-2-1-6-3
1-6-4-5-9-7-6-3	2-9-7-6-3-1-5-4
5-3-8-7-1-2-4-6-9	4-2-6-9-1-7-8-3-5

Sub-Total ______

Backward

Trial I	Trial II
2-5	6-3
5-7-4	2-5-9
7-2-9-6	8-4-9-3
4-1-3-5-7	9-7-8-5-2
1-6-5-2-9-8	3-6-7-1-9-4
8-5-9-2-3-4-2	4-5-7-9-2-8-1
6-9-1-6-3-2-5-8	3-1-7-9-5-4-8-2

Sub-Total ______

V. Block Design Total ______

	Time	+ -	Score			
A.			2 / 01			
B.			2 / 01			
C.			2 / 01			
1			21-75 / 4	16-20 / 5	11-15 / 6	1-10 / 7
2			21-75 / 4	16-20 / 5	11-15 / 6	1-10 / 7
3			26-75 / 4	21-25 / 5	16-20 / 6	1-15 / 7
4			21-75 / 4	16-20 / 5	11-15 / 6	1-10 / 7
5			66-150 / 4	46-65 / 5	36-45 / 6	1-35 / 7
6			81-150 / 4	66-80 / 5	56-65 / 6	1-55 / 7
7			91-150 / 4	66-90 / 5	56-65 / 6	1-55 / 7

APPENDIX D

JUDGE'S RATING SHEET

Name _____ WISC Vocabulary _____ Other _____

Date _____

Observed by _____

Please circle the appropriate number for each category.

Manner	1 Professional, cool	2 Professional, friendly	3 Friendly
Rapport	1 Adequate for testing	2 Needs improving	3 Strained
Verbalizations	1 Minimal, related to testing	2 Some unrelated discussion	3 Frequent unrelated discussion
Familiarization with materials	1 Seems well acquainted, procedure flows	2 Some awkwardness	3 Fumbles frequently
Directions	1 Follows standard directions	2 Offers some elaboration upon directions	3 Frequently elaborates upon directions

Additional pertinent observations, comments: