AN IDENTIFICATION OF PSYCHOLOGICAL OPENNESS IN FIRST GRADE CHILDREN

by

Marian Faye Qashu

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STATEMENT BY AUTHOR

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This thesis has been approved on the date shown below:

[Signature]  June 19, 1963
MARIE M. HUGHES
Professor of Education
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ABSTRACT

First grade children were studied in an effort to identify psychological openness; two tests were used. In the modified H-T-P test the child is asked to draw a house, a person and a tree. In the Play Toy Test, adapted from the Miniature Life Toys Test, a child is given toys and objects to arrange and play with.

The H-T-P adaptation showed significant positive correlations with the subtests of the Stanford Achievement Test (Primary) and the CTMM (1957-S form). The results suggest its value for assessing a group's readiness for school activities.

The Play Toy Test showed no correlation with these standard achievement and intelligence tests except for three instances where the correlations were negative and significant between the manipulation and achievement subtests. The negative correlations were expected since these are areas of school achievement which requires some maturity.

The modified H-T-P test appears to have great potential value for the classroom teacher as a preliminary study of individual differences in psychological openness in young children because of its ease in administration and lack of ambiguity in scoring. The teacher can, however, use the Play Toy Test to observe and gain understanding about the individual child in the classroom.
THE PROBLEM AND DEFINITION OF TERMS USED

In the thirteenth century Thomas Aquinas pointed out that the purpose of teaching was to draw out the potential powers of the individual in order that he might reach his true limits. To draw out the potential, the teacher must know something about it. Achievement of the potential will be limited or enhanced by the individual's perception or openness to surroundings.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study to evaluate in what way a measure of psychological openness, or sensitivity to and interaction with the surrounding physical and emotional environment, might be discovered in young children by tests, and to determine which of the tests used would have the greatest potential value for the classroom teacher in discovering differences in psychological openness in young children.

Importance of the study. The importance for the teacher of evaluating a child's psychological openness lies in knowing what the child can accept or will reject because of the restrictions in himself as
well as in his environment. The environmental conditions can produce an attitude or predisposition for acceptance or rejection. It may be assumed that his acceptance or rejection will aid or retard learning situations in the school.

Production of conditions of openness in children is a part of the development of creativity. By helping them to use their senses such as sight, hearing, and olfactory sense and to trust the information received, the teacher can help promote creativity and openness. Premature closure can prevent the receiving of the additional information necessary for problem solution.

By exposing the children to a wide range of stimuli and helping them explore different media, the teacher can maintain and possibly expand the children's concept of the world. With successful encounters of new objects, there may be also an improved use of language in labeling and explanations. The occurrence of new and successful encounters is limited if there is no predisposition in an individual toward openness. A cognitive or perceptual experience which is incomplete due to restrictions within the individual may be assumed to not add greatly to

his store of knowledge. A fruitful classroom test for the discovery of restrictions in psychological openness would be of value in this case.

**Assumptions.** That the two tests selected and adapted can be compared is the primary assumption made in this study, but two other assumptions must also be made. One, it is assumed that the children tested have not been exposed to the particular tests before. Two, it is assumed that the children tested are representative of their age group in the population of the district selected.

**Expected results.** Two results were expected from administration of the tests: the outcome of the tests should be comparable for each individual and the results should reflect evidence of the presence of psychological openness or its absence.

**Method of treatment.** Adaptations of John Buck's House-Tree-Person test and Lois Barclay Murphy's Miniature Life Toys test were used to evaluate the degree of openness. Both tests are of a projective nature.

The House-Tree-Person test was originally a clinical test designed for use with adults. Buck's original quantitative scoring system for this test has not been applied to children with success even though in its original form some seventeen studies have considered the
developmental trends in children's House-Tree-Person drawings.  

However, E. Paul Torrance, using Buck's method as a guide, modified the administration and scoring procedures for use with children. He follows Buck's suggestion of considering the openness of the house as a means of judging the child's "psychological accessibility".3

The H-T-P test as modified by Torrance is a group drawing test where everyone is asked to draw three objects on a sheet of paper: a house, a tree, and a person. A pencil is provided and colors are available for use if desired. The significance lies in what the individual decides to include, how he relates the objects in his drawing, and how he elaborates on the objects included.

The Murphy test is an individual projective test which has toys and other objects for the children to play with. While they play, they are encouraged to talk about what they are doing. There is no specific time limit on the Murphy test which includes more household items4 than objects representing the world outside the house.


4. See Appendix A.
From the Murphy test an adaptation was made by the writer and a scoring system developed. The items included the toys listed in Appendix B. A time limit of forty minutes was set, and the children were told at the beginning, "Here are lots of toys for you to play with. You may do anything you like with them."  

Both tests were administered to a sample of thirty children selected from three different first grade classrooms which were grouped by achievement: one high, one average, and one low group. Ten children were taken from each room by means of random numbers.

The quantitative scores of the two adapted tests were compared with the subjects' scores on available standardized intelligence and achievement tests. During the school year, the subjects took the Stanford Achievement Test (Primary Battery) and the California Test of Mental Maturity (1957-S Primary). The results were available for use in this study.

II. DEFINITIONS OF TERMS

Perception. Broadly speaking perception may be considered awareness, but in a specific limited sense it is awareness of external

elements due to sensory stimulation. However, when a person talks about selective perception, he is considering a response where background experience and individual set determine what is observed.  

**Projective method.** The response sought from the individual is desired to be as close to his real feelings as possible, and the method used avoids a highly structured situation in order to obtain this response.

III. ORGANIZATION OF THESIS

The material in chapter two will center around ideas and definitions of psychological openness and experiments with individuals identified as open or closed. Chapters three, four, and five will describe and justify the scoring of the tests administered. Chapter six will include the summary, conclusions, and recommendations.


REVIEW OF THE LITERATURE

An analysis of the meaning and the significance of openness as a method of operation, as a definition, and as a philosophical framework is a necessary background for the problem under study. Selections from the available literature serve as examples only.

I. OPENNESS AS A CONCEPT

Rokeach and Restle's definition. The openness or closedness of belief-disbelief systems is the framework within which Rokeach and Restle define openness. Their basic definition is a suggestion that one characteristic,

the extent to which the person can receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside

will define the openness or closedness of a belief-disbelief system.

A belief-disbelief system, as defined by Rokeach, includes man's total method of maintaining a relationship with the world. It

includes every belief he has whether it is a political, religious, economic, or social belief. These beliefs are not necessarily separate categories; they may be combined in many ways. However, every belief is considered to have a number of contrary disbeliefs. For one belief there might be a dozen valid disbeliefs.²

Logic is not a necessary component of a series of belief-disbelief systems for an individual since his particular system might include some very chaotic thinking. Contradictory beliefs may exist within one belief system: the mechanism of compartmentalization. The individual may highlight the differences rather than the similarities between a belief and disbelief. What other people find to be relevant information, an individual may consider irrelevant.³ All of these factors may add to a lack of logical thinking, but the system is still highly organized along what Rokeach called a psychological rather than a logical syntax of a scientific system.⁴

Rokeach and Restle did break down their basic and all-inclusive definition into a series of precise defining characteristics for


3. Ibid., pp. 36-37.

4. Ibid., pp. 50-51.
an open and closed belief-disbelief system which are stated below:

A Belief-Disbelief System is\(^5\)

<table>
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<tr>
<th>Open</th>
<th>Closed</th>
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<tr>
<td>A. to the extent that, with respect to its organization along the belief-disbelief continuum,</td>
<td></td>
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<tr>
<td>1. the magnitude of rejection of disbelief subsystems is relatively low at each point along the continuum;</td>
<td>1. the magnitude of rejection of disbelief subsystems is relatively high at each point along the disbelief continuum;</td>
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<tr>
<td>2. there is communication of parts within and between belief and disbelief systems;</td>
<td>2. there is isolation of parts within and between belief and disbelief systems;</td>
</tr>
<tr>
<td>3. there is relatively little discrepancy in the degree of differentiation between belief and disbelief systems;</td>
<td>3. there is relatively great discrepancy in the degree of differentiation between belief and disbelief systems;</td>
</tr>
<tr>
<td>4. there is relatively high differentiation within the disbelief system.</td>
<td>4. there is relatively little differentiation within the disbelief system.</td>
</tr>
<tr>
<td>B. to the extent that, with respect to the organization along the central-peripheral dimension,</td>
<td></td>
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<tr>
<td>1. the specific content of primitive beliefs (central region) is to the effect that the world one lives in, or the situation one is in at a particular moment, is a friendly one;</td>
<td>1. the specific content of primitive beliefs (central region) is to the effect that the world one lives in, or the situation one is in at a particular moment, is a threatening one;</td>
</tr>
<tr>
<td>2. the formal content of beliefs about authority and about people who hold to systems of authority (intermediate region)</td>
<td>2. the formal content of beliefs about authority and about people who hold to systems of authority (intermediate region)</td>
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\(^5\) Ibid., pp. 55-56.
is to the effect that authority is not absolute and that people are not to be evaluated (if they are to be evaluated at all) according to their agreement or disagreement with such authority;

3. the structure of beliefs and disbeliefs perceived to emanate from authority (peripheral region) is such that its substructures are in relative communication with each other, and finally;

C. to the extent that, with respect to the time-perspective dimension, there is a

1. relatively broad time perspective.

The general and specific definitions of an open and closed belief disbelief system are summarized by showing how different psychological theories contribute to its understanding. If an individual acts as each of these theories hypothesize, Gestalt theory contributes to understanding an open system while psychoanalysis and behaviorism contribute to understanding the closed belief system.⁶

According to the somewhat eclectic position of Rokeach and Restle there is validity to all these positions since man is neither completely open or closed. These concepts are convenient ways of talking about

⁶. Ibid., pp. 66-67.
a belief-disbelief system.

Schachtel's concept of openness. An understanding of two basic terms, autocentric and allocentric, are necessary for any discussion of Schachtel's concept of openness. The first term describes perceptual relatedness as subject-centered, and the second term is designated as object-centered perceptual relatedness.

In the autocentric mode there is little or no objectification; the emphasis is on how and what the person feels; there is a close relation, amounting to a fusion, between sensory quality and pleasure or unpleasure feelings, and the perceiver reacts primarily to something impinging on him (although sometimes he may have brought about the impingement, for example by taking food into his mouth). In the allocentric mode there is objectification; the emphasis is on what the object is like; there is either no relation or a less pronounced or less direct relation between perceived sensory qualities and pleasure-unpleasure feelings--that is, such feelings are usually absent or less pronounced or of a different quality; the perceiver usually approaches or turns to the object actively and in doing so either opens himself toward it receptively or, figuratively or literally, takes hold of it, tries to 'grasp' it. 7

As the individual develops from birth to maturity, he moves from what Schachtel terms primary autocentricity to secondary autocentricity, from the small enclosed of the infants' perceptual world to a larger enclosed world of the adult's "objects-of use". This is a

movement from one type of embeddedness to another or from a smaller to a larger cocoon, but at one point in this process the world was open and alive with adventure. 8

But while the "cocoon" at which he arrived is larger than the womb was, and while within it there are many more objects than the infant ever dreamt of, they have lost their aliveness, just as the man who has "matured" to the state where he does nothing but contribute to the protective uniformity of the cultural cocoon has lost his enthusiasm, his capacity for growth, the essential and specifically human capacity to remain open toward the world, this is, to transcend a closed pattern of reactions and thus to encounter and perceive the new, that which transcends the labels of his "patterned" experience, be it in a new object or in an object encountered many times. 9

Only the severely disturbed or possibly the completely apathetic children do not go through this period of openness so Schachtel speculates on the possibility that this quality is an innate behavior pattern which conditions man, like a young animal's play, to the future environment. He goes on to point out that this theory will not completely explain why some people retain this allocentric perception all their lives and other people who have lost it are able to experience a rebirth of allocentric interest. 10

9. Ibid.
10. Ibid., p. 186.
The individual with some measure of allocentric perception will always move beyond the familiar and labeled aspects of his culture. The more original his mind and view, the more is his potential for moving beyond what his culture labels "reality". But many forces exert closure of the world, and not the least of these forces are the teachers and the parents.

Parents and teachers, in transmitting the current socio-cultural views of the world to the child, can help both to open and to close the world for the child. Even if they mostly want to open it, they cannot help but also close it, in some ways, because there is no man who is not to a considerable extent embedded in the culture in which he grew up, the language of his culture. . .

Parents who through fear of what may happen curb the exploratory drive of children are another factor in the interference with openness to the world. The unknown tends to be avoided and the familiar embraced. Objects of the environment are seen from the view of how they may be used or rejected in the service of pleasure, pain and social displeasure. But the child never really eradicates his tendencies toward openness as much as he restrains them.

11. Ibid., p. 178
12. Ibid., p. 187
13. Ibid.
Schachtel points out that the influence of parents and teachers on the developing child in the transmission of the "closed perspective of a certain culture is universal". But the effect of the peer group will vary with the culture. In the United States he feels that many adolescents have more of a closed perception pattern than their parents or the adults since the peer culture is especially strong in the adolescent groups. The stronger the group bonds, the harder it is to maintain a different viewpoint:

To perceive things differently from the people one knows, parents and peers, can be one of the most frightening experiences if the need for consensual validation is limited, as it is for most people, to the particular social group they live in, and cannot be satisfied by the knowledge that in another place or time there are or have been people whose view of the world and whose thoughts move in a direction similar to, or at least compatible with, our own.

Man needs both autocentricity and allocentricity to exist as a whole being. If secondary autocentricity dominates, both allocentricity and primary autocentricity wither and die; man becomes alienated from both objects and his sensory capacities during this stagnation. He will encounter only what he expects to find.

14. Ibid., p. 188
15. Ibid.
16. Ibid., p. 238.
From the child's view of wonder about everything in the world, most individuals due to the stresses of life, culture, and society develop the closed view of familiarity: the different and new is not sought or wanted. The different may appear unrealistic or childish to them and even the allowance for a different view is a thought without substance.

Yet in contrast to the animals, man is capable of continued growth and development throughout his life if he succeeds in remaining open to the world and capable of allocentric interest. Such openness is the basis of progress and of creative achievement in individual life as well as in the history of mankind.\(^1^7\)

**Foshay's view of openness.** The first rule by Arthur W. Foshay for extending the possibility of openness to actual experience is to suspend normal, regular judgments and interpretations.\(^1^8\) Thus the usual definitions are abandoned for a time and defenses are lowered as the individual attempts to involve himself completely with everything that surrounds him. Such an abandonment of defense and restriction may open the individual to both disorganization and threat.\(^1^9\) This is the risk he must take.

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17. Ibid., p. 248.


19. Ibid., p. 25.
Foshay points out that many other people seem to be talking about the same thing under different names: "percept-bound", "tolerance of ambiguity", and "ability to unfreeze one's perception". However, openness alone is not enough since a process is not complete without a product. Openness in this sense is only a condition for expected results, and Foshay connects it to productive creativity.

Carl Rogers' openness to experience. The nervous system relays without restriction the stimulus in the person who is open to experience. It does not matter what form the stimulus took or where it originated; it is available. This is Carl Rogers' view of what openness involves. He extends this view with

It means lack of rigidity and permeability of boundaries in concepts, beliefs, perceptions, and hypotheses. It means a tolerance for ambiguity where ambiguity exists. It means the ability to receive much conflicting information without forcing closure upon the situation. It means what the general semanticist calls the "extensional orientation".

Even though an individual is for the most part open this fact will not eliminate what Rogers suggests are blind spots. The more blind spots

20. Ibid., p. 27.


22. Ibid.
there are, the more chance there is for an individual to produce a destructive product or action.  

Personality systems and closedness. Harvey, Hunt, and Schroder show how a personality system may be open at one level and closed at another level. This openness or closedness may occur either within or between the systems of functioning that they describe. Each of the systems must not be too closed to the next level of abstract differentiation or the individual approaches arrestation in his development. And modifications and re-education procedures are difficult when the system is closed to these differentiations.

Among other significant points encountered in their book (Conceptual Systems and Personality Organization) is the one that inhibition can produce indirectness in functioning brings about a lowered expectation that the individual's behavior can be used to manipulate a change in the environment. He is therefore much more dependent on his environment and less exploratory of it. And the inability to produce a direct expression in a situation can force displacement of

23. Ibid., pp. 75-76.

expression to other nearby situations or use in fantasy. In a sense, the individual must then close himself off to the potential available in any situation which elicits this indirect expression. The authors also state that "Indirectness of expression is associated with greater impulsivity and concreteness within the conceptual range of abstraction in each system."  

**Harold Anderson's Open System versus the Closed System.**

The system in which the individual operates is described by Harold Anderson as a vertical continuum; the top and bottom represent extremes of the open and closed relationship in a system. At the top is the "open socially integrative, propitious environment" where there is high acceptance and minimum possibilities of attack from the environment. The top of this continuum is open ended since no matter how good the situation, improvement is always possible.

The end of the closed relating part of the continuum is a definite point at the bottom where there is complete domination. The

25. Ibid., pp. 162-163.

26. Ibid., p. 164.

person is controlled completely by the environment.  

There are two parts to this scale: the upper or positive part and the lower or negative part. The former is characterized by environmental harmony, task orientation, self-abandonment and unconcern with status and security; "power is used with others not against others." But the second condition, the lower half of the continuum, "denotes a relating in conflict" in which the powerful try to think and decide for the individual. Conformity, personal security, protection and defensiveness increasingly rule the individual, and perceptions are distorted under the pressure.

The system limits or helps the individual. Creative openness must be viewed not only as a personality development, an inner relating to the environment, but as a way in which the system remains open for the individual to expand. An openness and flexibility on the part of both the individual and the environment produces the potential for a harmonious relation to the universe.

Anderson points out that Rogers' "openness to experience extensibility", Maslow's use of Rogers' term as openness of awareness,

28. Ibid.

29. Ibid.
and similar ideas by May, Fromm, and others are essentially inner conditions for creativity which occur within an open system. The closing of an individual's life space by another limits the openness of the system for the person and causes both defensiveness and self-protectiveness. Both Rogers and Maslow show openness as a two-way relationship even though the context of their words might not suggest this. Anderson clarifies the open system in the following manner:

The open system is thus the ideal, propitious environment for creativity, and anything in the environment that tends to close the system makes the environment unpupitious for creativity. This assumption must be qualified to admit the interweaving of desires and activities and the free interplay of differences out of which is developed the permeability of boundaries which is also a positive characteristic of the process of interacting. Propitious means propitious for the process of interacting. It means freedom of each person to respond truthfully with his whole person as he sees and understands the truth.

Ross Mooney's conceptual model of conditions for existence.

Ross Mooney develops a conceptual model for the existence of man. The entire universe is shown to be interrelated, and man as an individual is related inwardly and outwardly to all other energy forms of the


universe. There are energy forms within man which maintain the individual as well as forms outside him which lend support. Maintenance of the individual then depends on a constant relation to and action with other forms. This reaching-out and receiving-in must not be blind or lack selection on the individual's part: he is a special form of life with particular needs. Mooney is describing the individual as a life form which is aware of and open to most environmental forces but selective in use.

From his model for existence and his study of creative people Mooney concludes that creative people

seek (1) to hold themselves open for increasing inclusions within their experience, (2) to focus their experience through self-differentiation and self-realization, (3) to discipline themselves in order both to extend their opening and refine their focusing and (4) to derive significance from their experiencing through dependence upon increasing esthetic sensibilities.

Therefore, creative people must first seek openness to the environment and secondly seek to extend their openness, but this seeking and extension is within a personal value context.


33. Ibid., p. 79.
Openness and the adequate person. Combs states that the really adequate person will have a perceptual field that is open to experience in every possible way. This capacity to confront experience freely is directly related to a lack of threat in the environment. Threat will cause over attention to the problem and defense. The crippling effects of fear and inhibition are lessened by a positive view of self and identification; these characteristics in turn help an individual learn to be open.

Kelley points out that perception is selective because of an invisible shield that we place between ourselves and the environment. Similar to Mooney's model the shield is permeable so that we can select but with threat it becomes less so.

The Asch studies in perception. Solomon Asch's theme was "that in society we become dependent on others for understanding


35. Ibid., p. 58.

feeling and the extension of the sense of reality". He considered how this dependence distorted one's sense of what is real for as he stated there are times when social forces prevent the expression of convictions.

One of the Asch studies in individual perception will be examined: the judgment of a perceptual relation by a group of equals. In the study under consideration, one individual in the group was subjected to two opposing forces. One force was the relationship perceived and the other was the majority consensus. The individual was placed in conflict with a unanimous majority when a group of seven to nine college students were asked to match vertical lines. There were twelve sets of two cardboards for comparison. One cardboard contained a single line and the other had three unequal lines; one of the three unequal lines was the same length as the single line on the other cardboard. During the first two trials of the experiment, normal conditions were maintained. On the third trial, experimental pressure began to be exerted. Of the twelve judgments required from each group, there were seven wrong estimates by the unanimous majority.

Forty-two per cent of the subjects were not affected by the experimental conditions. Other individuals always followed the majority lead. The conclusion reached was that the experimental conditions did significantly distort the answers, but there were wide individual differences as to the effect of the pressure of the majority. During the exposure of the experiment and its purpose, the reactions of the subject under observation were drawn out. The yielders to the majority opinion had a variety of reasons but most either believed their perceptions to be wrong or yielded because they did not want to be different.

There have been other variations of the original Asch experiments, notably by Richard Crutchfield, but the basic results have not been altered. However, it had been determined that a majority of three is as strong as that of a larger group and that when the yielder is given the support of even one other individual in the group the proportion of yielders is decreased.

Summary of views. Each of the views concerning openness added something to the general concept. Schachtel brings forth a

39. Ibid., pp. 458, 455-456.

theory of concept formation which is related to perceptions and personality development. His concept involves a stronger movement from the influencing environment to the individual consciousness than the other theories. The other concepts of openness do not detract from Schachtel's theory; they supplement it. Asch shows how other people influence the perceptions of an individual. Rogers essentially related the concept to the healthy personality and accounts for destructiveness with the concept of blind spots. Kelley and Combs find the same relation to the adequate person. Harvey, Hunt and Schroder elaborate Rogers' concept. Foshay, Rokeach and Restle, and Anderson show the necessity of environmental systems being open as well as the individual. Mooney relates and summarizes all the other concepts of openness and closedness together in his conceptual model for the existence of man. They all point out that many things affect our ability to produce and that we are limited by our receptivity or lack of it.

II. STUDIES OF THE OPEN AND CLOSED INDIVIDUAL

In connection with developing a definition of the open and closed mind Milton Rokeach and his colleagues developed a scale to measure individual differences in open and closed belief systems: the Dogmatism Scale. In view of his definition of open and closed it also purports to measure authoritarianism and intolerance. The reliabilities for
the scale ranged from .68 to .93 for the final form which was tested in England, New York, and the Midwest. 41

The extreme scorers on the Dogmatism Scale were designated as open and closed in belief systems and compared on a number of laboratory tests. The experimenters wanted to discover from these tests what promoted or retarded development of belief systems, what type of cognitive and emotional functioning would be exhibited, and what relationship might exist between personality and cognitive and emotional functioning. 42 A selection from the experiments will be presented below.

New music systems. The reactions of open and closed individuals to conventional and new music were observed during two experiments. The new music was hypothesized to be less acceptable to closed individuals. All individuals selected revealed a comparable musical background but the 40 subjects (from 133) in the first experiment were evenly divided between high and low scorers on the Dogmatism Scale; the second experiment contained 44 subjects (from 147) evenly divided as to their scale score. In experiment I the individuals

41. Rokeach, op. cit., p. 96.
42. Ibid., pp. 285-286.
reacted to a 2-1/2 minute playing of Brahms and Schonberg quartets.
No difference was found for either group on their reaction to Brahms, but the open group was found to be more accepting of both the composer Schonberg and his music.

The second experiment enlarged the number of samples and determined the changes in receptiveness as the individuals listened. Schonberg and Bartok were taken as new music samples and Saint Saens and Brahms as conventional music. The results on Bartok showed no difference between groups and did not support the hypothesis. The Schonberg music produced the same results as in Experiment I. The closed individuals were found to like Schonberg less with repeated exposure. The results were considered consistent with other findings suggesting that closed individuals have greater difficulty in forming new conceptual or perceptual systems. 43

New perceptual systems. This study originally included 41 high and low scorers on the Dogmatism Scale; but after administration of the American Council on Education Test to equate the group on intelligence, 33 subjects remained (17 high and 16 low scorers). They

were studied for their ability in analytic functioning and synthesis. The first function was tapped by the Gottschaldt embedded figures test by Witkin. The second function was revealed by an adaptation of the block design tests from the Wechaler-Adult Intelligence Scale and the Goldstein-Scheerer Cube Test: designs were reproduced, enlarged, rotated, and color areas interchanged. 44

The closed group resisted the tasks as they went along although they did not differ in their ability to make the required designs. However, the open group generally took less time to synthesize as they moved through the test. 45 Since the ability to perceive analytically and the ability to synthesize are interwoven in everyday occurrence, it would appear that the closed individuals might be at a disadvantage.

New belief systems. From 249 college sophomores, 30 high and 30 low scores on the Dogmatism Scale (Form E) were selected. The Denny Doodlebug Problem 46 was the task, and the three hints to be given were typed on cards. In the visual field group (15 high, 15 low), the cards were left before the individual; the cards containing the


45. Ibid., p. 267.

46. See Appendix C.
information were removed from the other group (also 15 high, 15 low) after reading was completed. The cards were either placed before the individual as he discovered the beliefs himself or at certain specified times in the total 40 minutes: 10, 15, and 20 minutes. The instructions for solving the problem required that the individuals tested think out loud. 47

The individuals with relatively closed systems took longer to solve the problem in both groups. The difference was significant at $P = .01$ between the open and closed groups. The visual group required less time for integration between new beliefs and a new system. The authors concluded that the allowance of visual beliefs increased acceptance of the experiment, decreased needed time, and facilitated incorporation of the new beliefs. 48

Summary of reports. In the three reports reviewed, openness or closedness as defined by Rokeach and his associates was seen to affect acceptance and incorporation of both new beliefs and systems and also synthesis. These are important elements in adaptation.


48. Ibid., pp. 201-213.
III. LIMITATIONS

The studies reviewed show that not only what is received from without is affected by how open the individual is, but also his application of the information to problem solving. However, the studies by their very nature do not attempt to explain the cause of closed system.

The theories concerning the concept of openness, except for Kelley, Rokeach, and Mooney, do not point out that a certain amount of selectiveness or closedness to the environment is both normal and perhaps to be desired. Nobody has attempted to really discover the dividing line. All they can really agree on is the undesirableness of extreme closedness. Except for Rokeach and his associates nobody has devised methods for discovering openness or closedness. These methods were for use at the adult level only.
CHAPTER III

THE HOUSE-TREE-PERSON TEST AS A MEASURE OF
PSYCHOLOGICAL OPENNESS

In drawing the individual must delve into his total experience and draw forth ideas which are unique to him in view of his particular background. Significance of selection lies in the fact that for any individual there is an almost endless pool of experience, but he selects and rejects from it on the basis of his present needs, desires, and motivations.

Drawings do permit, in a large number of cases, some judgments about an individual's emotional maturity and other personality traits. Of course these revelations cannot be made without reference to time, place, and circumstance. In this sense, drawings become a projective method or means for discovering more about the individual personality.

I. H-T-P METHOD IN LITERATURE

Although the original clinical test designed by Frank Buck and its scoring system is not indicated as applying to children, its use in discovering developmental trends in children's drawings as well as certain significant findings should be noted. A selected list of findings by investigators following Buck's original work will be mentioned.

John Buck's 1948 Discussion of the H-T-P Method. In both a scoring manual and a short article summarizing and illustrating the main points of the manual, Buck points out that his method should aid in obtaining information concerning the sensitivity, maturity, flexibility, efficiency, and the degree of integration of a subject's personality; and the interaction of that personality with its environment -- both specific and general.²

Buck is describing a method which he developed to use with adults in a clinical situation after ten years of both study and use in clinical situations.

The H-T-P test as used by Buck is a two phased test. The first part is non-verbal and relatively unstructured. The person is simply

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asked to draw on a four page form sheet. A house is drawn on the second page, a tree on the third page, and a person on the fourth page. (Pencils and erasers are provided.) The second phase is verbal. The subject is provided with an opportunity to talk, interpret, and define the drawings by means of questions in a post drawing interrogation form. Buck notes that it will usually take a skilled H-T-P examiner about an hour and a half to administer and score the test.

It has been contended by Buck that the three drawings may be regarded as self-portraits as well as specific items drawn. This concept is based upon the idea that the subject is not told precisely what house, tree, or person to draw. The house is presumed to represent the location of either satisfying or frustrating interpersonal relationships since it represents the dwelling place. The tree can convey the subject's relationship to the environment since it presents the image of an inanimate but alive or formerly living object. The image of a person lends itself to self-portraiture.


Buck's summary and conclusion about the test contain the following points:

1. Since the stimuli presented for drawing are so completely familiar, the subject must project and produce what may be regarded as a self-portrait.

2. In the qualitative appraisal, the inexperienced examiner should limit himself to assembling a listing and identification of the apparently significant factors for the individual appraised.

3. The quantitative appraisal of the individual can identify the level and method of thinking even though it is not to be considered as a regular intelligence test.

4. The five points favoring its use include the verbal and non-verbal factors of the test, the primitiveness of drawing facilitating expression by the withdrawn or below average, the unstructured quality of the non-verbal phase compelling projection, the expression of suppressed material by emotions released in drawing, and definite and further projection by the individual in the post-drawing interrogation.

5. The lack of scoring objectivity in both the quantitative and the qualitative aspects is the method's major disadvantage.

The Brown review. Several years later, in 1952, Fred Brown discussed both the H-T-P technique and the completely qualitative Machover method which had appeared one year after Buck's. He stated that Buck tended to reject a complete use of universal symbolism in favor of using the individual's own interpretation but was not completely free of such a bias himself since significance was attributed to certain elements in the drawing. Both methods were found to have their interpretative basis in Freudian psychoanalysis. And both workers felt that the figure projected by the patient is not only a projection of the self and its experiences, but a collection of different images and feelings accumulated in the course of the individual's lifetime. 7

Isaac Jolles studies. Jolles and Beck reported about the validity of some hypothesis for the qualitative interpretation of the H-T-P for elementary school children during the years 1952 and 1953. The drawings were taken from Illinois school children of five to twelve years; the same population was used for four studies. The first study

7. Fred Brown, "House-Tree-Person and Human Figure Drawings", Progress in Clinical Psychology, Daniel Brower and Lawrence E. Abt, editors (New York: Grune and Stratton, Inc., 1952), Vol. I, Section 1, pp. 173-175.
supported Buck's hypothesis that subjects tend to draw their own sex. 8
The second study showed that girls at all ages drew more "phallic
trees" than boys. 9

The third and fourth studies concerned the horizontal and vertical
placement of the three drawings on the page. The horizontal placement
of the drawn whole to the left indicated emotional expression and
intellectual control was indicated by placement to the right. However,
these factors were affected by age and the particular drawn whole.
The horizontal placement did not indicate masculinity or femininity. 10
The vertical placement study on the other hand indicated that the
children did not always place their drawings above the geometric center
of the page which would have suggested an attempt to gain satisfaction
from fantasy. The opposite placement indicated a reality orientation

8. Isaac Jolles, "A Study of the Validity of Some Hypothesis
for the Qualitative Interpretation of the H-T-P for Children of Elementary

for the Qualitative Interpretation of the H-T-P for Children of Elementary

and insecurity. Girls had a mean higher vertical placement.  

**Hostility and aggression shown in the H-T-P.** E. F. Hammer had 148 Negro and 252 white children's H-T-P drawings rated on an aggression-hostility scale; the Negro children had a significantly higher mean aggression-hostility rating. The children were in school grades of one to eight. In another study Hammer and Piotrowski had 400 school age children's drawings rated for hostility on a scale of zero to two by six clinicians who were then administered the Szondi test. A correlation of .94 between the Szondi test and the ratings of hostility on the drawings suggested the possibility of ratings being determined by the projections of the clinicians.  

**Sociometric ratings.** By means of a checklist of thirty-seven items the H-T-P was evaluated for social adjustment and compared


13. Emanuel F. Hammer and Zygmund A. Piotrowski, "Hostility as a Factor in the Clinician's Personality as It Affects his Interpretation of Projective Drawings (H-T-P)", *Journal of Projective Techniques*, 17:210-6, June, 1953.
with the Tolor and Tolor sociometric questionnaire. Thirty-two children were tested. Correlations on the House and Person were significant at the .05 level of confidence, but the tree yielded a negative correlation. No real conclusions were developed.

**Harry S. Beck's use of the House with children.** Beck found that the inclusion of details regarded by Buck as essential for showing non-deterioration must be considered to some extent a developmental process which apparently matures at about six years since before the age of six years they were not necessarily included. He cautioned about the use of the H-T-P on the basis of Buck's scoring below this age and recommended a restandardization of the scoring of the house for children's drawings.

In a second, more recent study, he tried to use eight positive and seven negative characteristics related to developmental level in the drawings of the house as predictors of school achievement. Only low positive correlations were established. He concluded that the

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house drawing test as used in the study would not be suitable for select­
ign beginning first graders with potential achievement problems. 16

**H-T-P validation.** A major review of H-T-P validation studies was made by William Sloan in 1954. At that time he criticized the studies because of their scarcity of logical statements about the validation concept and their too many implicit inferences. 17

**Summary.** All of these studies should be considered a valuable contribution to the knowledge of what the H-T-P test can be. They point out the problems interfering with proper scoring and study of the H-T-P test by environmental and emotional factors as well as training. They also record the problems of working with different age levels of children even though certain facts may be noted. In summation, one might say that the method presented a promise in work with children which had not been fulfilled by the H-T-P test in its original form.

II. ADAPTATION OF THE H-T-P TEST AS USED IN THE PRESENT STUDY AND ITS ADMINISTRATION

**Adaptation.** The three drawn separate wholes of Buck's


original H-T-P test were drawn together on an eighteen by twenty-four inch piece of white drawing paper in the adaptation of the test. The subjects were provided with large drawing pencils. A box of mixed, broken crayons was also provided for use if desired. No post interrogation or questioning was provided.

In scoring, Buck's manual was not used but rather a quantitative scoring system was adopted from three different sources. The total H-T-P score was derived from the sum of the three parts which came from the different sources. The manual for scoring was as follows:

**H-T-P Scoring Manual**

The total scores for openness equals the Torrance Accessibility score plus the adaptation from the Goodenough scoring for the human figure and the additional elaboration score.

**Torrance Psychological Accessibility Score**

- Door, 2 points
- Keyhole, 1 point
- Door Knob, 1 point
- Door Bell, Door Knocker, etc., 1 point
- Ground Floor window with panes or drapes, 2 points each
- Ground Floor window without panes or drapes, 1 point each
- Upper window with panes or drapes, 1 point each
Upper window without panes or drapes, 1/2 point each

Large picture window, 5 points each

Steps, 1 point

Path leading to door, 1 point

Note: 1) Windows are considered upper window when above the halfway mark on the house side. 2) If the single window in the house is only slightly above the halfway mark, count it a ground floor window. 3) When a window contains both panes and drapes, count an extra point or half point for the additional inclusion.

Goodenough Scoring for the Human Figure (Adaptation)

One point will be given for the inclusion of each of the following items in the drawing of the person. The first ten items are taken directly from Goodenough's list but the last four are modifications of items included in her list.

Head present
Legs present
Arms present
Neck present
Eyes present
Nose present
Mouth present
Hair shown
Clothing present
Ears present
Torso (as two parts to the body)
Hands shown
Feet shown
Profile

Note: 1) Do not count a point for clothing just because the figure is colored. 2) In order to give a point for the torso, the upper and lower part of the trunk must be indicated.

Elaboration Score

One point will be given for each addition to the picture beyond what is necessary to establish the basic forms of a house, tree, and person. The elaboration score will not be a duplication in any instance of the Torrance or Goodenough scoring procedure.

Note: A repeated unit (second house, tree, person) which is exactly the same as the first unit will receive only one point.

The first section consisted of E. Paul Torrance's "Psychological Accessibility" score which is based upon the drawing of the house alone. In general Torrance found increasing accessibility through the fifth grade in his data. However, the present study could not

confirm this information since work was only completed with one grade level.

The second scoring section contains fourteen possible points based on Florence Goodenough's list of 51 points in the Class B scale for assessing the human figure. 19 The first ten items which were taken from Goodenough without modification and used her directions for scoring except in the case of the ninth item where clothing was only counted if it appeared on the body. Essentially her requirement for giving credit to an item is observation of the use of any method clearly intended to represent the desired feature.

The eleventh item is essentially a more complicated interpretation of item 4a from her list which was any clear indication of the presence of the trunk. 20 Here, in the present scoring, the child is asked to define the upper and lower parts of the trunk which is certainly a more complicated bit of perception.

The thirteenth and fourteenth items are simplifications of Goodenough's items 10e and 12d and her directions for scoring were not followed. 21 These items follow the general trend and are credited


20. Ibid., p. 92.

21. Ibid., pp. 101, 104.
as long as some clear indication of their presence was observed.

The last item, the profile, considers only the face and head in profile not the entire body as Goodenough does. Credit is given again for any clear representation of the head in profile. In this sense, it is rather extreme modification of Goodenough's points 18a and 18b.

Three of the first ten items -- the neck, the hair, and the ears -- were included by twenty-six per cent or less of all the normally progressing six year old children in Goodenough's original standardization test which used 3,593 cases from four to ten years in age. The remaining items from the first ten were included by 75 per cent or more of the children.

There was a percentage increase toward inclusion in all of the first ten items at the seven year level. However, only one of the low inclusion items, the neck, approached the fifty per cent level: forty-four per cent of the children included it. The seven items which had previously been included by at least seventy-five per cent of the children were now included by ninety per cent or more in all but one instance (then eighty-eight per cent).

22. Ibid., pp. 109-110.
23. Ibid., pp. 23-25.
24. Ibid., pp. 24-25.
The third section, the elaboration score, consisted of the allowance of a one point score for each item added to the drawing beyond what was necessary to establish the three required forms and beyond the scoring established in either parts one or two. It was considered that the perception and recording of additional items in a drawing other than the minimum requirements would reflect some degree of individual openness to the surrounding environment.

Administration. Thirty students in their second semester of first grade were given the adapted H-T-P test. They were selected by the use of random numbers: ten from a high achievement classroom, ten from an average achievement classroom, and ten from a low achievement classroom. Such a selection was considered to create a grouping as nearly equivalent to a heterogeneous classroom as possible.

The test was administered to two groups: once to a group of fourteen and once to a group of sixteen children. Each time the children were allowed twenty minutes to complete their drawings. If they finished sooner, the drawing was collected, and they were allowed to draw a second picture of their own choice until the entire group was finished. Most of the children finished before the end of the time limit.

The test directions were as follows: I would like you to draw a house, a tree, and a person on the paper. Their attention was not
directed to the box of crayons which were available if they wanted to use them. All the children used the colors without needing to ask for permission. No other directions were given but questions were answered if they arose. An example of a question was the child who asked if he could add fruit to his tree. The answer was, "Of course."

Reliability. The reliability of the scoring system was checked by a second person. He selected ten drawings from the group of thirty; three were taken from each classroom and one from the entire group of thirty. All selections were random. After the checker scored the drawings by the same manual, an item analysis of scoring differences was made and the percentage of agreement was found between the two scorers on each of the three subtests.

The scoring differences on the Torrance "Psychological accessibility" score resulted mainly from differences in how to interpret the position of a window. The one scorer might consider the window as being upper while the other scorer might, due to the size and location near the center of the house, consider the window ground floor. No errors were made concerning omissions of noting doors, door knockers, and other items in the scoring system. Table I shows the percentage of agreement between the two scorers.

In Table II the disagreement in scoring results from two sources. The two scorers had disagreements resulting from simple
### TABLE I

Percentage of Item Agreement in Scoring on the Torrance Psychological Accessibility Subtest

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<th>Student Number</th>
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<th>Disagreement</th>
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Percentage of agreement is 90.9 per cent between scores.

### TABLE II

Percentage of Item Agreement in Scoring on the Subtest

Adapted from Goodenough's Human Figure Scoring

<table>
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<tr>
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<td>11</td>
<td>0</td>
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</tbody>
</table>

Percentage of agreement is 93.2 per cent between scores.
omission from a lack of perceiving the required point. They also had disagreements resulting from the scoring of the torso; their visual image of what this word should mean as defined was different. The result was that the checker gave more credits for a torso included in the human figure than the original scorer did. However, these differences between the scorers did not result in much disagreement in scoring.

The third subtest, elaboration of any additional items, is represented in Table III. All disagreements between scorers in this subtest result from omission rather than differing interpretations of the same points. The percentage of agreement is 80.49 per cent between the two scorers.

Quantitative Scoring. The manual previously described provided the method for scoring the thirty drawings. The results were tabulated and analyzed; they are presented in chapter four.
### TABLE III

Percentage of Agreement in Scoring on the Subtest Tabulating the Elaboration for the Entire Drawing

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Agreement</th>
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</table>

Percentage of agreement is 80.49 per cent between scores.
CHAPTER IV

DISCUSSION OF H-T-P RESULTS

Children up to the age of nine will express what they feel as well as what they see if they are allowed to be free enough. However, the older a child becomes the less he retains this ability. Lowenfeld found children at five and six expressing human figures more in a felt than a realistic manner but by ten conventionalized representation had overcome their drawing. Other environmental objects were increasing in importance and individual manner or representation. Other workers in the field of young children's drawings have agreed with Lowenfeld that young children will express their inner self and feelings but older children become too involved with conventional ways of responding to the surrounding world to express themselves in the same manner. Their own emotional response is restrained and the conventional response of the group is accepted.

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2. Ibid., p. 227.
I. DISCUSSION OF QUANTITATIVE SCORING

The Torrance Psychological Accessibility Score. The Torrance subscore which was used as an index of individual accessibility is represented by Table IV where all the children are listed by number. (Age and sex also are indicated in the table.) They will be referred by the same number throughout the rest of the study.

The Torrance subscore is based upon the previously described scheme for scoring the openings and entrances to a drawn house. The house is presumed to represent the degree to which the child may allow himself to interact with others and the world since it is where he dwells. The limits to which others may reach him can also be shown in this structure.

The Torrance subscore which was used as an index of individual accessibility might be represented by a high peaked curve which would be skewed to the right if one considers the single score at twenty-four; the curve described is a distribution of scores represented in Table IV. When the score of twenty-four is eliminated, one can find an almost normal curve with a mode of four. The median is four in a range of zero to twenty-four; nine subjects had scores of four.

It is important to notice that two of the children had scores of zero. This fact would indicate that their house, although recognizable as a house, did not include any of the necessary openings for
# TABLE IV

## SCORES OF PSYCHOLOGICAL ACCESSIBILITY

**BASED ON THE HOUSE**

<table>
<thead>
<tr>
<th>Subject Number</th>
<th>Age* (Months)</th>
<th>Score</th>
<th>Subject Number</th>
<th>Age* (Months)</th>
<th>Score</th>
</tr>
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<tbody>
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<td>29</td>
<td>80</td>
<td>3</td>
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</tr>
</tbody>
</table>

*as of 5/8/64.
gaining access to the outside world. One might speculate that if their personal home situation as represented by the house is as closed as this, how can they receive anything from the outside world. Figure 1 represents an illustration of such a potentially closed individual.

Figure 2 illustrates the opposite case of the highest score. The house form remains conventional with a one dimensional aspect, but the gay inclusion of numerous windows of varying sizes is not average. It is almost as if the windows are necessary to let the viewer see in and out at every point of the house.

Figure 2 also raises the question of why more children did not go beyond the limits of simply making a house with one or more windows and a door with a knob. For the majority of the children this was their house. However, four children did not add a door knob to their door. Six children drew houses without windows of any type. Five children did not put either panes or drapes in their windows. Since these objects are a part of their everyday world, they were probably either consciously or unconsciously rejected.

Figures 3 and 4 represent illustrations of houses most commonly drawn with the group. They have simple doors, knobs and windows. Figure 3 has more than one window but neither panes or drapes. Figure 4 has only one window but it is extremely large and almost like a picture window. It also contains window panes. Both
Figure 1
Drawing of Subject 23

Figure 2
Drawing of Subject 16
Figure 3
Drawing of Subject 30

Figure 4
Drawing of Subject 2
figures represent houses with an average or near average score.

Five of the children drew houses which included unusual elements for this group. Subject 27 (see figure 5) was the only one to add a path to his house. Subject 20 included a window in his door and the only keyhole in the thirty drawings. A window in the door with drapes was also added by Subject 19. Two children, Subjects 12 and 8, had both panes and drapes in their windows, but Subject 8 went one step further and added the only door knocker found in the drawings. However, to have only one sixth of the children add these common elements indicating accessibility is rather sad.

Torrance found an increase in accessibility through the fifth grade, but this fact apparently does not warrant the assumption that accessibility increases with age within a grade. The present study shows several scores where the child's age is among the oldest (Subject's 2, 23, 25, 10, 6, and 16) but the score forms part of a wide range from zero to twenty-four (scores 5, 0, 4, 7, 3 and 24 respectively).

Figure 5
Drawing of Subject 27
The six youngest subjects (subject numbers 5, 18, 20, 22, 17 and 26) also show a range from zero to the above average score of seven and a half (scores 7, 5, 7-1/2, 4, 0, and 3 respectively). An increase of age within one grade level doesn't indicate increased accessibility, and the difference between the ages of the boys and the girls in the study is not significant: $X^2(df = 1) = 0.017$. The difference between boys and girls in the study in terms of intelligence and psychological accessibility was not significant: for I.Q. $X^2(df = 1) = 0.144$ and for psychological accessibility $X^2(df = 1) = 0.096$.

The Human figure score adapted from Goodenough. The second of the subscores, shown in Table V, is the human figure score adapted from Goodenough's scoring scale. It has a maximum score of fourteen, but only three children approached it with scores of twelve. The high scores appear to be distributed between the sexes, but the girls had fewer low scores and only one case below the median of eight for the ungrouped scores. (Three of the subjects had scores of eight.) None of the girls was as low as the mode for the entire group which was six. The difference between the boys and girls in the study in terms of age and intelligence was not significant: for age $X^2(df = 1) = 0.017$ and for I.Q. $X^2(df = 1) = 0.144$. The girls had a median score of nine and the boys a median of six. The difference between the
TABLE V

SCORES OF THE HUMAN FIGURE SCORE

ADAPTED FROM GOODENOUGH

<table>
<thead>
<tr>
<th>Subject Number</th>
<th>Age * (Months)</th>
<th>Score</th>
<th>Subject Number</th>
<th>Age * (Months)</th>
<th>Score</th>
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</table>

*as of 5/8/64.
The median human figure score for girls and boys in this sample is significant at the .01 level: \( X^2(\text{df} = 1) = 17.893 \). The two lowest scores of five were found among the boys. Perhaps the girls are taught by their culture to observe other human beings much more closely than boys are or perhaps the difference is a manifestation of earlier physical maturity.

Even when only the ten items taken directly from Goodenough's scoring list are considered, the medians from the girls, the boys, and the total group vary. (See Table VI.) In this case the medians are 7.5 for the entire group, eight for the girls, and six for the boys; the difference between the median scores for the girls and the boys is significant at the .01 level: \( X^2(\text{df} = 1) = 11.627 \). Both the range and mode follow the same pattern for the ten items. The range for the girls is from seven to ten points with a mode of eight, and the range for the boys is from five to nine with a mode of six. The findings indicate the same sex difference pattern whether the ten Goodenough items are considered or the total fourteen items are used.

The percentage of normally progressing six and seven year old children including the ten items from the Goodenough scoring has been listed in Table VII: these percentage figures were taken from
TABLE VI

HUMAN FIGURE SCORING DIRECTLY FROM GOODENOUGH'S LIST

<table>
<thead>
<tr>
<th>Subject Number</th>
<th>Age* (Months)</th>
<th>Boys Score</th>
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<th>Age* (Months)</th>
<th>Girls Score</th>
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*as of 5/8/64.
### TABLE VII

**COMPARISON OF SUBJECTS AND GOODENOUGH STANDARDIZATION SAMPLE (Expressed in Percentage)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Children in Study</th>
<th>Goodenough's Subjects</th>
</tr>
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<tbody>
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<tr>
<td>Ears</td>
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</table>
the Goodenough tables. Table VII also includes the percentage of subjects from the present study who included these items in their drawings. Only in the non-inclusion of clothing, ears, and noses are the children of the present study below the six year level of the Goodenough study. In this way they are comparable to the non-elaboration tendencies of a younger child. Otherwise the percentage of inclusion seems to indicate a group of children in the six to seven year range.

The other four points which were adapted but not taken directly from Goodenough show a very low percentage of inclusion for the study group. Seventeen per cent included the torso, thirty per cent included hands, fifty per cent feet, and only seven per cent included a profile view of the head. While the first and the last items mentioned are possibly not significant, both the feet and the hands indicate means of mobility in and contact with the world. To find so few children including feet and/or hands in a drawing of the figure possibly raises serious questions concerning potential restrictions.

Figure 6 shows a very high scoring figure drawing of great skill and complexity, but figure 7 shows one of the correspondingly

Figure 6
Drawing of Subject 9

Figure 7
Drawing of Subject 15
limited figure drawings. They represent a high and a low score in the total range. One of the previously shown figures, figure 2, represents a rather average score even though the drawing itself has great movement and expression.

**The elaboration subscore.** The elaboration subscore, which consisted of points noted for each addition to the drawing beyond what was necessary to establish the three basic required forms (House-Tree-Person) and beyond the rules previously established for the Torrance and Goodenough subscores, showed a range from zero to eleven. These subscores, shown in Table VIII, show a tendency for the scores to fall at the lower end of the range instead of being evenly distributed. The highest elaboration score is not extremely high. Perhaps even the individual with eleven (Subject 7) might have recorded more details in his drawing: he had such everyday items as a plane, a bird, grass, branches on the tree, and bricks forming the chimney. Certainly the individual represented by the median of 4.5 might have found a few more items to include since the door markings, chimney, smoke from the chimney, fruit on the tree, and sun of Subject number 16's drawing were typical inclusions.

The boys median elaboration score was four and the girls median score was six. Four boys had scores of four. The difference between the median scores for boys and girls was not significant at
TABLE VIII

SCORES OF THE ELABORATION SUBSCORE OF THE H-T-P

<table>
<thead>
<tr>
<th>Subject Number</th>
<th>Age* (Months)</th>
<th>Score</th>
<th>Subject Number</th>
<th>Age* (Months)</th>
<th>Score</th>
</tr>
</thead>
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<td>10</td>
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<td>81</td>
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<td>81</td>
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<td></td>
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<tr>
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<td>88</td>
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<td></td>
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<tr>
<td>24</td>
<td>86</td>
<td>10</td>
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<td></td>
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<td></td>
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<td></td>
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<td>26</td>
<td>79</td>
<td>4</td>
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<td>80</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>28</td>
<td>80</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>29</td>
<td>80</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*as of 5/8/64.
the .05 level:  \( X^2(\text{df} = 1) = 0.884. \)

This time six individuals scored either zero or one on elaboration which could indicate either an unwillingness to go beyond the minimum requirements of the adult examiner or an extreme lack of contact with the surrounding world. Another interpretation of the low scores might be formulated as a lack of involvement with the task. The children might not be sufficiently involved or cannot or will not share these elaborative items as they see them with others. The absence of the items in the drawing might also point more to environmental restriction rather than economic deprivation. The causes of deprivation may be multiple, and it is often difficult to discover which factor is they key to the situation.

Table IX shows a listing of the number of times a particular item appeared in the elaboration score on the thirty drawings. There is a total of 145 elaboration items which have been divided under the following categories: house, tree, person, and other environmental or background objects. It is important to find out which items are seen by the group as a part of the picture and which items are usually recorded by a single individual. Such a notation gives clues as to what is most common for a given age and area. However, in scoring the drawings it was found that whether the elaboration score was high or low, there was no item pattern identified. The individual with a
<table>
<thead>
<tr>
<th>Subj No.</th>
<th>Total Score</th>
<th>Elab. Score</th>
<th>House</th>
<th>Tree</th>
<th>Person</th>
<th>Other Environmental or Background Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22</td>
<td>10</td>
<td>2 Chimney, smoke from chimney</td>
<td>3 fruit in tree, side branches from tree, bird house on tree</td>
<td>3 neckline and puff sleeves, purse, curl to end of hair</td>
<td>2 grass, car</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>2</td>
<td></td>
<td></td>
<td>1 top hat</td>
<td>1 repeated unit of H-T-P</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
<td>3</td>
<td>2 chimney, smoke from chimney</td>
<td>1 fruit in tree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>17</td>
<td>4</td>
<td>2 chimney, smoke from chimney</td>
<td>1 fruit in tree</td>
<td></td>
<td>1 plane</td>
</tr>
<tr>
<td>5</td>
<td>21</td>
<td>4</td>
<td>2 chimney, smoke from chimney</td>
<td></td>
<td>1 person leaning against tree</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>15</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE IX
ITEM OF THE ELABORATION SCORE LISTED BY THE CATEGORIES OF HOUSE, TREE, PERSON
<table>
<thead>
<tr>
<th>Subj No.</th>
<th>Total Score</th>
<th>Elab Score</th>
<th>House Description</th>
<th>Tree Description</th>
<th>Person Description</th>
<th>Other Environmental or Background Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>24</td>
<td>11</td>
<td>5 chimney, smoke from chimney, line indicating stairs, curtain, or crack in house window, bricks making up chimney, roof edge elaborated</td>
<td>2 branch on tree, bird house</td>
<td></td>
<td>4 bird, plane, grass, bird's feet</td>
</tr>
<tr>
<td>8</td>
<td>27</td>
<td>9</td>
<td>1 bark on tree indicated</td>
<td>3 shoes and socks, dress ornament and eye lashes</td>
<td></td>
<td>5 ground, flower, butterfly, sun, skyline</td>
</tr>
<tr>
<td>9</td>
<td>22</td>
<td>6</td>
<td>2 chimney, smoke from chimney</td>
<td>1 fruit in tree</td>
<td>1 second person (same as first)</td>
<td>2 plants, ground line</td>
</tr>
<tr>
<td>10</td>
<td>16</td>
<td>3</td>
<td>2 object at end of figure's arm (flag), top hat</td>
<td></td>
<td></td>
<td>1 ground line</td>
</tr>
<tr>
<td>11</td>
<td>20</td>
<td>9</td>
<td>2 chimney, smoke from chimney</td>
<td>2 bird nest in tree, small birds in nest</td>
<td></td>
<td>5 wavy line for ground and grass, skyline, rain, sun, bird</td>
</tr>
<tr>
<td>Subj No.</td>
<td>Total Score</td>
<td>Elab Score</td>
<td>House Details</td>
<td>Tree Details</td>
<td>Person Details</td>
<td>Other Environmental or Background Objects</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>------------</td>
<td>---------------</td>
<td>--------------</td>
<td>----------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>12</td>
<td>25</td>
<td>8</td>
<td>1 chimney</td>
<td></td>
<td></td>
<td>3 cut of dress top (v-neck) flare in dress and skirt, bow in hair</td>
</tr>
<tr>
<td>13</td>
<td>20</td>
<td>8</td>
<td>2 chimney on house, smoke from chimney</td>
<td>2 bananas in tree branches</td>
<td>1 curl to hair ends</td>
<td>3 ground line, sun in sky, skyline</td>
</tr>
<tr>
<td>14</td>
<td>20</td>
<td>7</td>
<td>2 house chimney, smoke from chimney</td>
<td></td>
<td>2 person flip to hair ends, buttons on torso</td>
<td>3 skyline, sun, ground line</td>
</tr>
<tr>
<td>15</td>
<td>12</td>
<td>1</td>
<td></td>
<td></td>
<td>1 top hat</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>36</td>
<td>5</td>
<td>3 door markings, chimney, smoke from chimney</td>
<td>1 fruit on trees</td>
<td></td>
<td>1 sun</td>
</tr>
<tr>
<td>17</td>
<td>12</td>
<td>6</td>
<td>2 chimney, smoke from chimney</td>
<td>1 bird-cat on tree</td>
<td></td>
<td>3 clouds, sun, dead birds, rabbit on ground</td>
</tr>
</tbody>
</table>
### Table IX--Continued

<table>
<thead>
<tr>
<th>Subj No.</th>
<th>Total Score</th>
<th>Elab Score</th>
<th>House</th>
<th>Tree</th>
<th>Person</th>
<th>Other Environmental or Background Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>18</td>
<td>7</td>
<td>2 chimney, smoke from chimney</td>
<td>2 2nd tree, fruit in tree</td>
<td></td>
<td>3 shrubs in front of house, grass, sky line indicated</td>
</tr>
<tr>
<td>19</td>
<td>20</td>
<td>4</td>
<td>2 smoke from chimney, chimney</td>
<td>1 arm-like branches on tree</td>
<td>4 puffed sleeves of dress</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>18 1/2</td>
<td>5</td>
<td>2 chimney, smoke from chimney</td>
<td>1 fruit on tree</td>
<td>1 2nd person</td>
<td>1 car</td>
</tr>
<tr>
<td>21</td>
<td>14</td>
<td>4</td>
<td>1 chimney</td>
<td>1 2nd tree</td>
<td>1 person in doorway</td>
<td>1 animal objects (2 of same form)</td>
</tr>
<tr>
<td>22</td>
<td>16</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1 buckle</td>
</tr>
<tr>
<td>23</td>
<td>8</td>
<td>2</td>
<td>2 chimney, smoke from chimney</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>10</td>
<td>3 chimney, bricks on roof, door frame</td>
<td>2 fruit in tree, hole in tree</td>
<td>1 curl of hair, belt line</td>
<td>3 dog, sun or cloud, center of sun or eye</td>
</tr>
<tr>
<td>Subj No.</td>
<td>Total Score</td>
<td>Elab Score</td>
<td>House</td>
<td>Tree</td>
<td>Person</td>
<td>Other Environmental or Background Objects</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>------------</td>
<td>-------------</td>
<td>-------------------</td>
<td>---------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>25</td>
<td>10</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>12</td>
<td>4</td>
<td>1 knob on top of house</td>
<td>1 fruit in trees</td>
<td></td>
<td>2 fences, animal</td>
</tr>
<tr>
<td>27</td>
<td>13</td>
<td>1</td>
<td>1 chimney</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>15</td>
<td>6</td>
<td>1 decorations on house (a window</td>
<td>3 roots, bark on tree, fruit</td>
<td>3 hat on person, buttons on torso</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>16</td>
<td>6</td>
<td>4 roof markings, chimney, chimney smoke, ornament on door</td>
<td>1 2nd tree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>15</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
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<td>47 Total</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
score of three might have all his items in one category or in three separate categories.

In connection with the repeated inclusion of certain items, it is wise to remember Sylvia Markham's comments about items which appear with great frequency at specific age levels. She found that about sixty per cent of the children at six and ninety per cent of the children at age seven included chimneys in the H-T-P test. She also found many cases of paper-basing: the children draw items from the bottom edge of the paper. She suggested that this might be normal in children's drawings and not an error. In the thirty children of the present study two thirds or twenty children included a chimney in their drawing; and twenty-four children brought at least their house to the edge of the paper or less than one inch from the edge of the paper at some point. Figure 2 shows both these group characteristics. Many of the children, like the girl who drew figure 2, also brought the rest of the items of their drawing to the base line of the paper.

According to Markham the dull and young children were more likely not to draw windows in the main wall of the house, but the older

or brighter children were more likely to include window details. Five of the eight children who did not include a window in their house in the present study, could be classified as dull or dull-average (95 or below I.Q.); two of the four children who did not include window details could be classified as either young or dull. "Details such as porch, steps, walkway, shrubbery, garage, and ground-line made no appearance at all in the drawings of dull children." In the present study garages, steps, and porches were not included in any drawings, but the dull and dull-average children (below 95 I.Q.) were not among the seven children who drew a ground line or the four children who added what might be termed shrubbery (grass, flowers, and shrubs).

Five drawings will be used to illustrate the great variety in elaboration scores. The illustrations range from high scores of nine and ten to a low of zero. Figures 8 and 9 are drawn by a boy and a girl respectively. Both drawings are rich in detail even though their houses are conventional. Figure 9 does not include the conventional chimney even though such unusual items as bark on the tree, eyelashes on the girl, a plant, and an insect are recorded. Unlike figure 8 the house and other objects in the drawing are not paper based.

6. Ibid.
Figure 8
Drawing of Subject 24

Figure 9
Drawing of Subject 8
However, figure 8 shows a hole in the tree, a center or eye in the sun, and bricks on the roof (according to the boy’s report to the examiner).

Scores of four and three are represented by figures ten and eleven respectively. The boys who drew these pictures fall below the median for the group. Upon examining their drawings for elaboration one cannot feel that they were completely unwilling to share with the world, but their elaboration score is basically the three most common items found in this set of thirty drawings: a chimney, smoke from the chimney, and fruit in the tree. Figure 10 includes a conventional drawing of a plan which fits in with the rather stereotyped representation in the rest of the drawing. Although figure 11 shows a drawing having a lower elaboration score, the non-restrictiveness of the human figure in the drawing possibly makes it the equal of the other drawing.

The last drawing, figure 12, shows a boy who had low average scores in the other subtest, but represents a zero elaboration score. Since figure 12 represents one of the oldest children, immaturity would probably not be a limiting factor. Moreover, his total test score of 107 on the California Test of Mental Maturity (Primary Short Form) is slightly above average so intelligence would probably not be a limiting factor. For some reason he was apparently just unwilling to go beyond the minimum requirements.
Figure 10
Drawing of Subject 4

Figure 11
Drawing of Subject 3
Figure 12
Drawing of Subject 25
Total scores of the H-T-P test. Eight points and thirty-six points represent the high and the low scores in the range for the total H-T-P score shown in Table X. There was a greater cluster of scores between the twelfth and the seventeenth points on the range than between any other six points, but the scores did not form a true normal curve. The median of the scores of the entire group was seventeen; two children had scores of seventeen.

The first grade children studied show a difference in median scores and range of scores when divided into boy and girl groupings. The girls' median score after such a division is twenty; it is above the group median score. (Three girls had scores of twenty.) The boys' median score is sixteen which is below the group median. (Two boys had scores of sixteen.) The difference between the medians is significant at the .05 level: $X^2(df = 1) = 4.751$.

In the case of high and low scores, the girls' group contains the three highest total scores for the entire group: Subject 8 with a score of 27, Subject 15 with a score of 36, and Subject 12 with a score of 25. The lowest scores in the girls' group are just slightly below the total group's median score: Subjects 6 and 30 with a score of 15 and Subject 22 with a score of 16. The girls' low scores are at the boys' median.

On the other hand, the boys' highest scores, represented by
<table>
<thead>
<tr>
<th>Subject Number</th>
<th>Age* (Months)</th>
<th>Score</th>
<th>Subject Number</th>
<th>Age* (Months)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>88</td>
<td>13</td>
<td>1</td>
<td>88</td>
<td>22</td>
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<tr>
<td>3</td>
<td>86</td>
<td>17</td>
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<td>87</td>
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<td>4</td>
<td>86</td>
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<td>84</td>
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<td>22</td>
<td>77</td>
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<tr>
<td>20</td>
<td>77</td>
<td>18 1/2</td>
<td>30</td>
<td>80</td>
<td>15</td>
</tr>
<tr>
<td>21</td>
<td>83</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>88</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>86</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>88</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>79</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>80</td>
<td>13</td>
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<td></td>
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<tr>
<td>28</td>
<td>80</td>
<td>15</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>80</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*as of 5/8/64.
subject 24 with 24 points, subject 7 with 24 points, and subject 5 with 21 points are all below the girls' lowest top score. The three lowest total scores in the boys' group represented by subject 23 with 8 points, subject 25 with ten points, and subject 26 with 12 points are far below the girls' lowest score.

For both the boys and the girls age does not appear to be an important factor in determining total score. The difference between the boys and the girls in terms of age was not significant at the .05 level: $X^2(df = 1) = 0.017$.

The total scores represent all sorts of subscore combinations. Drawings, such as the drawing in figure 2, show an individual with average subscores in elaboration and human figure but an extremely high psychological accessibility subscore. This pattern of having one or two high subscores which raises a total score to average or above average for the group is not as uncommon as that of finding an individual who is above average or average in all subscores such as the drawings represented in figures 9 and 10. Some individuals had a zero for one of their subscores and still managed to maintain an average or near average score as shown by figure 3 or figure 13. Other children such as the subject with the lowest score of 8 (see figure 1) were usually consistently below the group median scores for each subtest.
Figure 13
Drawing by Subject 6
II. RELATIONSHIP OF THE H-T-P TEST SCORES WITH OTHER STANDARDIZED TESTS

The House-Tree-Person test and the Stanford Achievement test. (Primary Battery). The children who had been given the H-T-P drawing test also took the Stanford achievement test, primary battery, along with the rest of their class in May of 1964. Table XI shows the correlations between the various subtests of the achievement test and the H-T-P total and subtest scores.

In every case there is a significant correlation between the total H-T-P score and the achievement subtests. The correlations are all significant at the one per cent level except in the case of the arithmetic subtest.

The correlations between subtest scores of the H-T-P test and the achievement subtests show mixed results. The elaboration score of the H-T-P test shows a significant relationship to the vocabulary (0.41), word reading (0.34), and word study skills (0.44) subtests. The last subtest correlation, word study skills, was significant at the 0.01 per cent level.

The human figure score of the H-T-P test correlated significantly at the 0.05 per cent level with three achievement subtests: paragraph (0.40), word study skills (0.37), and arithmetic (0.38).

Both the Torrance psychological accessibility score and the
TABLE XI
RANK ORDER CORRELATIONS BETWEEN H-T-P TEST SCORE AND ACHIEVEMENT SCORES AND I.Q. SCORES

<table>
<thead>
<tr>
<th>Stanford Achievement Test: Primary Battery</th>
<th>California Test of Mental Maturity 1957-S (Primary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word</td>
<td>Total I.Q.</td>
</tr>
<tr>
<td>Vocabularily</td>
<td>.50**</td>
</tr>
<tr>
<td>Paragraph</td>
<td>.48**</td>
</tr>
<tr>
<td>Word Read.</td>
<td>.56**</td>
</tr>
<tr>
<td>Study Skills</td>
<td>.68**</td>
</tr>
<tr>
<td>Spelling</td>
<td>.48**</td>
</tr>
<tr>
<td>Arithmetic</td>
<td>.38*</td>
</tr>
<tr>
<td>H-T-P Test</td>
<td>.45**</td>
</tr>
</tbody>
</table>

**Total Score**
- Elaboration: .41* .11 .34* .44** .20 .10 .27
- Human fig.: .32 .40* .25 .37* .27 .38* .36*
- Torrance: .23 .48** .47** .47** .46** .37* .35*
- Amended Torrance: .24 .59** .52** .48** .52** .44* .36*

*Significant, five per cent level
**Significant, one per cent level

amended Torrance score shows a marked relationship which is significant at the .01 per cent level with four subtests: paragraph (Torrance 0.48; amended 0.59), word reading (Torrance 0.47; amended 0.52), word study skills (Torrance 0.47; amended 0.48), and spelling (Torrance 0.46; amended 0.52). They also have a marked relationship with arithmetic which is significant at the five per cent level (Torrance 0.37; amended 0.44). However, both the Torrance psychological accessibility and the amended Torrance scores do not show a significant correlation with vocabulary.

There is some evidence from the indicated correlations of a positive relationship existing between the psychological openness and school achievement as measured by the subtests of the Stanford Achievement Test, Primary Battery. This relationship is a marked one except in the case of the vocabulary subtest which is a low positive relationship (0.23).

The House-Tree-Person test scores and the California Test of Mental Maturity. A positive and marked relationship between

7. The amended Torrance score is the original Torrance psychological accessibility score plus an additional one point each for the inclusion arm and hand.
the H-T-P total and subtest scores and the 1957-S form of the California Test of Mental Maturity appears to exist: human figure 0.36; Torrance 0.35; amended 0.36. (see Table XI) Only one subtest, elaboration (0.27), does not show a significant relationship at the five per cent level. The total H-T-P score and the total mental score show a positive relationship significant at the one per cent level (0.45).

The rank-order correlations between the California Test of Mental Maturity and the Stanford Achievement Test for the subjects in the study may be considered normal. Four of the correlations were in the plus .6 range: the CTMM correlation with vocabulary was 0.63, with paragraph 0.61, with word study 0.68, and with spelling 0.62. The other two subtests of the Stanford Achievement Test had slightly higher correlations with the CTMM. The word reading subtest had a 0.73 correlation with the CTMM, and the arithmetic subtest had a 0.90 correlation with the CTMM.
CHAPTER V

PLAY TOY TEST AS AN INDICATION OF PSYCHOLOGICAL OPENNESS

According to some authorities play can be a method of preparing for life as an adult. Through fantasy "the child partly rehearses for the future, partly develops his wishes, partly crystallizes and expresses his view of whatever segments of the adult reality world are open to his observation, or respond to, interact with, and stimulate him".¹ Play, then, becomes a method of revealing what the child has discovered about his world; it is a record of what he is open to within his framework of reference. As many have observed, however, children who are sharing adult community life are often much more oriented to reality than fantasy; they are not preparing for a role through play as much as living it. What a child's play can reveal is often his reaction to life around him.

I. PLAY TESTS IN LITERATURE

Play has been a method of observing children for some time. Virginia Axline points out that "play is the child's natural medium of self expression". When play was used as a basis for therapy, the play gave children an opportunity to work out their difficulties. Other individuals working with children have also used toys and play as a method of discovering more about the child himself. The instrument developed for use in this study was adapted from the work of several researchers who were using play as a means for observing young children. The work of Lois Barclay Murphy, Roger Barker, Tamara Dembo, Kurt Lewin, Charlotte Buhler, Maxine Schoggen, and Louis S. Barker contributed to the method of using play with toys for observation and development of a scoring system for the play records.

Miniature life toys. Lois Barclay Murphy and her associates developed one play toy test for use with pre-school children: the Miniature Life Toys. This portable collection of small toys may be used in any setting where the room is quiet and free from interruption. (See Appendix A for the list of toys used.) The toys are in piles or boxes, and they are presented to the child in a random arrangement.

They are usually in a broad circle about five feet in diameter so that the child may reach them without moving.

Upon entering the room, the child is told "Here are lots of toys for you to play with. You may do anything you like with them." During the child's play, the experimenter records the behavior and the words of the child. He makes as limited responses as possible to the child's questions. The experimenter can follow leads offered by the child, however, in a non-directive manner. He can encourage the child to respond verbally by phrases such as "Tell me about it." 3

The behavior of pre-school children with toys shows variety when they are compared with each other. 4 Some of the children were selective in their choice while others forced themselves to use all available toys. Selection was felt to relate to other aspects of the child's personality that had been discovered by other methods of observation.

The examiner noted the child's "choices, repetitions, rejections, and persistent clinging to certain toys". This notation was the beginning of the play session's analysis. Control was one thing considered to be expressed through the selection or rejection of a toy.

4. Ibid., p. 35.
All aspects of the culture may influence the child's control, organization and structure making.  

The materials were considered to lend themselves to analysis from numerous points of view and within the "concepts of different frameworks". Murphy and her associates refused to develop a rigid scoring system for the Miniature Life Toys on the basis that the preschool child's concepts are more nearly related to his own experiences than those of the older child who has been more influenced by the culture. Predetermined categories were considered to increase the possibility of missing what meaning the child had demonstrated. They found it best to inspect the play record for information which was then integrated with other facts known about the child. The suggested analysis of the Miniature Life Toys is an evaluation by the examiner covering the child's responses and actions as recorded: it is general and subjective in nature.

**Play and frustration.** During a study of frustration and regression in children, Barker, Dembo and Lewin constructed an experiment where thirty children between two and five years of age were allowed to play with standardized toys in a normal situation and

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then in one where frustration was present. They played for one half hour on two different days. On the second day nicer toys than the ones they were playing with were revealed behind a barrier in the specially equipped experiment room. The children could see the toys but could not obtain them. All behavior during the two periods was recorded. 7

The effect of frustration was measured by the increase or decrease in the child's constructiveness during the play. Constructiveness was used to mean "the degree of creativeness, elaborateness, or complexity of an activity". 8 For analysis of the play, they developed a scale of constructiveness which ranged from two to eight. The scale contained superficial examination or inadequate use of the toy at level two or both. Movement from one spot to another and primitive but obvious use of the toy was the essential element of level three although a simple statement of the problem could also be considered at this point. At level four the play involved a more complicated toy manipulation and the solution of simple problems. Imagination on an undeveloped level and complicated and elaborate manipulation entered


8. Ibid., p. 102.
the picture at level five. When the imagination was used appropriately on a developed level, the child was considered to be operating at level six where toys could also be used for other things. At level seven the play had meaning but a single toy was only a part of a larger setting. The highest level of play, eight, contained the classification of great originality. Consideration of the play records by this scale of constructiveness gave an excellent indication of the frustration present on the second day where play constructiveness was usually lower. The measure of constructiveness obtained was not necessarily considered to be the maximum possible even in the non-frustrating situation since constructiveness of individual behavior revolves around the proportion of the total personality utilized which is in turn dependent upon the potency of the situation for the individual. 9 The scale was a measure of the involvement and use of the toys in the situation.

**World Test by Charlotte Buhler.** By allowing children to play with a set of toy materials containing either 160 or 300 elements for thirty minutes, Charlotte Buhler and her associates evaluate the world's developed with these toys in either a qualitative fashion by interpretation of content or a quantitative manner by interpretation of the structures. These miniature toys represent houses, trees, fences, fences.

cars, people, animals, and other objects found in the world. The box containing the elements in separate compartments are placed before the subject, and he is told

"See all these things. You may play with them and build something with them here on the floor. You may use as many as you like. Here are houses, trees, fences, people, soldiers, animals, cars" Call the child's attention to the other objects by saying, "and here you have a church, a prison, a school, fire engines, boats, airplanes, tanks, cannon, wild and tame animals. Here you also have grass, a lake and a river if you want them. Now you may play." 10

The examiner records what the subject does during the play and makes a sketch after the play is completed.

The studies using this test report both developmental and clinical data. They often found that worlds which were too small, too unrealistic or schematic indicated mental and sometimes emotional immaturity. The size of the world and the number and type of elements used were an important consideration. The environmental adjustment of the children examined in relation to their test construction was validated by comparison of test reports with teacher judgments.

There were five ways of classifying the constructions which indicated some emotional disturbance according to the analysis. Signs

were used to indicate the constructions labeled aggressive world, empty world, rigid world, and distorted world (which could be closed, rigid, or disarranged). In the cases studied, the normal children above seven never had more than one symptom, and the symptom was never disarrangement or exclusion of people. The children with "maladjustment in either social or self relationships expressed aggression, or produced empty worlds, and a few made one distortion in organization." This test was considered an excellent method of evaluating quickly a child and a good introduction into therapy. 11

The behavior episode. Although Charlotte Buhler's World Toy Test, Lois Barclay Murphy's Miniature Life Toys, Dembo and Lewin's study of play and constructiveness under frustrating conditions were sources for ideas regarding the test construction and scoring, they were not the entire background. One other discussion of behavior was necessary for the formation of the scoring system of the play test. M. Schoggen, L. Barker, and R. Barker's concern with the episode in the behavior stream of children's actions was necessary for the scoring manual but not for the selection of items or the form of the play toy test. The episode, as a unit of the behavior stream, was found in free play situations as well as in more

structured school and home situations. They classified their records under the following behavior setting categories: variety School Academic Classes, School Music Classes, School Physical Education Classes and Outdoor Athletic Contests, Open Spaces and Home, Outdoors, Restaurants and Taverns, Religious Services, and Social Cultural Meetings.  

The behavior episode is defined by three criteria. First, the behavior must be constant. This constancy of behavior episode and even the identification of the episode, requires the person to discern the goal toward which he is moving. The direction of the behavior episode is dependent upon the total amount of the behavior stream segment under consideration. (The segment cannot include too short a unit like opening the door to get the paper or too long a unit such as getting an education.) The last characteristic is that the entire episode must be stronger than any of its parts. If the part of the episode equals the whole, then the part itself is a separate episode. Or if the potency of a part is equal to or greater than the whole, then it takes precedence.

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13. Ibid., pp. 161-162.
Schoggen, Barker, and Barker used the records of American children from the Midwest and English children from Yoredale in academic classes at school and a variety of other behavior settings for a study of structural differences in the behavior stream of the two groups. Children in one group were matched with children in the other by their own characteristics, their town, and their behavior settings. This study of the episode differences in the behavior stream produced the suggestion that differences were few, but the differences had their origin most often in the Midwest child and the Yoredale environment when they did occur.

Summary. Four sources of information were the foundation of a method to use play as a means for observing young children. The first source, Lois Barclay Murphy, used a specific list of toys in a play observation. The child's reactions were analyzed and the information integrated with other facts known about the child. A quantitative scoring system was not established.

The second piece of information was supplied by Barker, Dembo, and Lewin who used play as a means for observing frustration introduced in an experimental situation. They developed a scale of constructiveness for use in measuring the play.

Charlotte Buhler, the third source, developed a toy test which is used for evaluating a child and introducing him to therapy in a
clinical situation. In contrast to the Murphy test, the toys were standardized, and there is a quantitative scoring system. She also introduces the concepts of rigid and closed play worlds.

The last contribution was by M. Schoggen, L. Barker, and R. Barker who considered the episode as a part of the behavior stream of children's actions in an American and in a British community. Their concept of an episode is integrated with the Barker, Dembo and Lewin scale of levels of constructiveness for the present study.

II. ADAPTATION OF PLAY TOY TEST IDEAS

A decision was made to develop a toy test based upon the Lois Murphy list of toys.\(^\text{14}\) The test was to be used in a school situation with normal children. It was not to be considered in any way a clinical instrument, but it was to be investigated as a potential tool for the teacher to use in discovering how an individual child sees himself and his surrounding world.

In a scoring, the reference source was Barker, Dembo, and Lewin's scale of constructiveness. It was used as a model for the construction of manipulation and episode levels which may be considered divisions on a continuum of constructiveness. Schoggen,

\(^{14}\) See Appendix A.
Barker, and Barker's definition of an episode was essential for the development of a dividing point between the manipulation and episode levels. The manual for scoring the play sessions was as follows:

**Directions for Scoring Play Sessions**

Each play session record will be scored for two levels of play: manipulation and episode. The first level, manipulation, is the lower level and may occur as a part of a total episode pattern. All elements of manipulation, however, will be scored separately from any consideration of episode play. A second scoring of the play session will list the number and type of episodes found in the play. Each type of episode and manipulation level will be given a weighted score. Every child will have a manipulation, an episode, and a combined total manipulation and episode weighted score. The three scores for each individual will be considered separately.

**Part I: Scoring for Manipulation Level**

Manipulation defined:

The child directs his attention towards an object, and the result of this attention is a response. The response may be in the form of a direct action or a verbal response.

**Manipulation Level I: Simple Manipulation**

The play action is the direction of attention towards an object in any way and may include superficial examination, exploration, and
simple movement. The simple movement of the object may include the placement of an object in a new position but not grouping in a definite pattern of a number of objects.

Examples:

The boy goes over and picks up a house and looks at it.
The boy runs a car out and back.
The boy puts a house out and then a car by it.
The boy takes an animal (or several animals) from the pile and sets it by the barn. (Setting objects out cannot be considered grouping of a patterned nature.)
The boy took the object apart but did not do anything with it. (i.e., the truck, the house, the tree, etc.)
The boy put something inside a building. (And a decision about what a building is does not count as verbalization.)

Manipulation Level II. **Manipulation with Either Verbal Association or Play**

**Part A: Verbal Association**

Only voluntary verbal associations will be counted as manipulation at this level. Although verbal association may occur in combination with other non-verbal manipulation, the entire instance will be counted here.

**Type I: Informational Association About the World**
a. **Acquired Knowledge**

Example: As the boy picked up the camel he said, "Camels live in the desert." These statements of fact may also include mistaken ideas! About corn crib a child said, "It's a little bathroom, ain't it?" "Know cause it's little."

b. **Current Discrimination**

About such things as size, weight, color. (These discriminations can include mistaken ideas.) Example: The boy picked up the metal garage and said, "It's heavy." The evaluation of the toy would fall in this category: there were diapers on some of the children in the toys therefore they were not school children according to one child.

**Type II: Imagination or Fantasy Concerning the Object**

At this level, the child only talks about what the toys are doing. There is no proof of action or sequence which would often make the action level one of the episode.

The verbal positioning of an object would place it at this classification such as about a toy the child said, "Gonna stay on one side."

**Type III: Personal Associations with both Past and Present**

Example: "My cousin has a Suzie Smart like this," the little girl said as she handled the doll with glasses. The object itself can bring forth these associations.
Part B: Manipulation with Play

In this case the manipulation indicates some sort of attribute of the object. This play is nonverbal. It is usually solution of construction without a goal.

Example: The boy set all the wild animals together (extensive setting up)

The child selects an object for use and puts it into use. (i.e., corn crib for a pig house and puts a pig into it.)

The boy ran the car around the area for a minute. Or the boy ran the car around three or four objects. The boy ran several cars out and around objects.

The boy took the windows out of the house and the shutters off and then put them back in.

The boy used the truck to carry trees from one place to another.

He took the truck apart and used it.

He used the truck to carry an object to position. Nothing was done with it.

Manipulation Level III: Manipulation with Extensive Play or Grouping

The play action contains no discernible goal but it is more extensive in its scope. A goal cannot be assumed just because an action looks like it might have a point.
At this level, extensive grouping of objects would occur, and an object might be played with for a long length of time in a great variety of ways. The play might be described as random play on a large scale. And it can include lower levels of manipulation but it does not have to do so.

Examples: The boy put like farm animals together in a deliberate grouping pattern. The child had a pattern of extensive setting out of houses, people, trees, etc., in an evident pattern but no play.

Weighted Scoring for Manipulation Levels: Each instance of play at Levels I, II, and III will be given the numerical score of 1, 2, and 3 respectively.

Part II: Scoring for Episode Levels

Episode:

Following Schoggen and Barker's definition of a behavior episode a play episode must contain the following three elements or criteria: have direction, have a goal which attains completion, and have total consistency. The feature which moves a play sequence from Level III of manipulation to Level I of episode is that of a goal. The goal will not necessarily be evident from a single action but may be apparent from the total pattern of the play action or sequence.

The quality of the episode in terms of the relationships
involved in the play and the concepts demonstrated determine the episode level assigned to the play. For example, an episode containing only manipulative elements involved in setting up a preliminary stage or setting for future play is certainly not as significant an episode as one which involves the solution of a problem or other evidence of imagination. The time taken for an episode to occur bears no direct relationship to its level assignment.

**Episode Level I: Manipulation with a Goal**

This type of episode is the simplest and is a connecting link between manipulation and a more developed episode. It must be pointed out, however, that a goal cannot be assumed just because an action looks like it might have a point. The elements making up this episode should be basically manipulative in nature, but their combined effort will reveal a plan or goal. Solicited information can be used to determine the existence of a goal.

**Example:** The boy built an enclosure from the fence pieces and used the enclosure for an animal compound. (This is a simple relationship of use.)

The boy set up a gas station and pumps for use with a car. He then ran the car over to the pumps. (This can be considered selection for use with an objective in mind.)

The child said of the girl with the pail, "She's picking dirt up
so can move tree." She said this as she moved the figure around by the alder tree. (In this case, there is fantasy which furnishes the goals and makes verbal manipulation into episode one.)

He took the car carrier truck out and put the plastic pumps on it and moved them. He took the train station top off and turned it around. He then put the pumps on either side of the train station.

Examples of play situations not at this level: Boy puts fence pieces together but does not use them for a purpose. He may work at the task for quite a while but eventually stops or gives up. He might have had a purpose in the beginning, but it is not evident in the final result.

(Manipulation Level II)

Boy sets out gas station and gas pump along with other buildings. (The action is simple manipulation but may be a part of a higher manipulation or episode level.)

Episode Level II: Manipulation, Goal, and Relationships in a Pattern

Manipulation of toys with play and a goal is essential to this level, but the total episode must show relationships and a point as well. At this level several manipulation levels and episodes of a level
I type might be combined in various ways to form a larger pattern. The organization of the arrangement may be loosely tied together.

At this level the child will be solving problems of imaginary play situations or problems connected with construction of the setting from the available elements. It would not be extremely creative or unique. It could considered as extensive construction plus other elements.

Examples: The child constructs a farm or ranch setting and then uses the setting as the basis for action fantasy between the animals.

Episode Level III: High Level of Constructive Episode of Creativity

This episode level is the basis under which smaller and/or lower levels of manipulation may be organized in a highly creative manner. Creativity in this instance is defined as an extremely unique response. At this level the greatest constructiveness is occurring. Constructiveness here refers "to the degree of creativeness, elaborateness, or complexity of an activity." 15

Weighted Scoring for Episode Levels: Each instance of play at levels I, II, and III, will be given the numerical score of 4, 5, and 6 respectively.

From the above manual, it is possible to score each available play record in a quantitative fashion. The scores represent a relationship of the child to his environment in a progression from a use of simple actions and reactions to complex goals and actions in play.

Administration. The same thirty children who had previously been given the adapted H-T-P test discussed in chapters three and four were given the Play Toy Test developed for this study.

The test was administered individually to each child in the same manner. Every child found the toys to be used in the test set up in the arrangement indicated by figure 14. Before starting the test each child was told by the examiner, "Here are lots of toys for you to play with. You may do anything you like with them." The child was assured, if he asked, that the examiner would tell him when he had to stop; in most cases, the child never bothered about time limits. If the child stated that he was through before the time was up and wanted to go back to his room, he was allowed to do so. The maximum time allowed for play with the toys was forty minutes.

While the child played, he was encouraged to talk about what
<table>
<thead>
<tr>
<th>Farm units</th>
<th>Houses</th>
<th>Trees</th>
<th>Buildings</th>
<th>Cars</th>
<th>Dolls</th>
<th>Planes</th>
</tr>
</thead>
<tbody>
<tr>
<td>sheds red barn</td>
<td>split solid fences</td>
<td>greenhouse</td>
<td>church factory gas station</td>
<td>church</td>
<td>police chain train station</td>
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<tr>
<td>brown barn</td>
<td>trailer ranch signs</td>
<td>cape cod</td>
<td>school market</td>
<td></td>
<td></td>
<td>church</td>
</tr>
</tbody>
</table>

**Wild Animals**

Small HO objects in box

**Figure 14**

Placement of Toys
he was doing. He was not required to talk if he did not want to, but his lack of spontaneous verbal communication was noted. All the children were given freedom of movement with the toys in the available area. A part of the teachers' workroom or the school cafeteria was used for the test. There was some but not a great deal of disturbance.

The examiner kept a written record of the child's sequential actions during the play session and his comments. The record was as complete as possible. A copy of all records may be found in Appendix E.

**III. DISCUSSION OF RESULTS**

Reliability. The reliability of the scoring was checked by a second person who selected ten play records from the total group; the selection was random. After the checker scored the drawings by the manual, a point check of scoring differences was made and the percentage of agreement was found between the two scorers for the manipulation, the episode, and the total weighted scores. Both the checker and the examiner reviewed the manual with care before the checking began. Some of the errors were due to scoring omissions on the part of one or the other person scoring the record. Tables XII, XIII, and XIV show the percentage of agreement between
### TABLE XII

**PERCENTAGE OF ITEM AGREEMENT IN SCORING**

**THE PLAY MANIPULATION**

<table>
<thead>
<tr>
<th>Student Number</th>
<th>Agreement</th>
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<td>4</td>
<td>20</td>
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<td>27</td>
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<td><strong>44</strong></td>
<td><strong>268</strong></td>
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</tbody>
</table>

The percentage of agreement is 83.58 per cent between scorers.

### TABLE XIII

**PERCENTAGE OF ITEM AGREEMENT IN SCORING**

**THE PLAY EPISODE**

<table>
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<tr>
<th>Student Number</th>
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</tr>
<tr>
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<td>2</td>
</tr>
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<td><strong>Total</strong></td>
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<td><strong>2</strong></td>
<td><strong>22</strong></td>
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</tbody>
</table>

The percentage of agreement is 90.91 per cent between scorers.
TABLE XIV

PERCENTAGE OF ITEM AGREEMENT IN SCORING

THE TOTAL SCORE

<table>
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<tr>
<th>Subject Number</th>
<th>Agreement</th>
<th>Disagreement</th>
<th>Total</th>
</tr>
</thead>
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</tr>
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<td>1</td>
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<tr>
<td>15</td>
<td>26</td>
<td>3</td>
<td>29</td>
</tr>
</tbody>
</table>

244 46 290

The percentage of agreement is 84.14 per cent between scorers.

Quantitative Scoring Analysis. After scoring each play record, the total counts at each level were entered in Tables XV and XVI where the number of incidents at each level are recorded as well as the weighted score for the individual. The median manipulation weighted score was 53.5 but the range of scores was from ten to 113. (see Table XV). There was a five point difference between the boys' and the girls' median score. Three boys had scores of 51 which was their median, and two girls had scores of 56 which was their median. The difference was not statistically significant: \[ X^2 (df = 1) = 1.292. \]
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<th>(3 pts) Level III</th>
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## TABLE XVI

EPISODE COUNT OF INCIDENTS AND WEIGHTED SCORE
(and Combined Total Episode and Manipulation Weighted Score)

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<th>Subject Number and Sex</th>
<th>Age in Months</th>
<th>Level I (4 pts)</th>
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</table>
The median episode weighted score for the entire group was 6.5. The range of scores for the entire group was from zero to 62: (see Table XVI). The girls had a median score of five while the boys' median score was eight. Five boys had episode scores of eight. The difference between the medians for the two sexes was not statistically significant: $X^2(\text{df} = 1) = 0.436$.

When the total episode and the total manipulation weighted scores were combined to form a single added score, the median for the entire thirty students was 60: two students had scores of 60. The scores ranged from a low of 14 to a high of 168. (see Table XVI) When the total weighted episode and manipulation scores were combined and examined on the basis of sex, there was again a difference in favor of girls. The girls' median was 62 while the boys' median was 59. The difference between the medians was not significant: $X^2(\text{df} = 1) = 0.436$.

When the Play Toy Test was compared to other measures by a rank-order correlation method, a significant positive relationship was not found with the H-T-P test used, the Stanford Achievement Test Primary Battery, or the California Test of Mental Maturity. Table XVII shows these correlations.

The House-Tree-Person Total Score (.22) and the Torrance Subtest Score (.21) were low positive scores when correlated with
### TABLE XVII
CORRELATION OF PLAY TEST WITH OTHER MEASURES

<table>
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<tr>
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<th>Total Episode Weighted Score</th>
<th>Total Score (Elab. and Manip.)</th>
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</table>

*5% level of significance
**1% level of significance
the episode weighted scores. The rest of the correlations of the manipulation, the episode and the total weighted scores with the total and the subtest scores of the H-T-P test were either zero or essentially zero.

Some negative correlations significantly different from zero were obtained between the Play Toy Test and the Stanford Achievement Test Primary Battery. At the one per cent level word reading (- .45) was negatively correlated to the manipulation weighted score. At the five per cent level of significance the paragraph (- .39), and the arithmetic (- .36) subtests were negatively correlated to the manipulation weighted scores. Both paragraph (- .33) and word reading (- .33) scores were also negatively correlated with the Play Toy Test total weighted score at the five per cent level. All other correlations were zero or nearly zero.

The California Test of Mental Maturity showed negative or zero correlations with the Play Toy Test subscores. The correlations were not significant.

**Qualitative analysis and comparison of the Play Toy Test.** Some of the children showed the same limited vision and actions during the Play Toy Test as in their H-T-P drawings. A comparison of the H-T-P drawings with the Play Toy records found in Appendix E can show the similarities and differences in individual performance. The records of
the two tests point out the fact that more is revealed about some indi-
viduals by one or the other test.

A similarity of test results might be considered in the case of
Subject 15 who showed a great deal of restriction both in his play toy
test and his H-T-P drawing. The subject's drawing depicts a person
with out arms which may be interpreted as a restraint upon an individ-
ual's interaction with the world. The drawing does not indicate com-
plete restriction since there is access to the house itself. The subject's
play record follows the same pattern. He has an extremely high sim-
ple manipulation (level I) score and several instances of manipulation
at the more complicated level II which requires extensive play or some
verbal addition to the manipulation. There were two incidents which
could be counted as episodes having an easily attainable goal, but there
was no over-all pattern to the play. The selection from the play
record indicates the explorative, manipulative nature of his play:

He went over to the gorilla and the hippopotamus and took them
out of the pile.
He touched the train platform.
He took more wild animals out and more farm people.
He put the planes in a row.
He took the boat out next.
Then he set the trees out. The trees were put near the farm
people. And when the examiner asked about the people, he
said they were going into the woods.
He set up the fence and the trees.
He moved the greenhouse out and set up some poles.

As the diagram accompanying play record 15 indicates, there
was not a definite plan or goal to the subject's actions. He simply was
attracted to an object and moved it out. Only once did he make a
verbal statement about his actions; it was solicited by the examiner.
There might have been imagination and fantasy in his play as well as
goals and plans, but he did not appear to feel free enough to communi-
cate them to the examiner.

Subject's 23 play record is limited almost exclusively to simple
manipulation and the slightly more complicated manipulation of Level II.
There were even some cases of the extensive manipulation at Level III,
but no episodes were found in his play. This little boy jumped from
one thing to another and even when he included some verbal fantasy
about an object, he did not expand upon the point or continue with
actions which would turn the verbal manipulation into an episode con­
taining a goal. The following example from the middle of the play
record will demonstrate the subject's inability to move beyond levels
of manipulation:

He told the examiner that he had a whole bunch of farm toys at
home.
He took the pump and pickup out. He took a number of cars
out: racers, jeep, blue car, tractor, and construction truck.
He went back to the red barn and took it out. He put a cow
in it and it was a "mother bull".
He put the alder trees in front of the school which he had
moved out. He lined up cars by the front of the school. "A
church" was his explanation of the building's use.
He picked up the gas station and added it to the group of
buildings he was using.
He continued to take out more cars: van, car carrier and
tractor.
He was not lacking in either verbal communication or interest, but his ideas were limited. He apparently could not elaborate upon a point just as he did not seem to feel free to elaborate in his extremely restricted drawing of a H-T-P (see figure 1 in chapter 4). There were, however, possible instances of aggression where the subject actively expressed some hostility as evidenced by the following notes about the play:

He went back to shoving the cars around again and said, "Everyone having a wreck." The examiner asked him what happened when people had wrecks. He said, "Dies."

Shortly before this part of the play sequence, he had great pleasure sending cars across the room into objects. He tried to make the cars hit objects, lost interest in the procedure, and went to something else before coming back to the above situation.

As opposed to the two above cases where the subjects were limited by either self-imposed restrictions or lack of ability to move beyond extensive manipulation to higher levels of goal directed play, Subject 4's record shows a play action limited by a single idea or concept. He constructed the place in Texas where his family was going this summer; he either could not or did not want to go beyond this single idea. His total score is limited by this single concept which was not expanded or used after construction. After completion of the site, he left before his time was up. During the construction of his farm, he did not speak unless he was spoken to and then he would only answer the specific question asked. This record was bound by a goal
and a plan, and it could be considered at least equal in quality to higher scores which involved only manipulation. The quality of his play record might be considered equal to his average H-T-P drawing.

Another boy, Subject 20, above the median total score on his play record was also slightly above average on his drawing of a H-T-P. He shows fantasy in play, but the play includes or is based upon potential real life situations. The following example will illustrate a situation which might occur:

He reset the poles. He counted one row to be sure that it had the same number as the other. He decided that the signs should go out with the poles and moved the telephone poles. He decided that a man was walking by these poles and singing. He was going to the factory which he had set out nearby. He had the little policeman direct the traffic for the walker.

This incident represents a simple episode which involved both simple and somewhat complicated play manipulation as well as verbal manipulation. It may indicate a child who can incorporate ideas from the world around him into his play in a positive manner.

The same child, Subject 20, was also able to move nearer to pure fantasy, but it was still rather realistic in nature. He could set up the continent of Africa and use it as a place to put the animals living there. He was able to adapt the toys to produce his realistic fantasy settings such as when he picked up a man and decided he worked at an airport.
He said, "Can't find an airport. Well, I'll make one." He decided the airport was the space under a table in the room.

This ability to use an available object to represent something else was not present in all the children.

Another subject expressing superior or high average scores on both the H-T-P drawing and the Play Toy Test was a young girl in the average achievement group, Subject 12. This child was able to move beyond the simple requirements of the situation in both cases. In the play situation, she developed incidents which had goals and were connected together into a larger over-all pattern. One example, was the play where she had the dolls in houses and then selected one doll to be the mother and to go get the others from the houses. Another example of elaborate constructiveness and goal activity in play concerned one of the dolls making a city:

She picked up the mother doll and said, "Just like a Barbie doll but she's not." She had one at home. "My Mom makes her clothes and I do too."

She guessed that she could play with her. She had the mother carrying the greenhouse around and arranging a city. She was going to take the flowers out of the greenhouse and put them around by the houses. She decided not to do so and put the flowers back in the greenhouse. She said, "Mother won't let her have them."

At this point she moved the greenhouse by the trailer.

One might also consider the repression and restrictions involved when the doll could not have the flowers. She also had another instance in her play session where a certain amount of rigidity might be considered
to appear. Toward the end of the play, she again looked at the greenhouse:

She again went to the greenhouse. She took the flowers out. She told the examiner that the flowers were "put in the wrong way". When the examiner asked why, she said, "that row should be there and that one there." She rearranged the flowers.

In this case, she could not leave the toy in a manner that she considered wrong. This child who apparently showed great flexibility and some fantasy in her play apparently had times where repression and rigidity showed through in play with toys but not in drawing..

Another boy (Subject 5) showing only a slightly above average total Play Score had an extremely rich record upon investigation. This play record has the only potentially creative play incident. In solving a construction problem, the solution found bordered upon the creative. One part of the farm unit, a corn crib, disturbed the boy. He could not figure out a use for it. At last he decided that it was a bird house, but he could not find a bird to fit it. The solution came when he "Can see by looks, it's a bird house," he said. He solved his problem by making it a bird house for wild birds. He set the corn crib on top of two telephone poles.

The subject also had other instances of thought and imagination in his play record. For instance, he did not just construct an enclosure out of fence pieces and put a house inside it. He felt the need for a gate or an entrance. There were no gates among the available toy
pieces, but he solved the problem by making his own gate. He used one of the fence pieces in such a way that he had a gate which would open and close. An opening for accessibility to the house was made in spite of the existing conditions.

In spite of the fantasy and involvement of the child with the toys, there was some evidence of possible restriction. The restriction was a self-imposed variety containing an element of either fear or the need for realism. The scope and rigidity of the child's cognitive map may also be indicated by an incident like that of the train track:

He asked what the train station sign said and the examiner told him. "Do you have any tracks?" he asked. The examiner said no and suggested that he use something else. He said he could use the fence pieces and he did. Then he said, "Too chicken." The examiner asked why and he said, "Because I'm scared I am going to break them." The examiner told him not to worry about it, but he said again, "still too chicken." (the last statement was said under his breath.) Even though he had reservations he started to set up the fence pieces as tracks. He picked up the train from the pile and disconnected it. "This is the end of the train." He used the end; he placed it on the fence tracks. He said, "It won't work; fence too small." The fence-tracks became a ladder placed against the side of the shelves in the workroom. Then it became an airplane, and at last he was through with it. (He verbalized these ideas.) He took the pieces apart and put them back in the pile.

In some way the subject did not feel free to use the fence pieces as train tracks but he could involve them in other elements of fantasy.

In another case a child with a very low H-T-P total score (see figure 4) comes out with an above average total play score. Subject 2's
total play test score was four points above subject 5's score which was discussed previously. It does not reveal the richness of content, the fantasy, or the openness to ideas that Subject 5 did. This record shows almost an entire forty minutes spent in manipulation. The subject's only scored episodes involved two instances of making enclosures with the fence pieces and using these enclosures for the containment of animals and one toy man. He put items in the houses like he did with the enclosures, but he did not verbally indicate any reasons for doing so. Almost all the buildings were used in their original positions; a few buildings were moved slightly but not much. It was almost as if he could not visualize a change in the setting. Perhaps the mass of toys and their newness put a restraint upon him.

In contrast to the above case, Subject 22 is a girl who had a very average H-T-P total score but the highest total play test score. This girl's record shows a complex play period rich in imagination and verbalized goals. She used the animals, the dolls, figures of people, and some of the farm pieces, but only one of the houses was included at the end of the session. Almost all the other toy elements were incidental to the play with the animals. For example, the farm unit and the people were brought in about half way through the play period when she took the hippopotamus away from the animals that she was playing with and told the examiner that the strongest live away. She
had the hippopotamus go over to the farm unit; he was going over to kill. She said, "Want the owners cause starving" as she moved out the little farm figure of the hay man for the situation. This was the first instance of using a human figure during the play, and it contained a potential involvement of violence and fantasy involving violence. The violence was somewhat beyond the enactments involving aggression and hostility found in the toy play records of the rest of the children.

She picked up one of the sheep and said it was fat. "Woo, ya ya. This gorilla is gonna get him. All the others (sheep) ran away." She had the gorilla grab him and run away. She decided to go back and try to get help from the horse. The horse stomped on the gorilla. She said the horse is a little sad because the gorilla is dead. The lions came over and saw the fight between the gorilla and horse. The lions now eat the gorilla. "One guy kills another guy, and they eat the guy who is killed."

Perhaps she was only expressing or acting out a rather vivid imagination, and the other children might not have felt free to do so in a new situation.

Later in the record she used the lions again. She had the farmer give raw meat to the lions and make friends with them. Then towards the end of her play, she had the baby lion and the baby doll play together.

She decided the baby and the baby lion could play together. "At first the baby lion didn't like him but now they are friends," she said. A new alligator came to get the baby and the king of beasts heard it. He came over and saved the baby and killed the
The child seemed to be trying to make scenes of violence socially acceptable to herself and others, especially during the second part of her play.

The boy, Subject 28, with the second highest play toy test total score also has a low H-T-P total score. (The house shows some accessibility and the tree detailed elaboration, but the figure is restricted by a lack of arms.) The restriction of the drawing does not show up in the total play record score which involves many instances of manipulation. There were many first level episodes, but they were usually isolated and not connected together in a pattern. Only by looking over the entire record can one see a higher level episode. At points throughout the record, the subject used the wild animals in building a jungle. In spite of interruptions he came back to this theme many times and finally completed it. The jungle theme once again allowed opportunity for acceptable aggression on the part of the animals. The dogs could go after the tigers, and the lion climbed the tree in order to jump on the gorilla. When the lion did jump on the gorilla there was a fight, but it ended in the lion going back to his mother. The aggressive incident is rather restrained, and the majority of the record is simply play with one object and then another. Incidents with a goal, except for those related to the jungle theme,
were isolated and unconnected.

The reading of the Play Toy Test Records indicates the inadequacies of the play test numerical scores. A total score cannot indicate the proportion of manipulative incidents to episode incidents in the play. Even the breakdown of scores into the manipulative and episode scores cannot give the entire picture: the levels are not shown although a weighting is given to the levels which influences the final score. However, one child might be very active and perform many instances of simple manipulation while another played with the toys at a higher level of manipulation but had fewer instances of play in his record. Sheer numbers at the first level could equal or surpass in score a play at the higher level. It is important to see what the child can accomplish at any level. Equally important is his method of attacking the problem, and his freedom from internal and external restraint while he plays. A quantitative score can only tell so much about a particular individual.

The usefulness of an instrument like the Play Toy Test lies in the observer's opportunity to watch the individual. In this way, it is a tool of sensitivity. What is observed can not be adequately indicated to others. The information can be used in the form of hypotheses about individual children which are important in classroom interaction.
CHAPTER VI

SUMMARY AND CONCLUSIONS

I. SUMMARY

Sensitivity to different aspects of a situation can be considered as one part of individual openness. The impressions absorbed must somehow be integrated with previously acquired knowledge and utilized by the individual in his reactions to the environment. Methods of assessing an individual's relationship and openness to his surroundings are extremely important.

The problem. The problem under consideration in the study was to identify how psychological openness in young children might be identified by tests. Which of the tests used would have the greatest potential value for the classroom teacher in discovering differences in psychological openness in young children? The two tests developed for consideration were the H-T-P adaptation and the Play Toy Test.

H-T-P Adaptation. In the original test developed by Buck, there were problems in scoring the H-T-P tests of children; the test was originated in a clinical situation. Both emotional and environmental factors interfered with the scoring of the children's drawings,
and children's age levels added another problem.

In the present study of psychological openness the H-T-P test was modified: the thirty children in the first grade were asked to draw a house, a tree, and a person on an 18 x 24 inch piece of paper. The children, who were randomly selected, had a maximum time of twenty minutes for drawing. The scoring in this modified test consisted of three sections: the E. Paul Torrance scoring for psychological accessibility using the house, the selection of points from the Goodenough scoring of a human figure drawing, and the tallying of additional items added to the drawing as an elaboration score.

The Torrance score of psychological accessibility was found to have a median of four in the subjects tested. There were only five drawings which contained common elements such as a door knocker which were unusual for this group.

The maximum score possible on the human figure subtest adapted from the Goodenough test was fourteen. The difference between the median scores for the girls and the boys was significant at the .01 level: the girls' median was nine and the boys' median was six. The children in the present study showed a low inclusion of hands and feet in their drawing of the figure. Only thirty per cent included the hands and only fifty percent included the feet.

The majority of the children in the study had a very low
elaboration score; the median for the group was only 4.5. Six children received scores of zero or one on the elaboration subtest. The highest score, however, was eleven.

The total H-T-P score was computed by adding the three subtest scores together. The girls had a median score of twenty and the boys had a median score of sixteen. The difference between the medians was significant at the .05 level.

When the H-T-P test scores were correlated with the children's results on the Stanford Achievement Test (Primary Battery), all the rank-order correlations obtained were positive and many times significant. In every case there was a significant correlation between the total H-T-P scores and the various subtest scores; the correlations ran from a low of 0.38 to a high of 0.68. The Torrance psychological accessibility scores had a significant correlation at the .01 level with paragraph (0.48), word reading (0.47), spelling (0.46), and word study skills (0.47). At the .05 level, it had a significant correlation with arithmetic (0.37).

The California Test of Mental Maturity (1957-S form) was also correlated by the rank-order method with the H-T-P test: total H-T-P (0.45), elaboration (0.27), human figure (0.36), Torrance (0.35), and amended Torrance (0.36). No significant correlation was found between the elaboration subtest (0.27) and the California Test of
Mental Maturity. The other correlations were significant at .05 level.

**Play Toy Test.** The play toy test used was derived from several sources. Lois Murphy's list of Miniature Life Toys was the primary source for selection of toys. The scoring system consisting of weighted scores for manipulative and episode play was also derived from several references.

The play toy test score as developed showed essentially zero or low positive correlations by the rank-order method with the H-T-P scores. When the play toy test scores were correlated with the Stanford Achievement subtest scores and the California Test of Mental Maturity, the correlations were either zero or low negative correlations. The three coefficients of correlation, however, between manipulation and the Stanford Achievement subtests of paragraph (-0.39), word reading (-0.45), and arithmetic (-0.36) are negative and significantly different from zero. The correlations are in line with the expectations of negative correlations between manipulation and school achievement requiring maturity.

**II. CONCLUSIONS**

The two tests developed to obtain responses from which individual openness in young children could be inferred seemed to reflect different things. For some individuals the pattern of action and
reaction observed in both tests was comparable, but for others, the pattern was different. It may be that some children are able to react to the problem posed by one situation in a positive fashion and thus furnish information about themselves. Others may not be able to respond to either task. Some children may respond to both problems. Of course, the differences in response to the two tests might also be due to artifacts inherent in the testing situation as well as in the tests themselves.

The quantitative score derived from the test administrations cannot be considered the entire story. Each of the tests can be used individually with other evidence to yield more information about the particular individual. The bits of information must be added to other available information in order to obtain any semblance of a total picture.

The significant and substantial positive correlations between the adapted H-T-P and the achievement and I.Q. scores for the group studied suggests its value for assessing a group's readiness and/or ability to do school work.

The negative coefficients of correlations between the Play Toy Test manipulation weighted score and the achievement subtests of paragraph (-.39), word reading (-0.45) and arithmetic (-.36) were significantly (.05 level) different from zero in the expected direction since these areas of school achievement require some maturity.
By the ease of administration and lack of ambiguity in scoring, the modified H-T-P test appears to have great potential value for the classroom teacher as a method for preliminary study of individual differences in psychological openness in young children. The Play Toy Test, however, has a potential which is not reflected in the adopted scoring system. It holds a promise for understanding the mode of children's operations both as individuals and as a group. There are some common modes of response among all children which the teacher can observe, but there are also individual reactions. The teacher can use the Play Toy Test to observe and gain understanding about the individual child in the classroom.

III. RECOMMENDATIONS

Future work on psychological openness in young children might consider three problems. The first problem encountered is the inadequate scoring system for the Play Toy Test. Additional use of the test would require the trying out of many scoring systems or scales. One example might be the use of a separate verbal scoring scale either alone or in combination with other scores. There are many alternatives to the scoring system used.

The relationship between psychological openness and both school achievement and I.Q. was explored. Other relationships need to be analyzed, discussed, and compared. Self-direction or peer
relations might be two additional possibilities for comparison and study.

The two tests compared and used in evaluating psychological openness may have the problem of obtaining reliability in repetition of responses for a particular individual from time to time. The repetition of responses in relation to maturation should be studied as the third problem for consideration. Here the researcher might both gain from and add to the available data. Individual case study and longitudinal study are recommended methods for studying the problem.
APPENDIX A

MINIATURE LIFE TOYS

Recommended list for Diagnostic Play Session in U. S. Urban and Suburban Areas. 1

Housekeeping Group:

Dolls.

Half a dozen women dolls, in different sorts of clothes, for "house" wear, "going to town" wear, "dress up" wear; one or two nude ones
Half a dozen men dolls, in work, sport, business clothes, and nude.
Four or more girl dolls of different sizes, in play, school and dress clothes
Four or more boy dolls of different sizes, in play, school and dress clothes
Half a dozen baby dolls of different sizes, nude and in creepers or nighties with bunting, baby blankets, etc.
Grandpa and grandma with grey hair and glasses.
Dolls in maid, doctor, nurse costumes
House, dog, cat, mouse

Furniture.

Sofa, 3 or 4 living room chairs, radio-TV, piano, lamp
Dining table and chairs, chest
Kitchen stove, sink, refrigerator, stool, washing machine ironing board
Bathroom tub, bowl, toilet, hamper
Four adult beds, chests, dresser with mirror, bedroom chairs

Several children's beds
Bassinet
Bathinette
Toilet chair
Perambulator
Crib
Playpen
Bottles with nipples

Town Toys.

Cars: 1 or 2 sedans, 1 taxi, 1 racer, 1 or 2 buses, 1 school bus
Trucks: moving van, garbage truck, general utility truck
Trains: 2 engines, cabooses, coal cars, with 7 or 8 train cars in different colors
Fire-engine with ladders
Planes: 2 to 4 planes of different sizes
Boats: motor boat, rowboat, ferry
People: 4 or more policemen, 4 or more firemen, 1 Santa Claus, men, ladies, children in shopping, strolling attitudes
Miscellaneous: park benches, trees, etc.; church, stores, hospital

Farm Toys and Animals.

Horses: 6 to 8 horses (rubber, metal or plastic) of different sizes
Cows: 6 to 8 cows of different sizes (calf to adult); 1 bull
Sheep: 4 to 6 pigs, small and adult size, 1 goat
Furry mice, squirrels, cats, dogs, rabbits
Equipment: adjustable plastic fence pieces
Farmer
Cowboys

Wild Animals.

1 or 2 monkeys 2 tigers
1 or 2 giraffes 2 lions
1 elephant 1 alligator
1 hippopotamus 5 snakes of different sizes
1 rhinoceros 1 turtle
1 bear
Soldiers and War Toys.

10 to 20 soldiers with different equipment and in attitudes, one or two of whom are broken
Navy men, marines, etc.
2 to 4 separate guns of appropriate size
Indians in war clothes
20 pieces of Lincoln logs in small, medium, and long sizes for forts.
APPENDIX B

PLAY TOY TEST

Public Buildings:

  church
  gas station (also gas pumps, esso sign)
  supermarket
  school
  factory
  5 and 10 chain store
  police station
  fire station
  railroad station

Houses (4)

Garage

Trailer

Railroad and street signs (24)

Telephone poles (12)

Planes (4)

Boat

Trees (19)
3 alder, 7 fir, 4 poplar, 4 tree-shrubs, 1 palm

Picket fence (24) pieces

People and dolls:

5 miniature people
4 farm people
4 dolls (2 women, 2 children)
2 babies

Farm unit

barn with silo
barn
farm buildings: shed, corn crib, dog house, chicken house

animals (72):

chicken cows, pigs, horses, sheep, dogs, ducks, geese, turkey, goats, cats

Zoo animals (30):

lions, camels, buffalo, reindeer, hippopotamus, elk, kangaroo, bear, gorilla, squirrel, tigers, penguin, stork, leopard, alligator

Cars (18):

tractors, racers, trucks, cars, jeep, ambulance

Train
APPENDIX C

DENNY DOODLEBUG PROBLEM

The conditions

Joe Doodlebug is a strange sort of imaginary bug. He can and cannot do the following things:

1. He can jump in only four different directions, north, south, east, and west. He cannot jump diagonally (e.g., southeast, northwest, etc.).
2. Once he starts in any direction, that is, north, south, east, or west, he must jump four times in that same direction before he can switch to another direction.
3. He can only jump, not crawl, fly, or walk.
4. He can only jump very large distances or very small distances, but not less than one inch per jump.
5. Joe cannot turn around.

The situation

Joe has been jumping all over the place getting some exercise when his master places a pile of food three feet directly west of him. Joe notices that the pile of food is a little larger than he. As soon as Joe sees all this food he stops dead in his tracks facing north. After all his exercise Joe is very hungry and wants to get the food as quickly as he possibly can. Joe examines the situation and then says, "Darn it, I'll have to jump four times to get the food."

The problem

Joe Doodlebug was a smart bug and he was dead right in his conclusion. Why do you suppose Joe Doodlebug had to take four jumps, no


2. Ibid., pp. 186-187.
more and no less, to reach the food? ³

The answer

The Doodlebug Problem is quite difficult to solve. The solution is as follows: at the moment Joe's master placed the food down, Joe had already jumped once to the east. He therefore has to jump sideways three times more to the east, and once sideways back to the west, landing on top of the food. He can now eat. Simple as it may be in retrospect, most subjects need help if they are to solve it within a 30-to 45-minute time limit. The reason it is so difficult to solve is that the subject must first overcome not one but three currently held beliefs, and replace them with three new ones. This is the analytic phase of the problem. But this is not all. Even if the subject overcomes and replaces all three beliefs with new ones, he still has work to do. He must then organize them together, or integrate them, into a new system. This is the synthesizing phase of the problem. ⁴

Beliefs to be overcome

1. The facing belief. In everyday life we have to face the food we are about to eat. But Joe does not have to face the food in order to eat it. He can land on top of it.

2. The direction belief. In everyday life we can change direction at will. But Joe is not able to do so because he is forever trapped facing north. Thus, the only way Joe can change direction is by jumping sideways and backwards.

3. The movement belief. When we wish to change direction in everyday life there is nothing to stop us from doing so immediately. But Joe's freedom of movement is restricted by the fact that once he moves in a particular direction -- north, south, east or west -- he has to continue four times in this direction before he can change it. Thus, when Joe stops to survey the situation at the moment his master places the food down three feet west of him, he may or may not necessarily be a free agent. He may have stopped in the middle of a sequence of jumps rather than at the end of a sequence. Many subjects have difficulty because they assume that Joe is at the end rather than possibly in the middle of a sequence. ⁵

³ Ibid., p. 187.
⁴ Ibid., p. 173.
⁵ Ibid., pp. 172-173.
The three hints:

1. **The facing belief.** "I'm going to give you a hint: Joe does not have to face the food in order to eat it. (Repeat hint.) Ok, I'll give you five minutes more."

2. **The direction belief.** "I'll give you another hint: Joe can jump sideways and backwards as well as forwards. (Repeat hint.) I'll give you five minutes more."

3. **The movement belief.** "Let's read the problem again. (The experimenter and subject reread the problem.) Now here is the last hint: Joe was moving east when the food was presented. (Repeat hint.) You have five more minutes."*6*

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*6. Ibid., pp. 187-188.*
APPENDIX D

HOUSE-TREE-PERSON DRAWINGS FOR THE REMAINDER OF THE SUBJECTS IN THE STUDY

Figure 15
Drawing of Subject 1
Figure 16
Drawing of Subject 5

Figure 17
Drawing of Subject 7
Figure 18
Drawing of Subject 10

Figure 19
Drawing of Subject 11
Figure 20
Drawing of Subject 12

Figure 21
Drawing of Subject 13
Figure 22
Drawing of Subject 14

Figure 23
Drawing of Subject 17
Figure 24
Drawing of Subject 18

Figure 25
Drawing of Subject 19
Figure 26
Drawing of Subject 20

Figure 27
Drawing of Subject 21
Figure 28
Drawing of Subject 22

Figure 29
Drawing of Subject 26
Figure 30
Drawing of Subject 28

Figure 31
Drawing of Subject 29
APPENDIX E

PLAY TOY TEST RECORDS

I. Play Toy Test Record of Subject 1 (Female)

1. She went over to the trees and set up some.

2. She picked up the tiny doll babies and then the small doll. She tried to make the small doll stand; it's shoe fell off. She put the shoe back on and put all the dolls back.

3. She picked up a truck and the car carrier.

4. She made an exploration of the wild animals.

5. She moved the box of small objects and animals.

6. She started to set up the wild animals. She put alligator in the box of small animals. She made the tiger walk to the small object box and left it there.

7. She set out some of the farm animals.

8. When asked by the examiner if she knew some of the wild animals' names, she did; although she called the mountain lion a fox, she named all of the others.

9. She took one of the farm girls and lined up some of the small animals near her. She set the sheep out. She put the two milk cows near the figure after taking away the small animals. The examiner asked what the girl was doing, and she said the girl was getting ready to milk.

10. She had mixed both the farm and the wild animals together and she put the large and the small farm animals together. Two of the same horses were called twins (the brown ones). She liked the animals together. She said her mother had lived on a farm.

11. She indicated that the lion was going to eat the pig. "It's about to eat him."
12. She rearranged the goats.

13. She now worked with the fence pieces.

14. The examiner asked if she liked horses since she seemed to look at them often. "Yes," she said. A toy farm girl was to give food to the horses. "Gonna give some food to the horse. I rode on one once down by our trailer court."

15. She asked the examiner, "What's this?" (greenhouse) The examiner told her. She set it out and put the farm girl with the milk pail by it.

16. Next she tried to put a baby on the green horse but the horse wouldn't stand. Therefore, she set the baby on the tan horse with a solid base.

17. She set the green horse out with another animal.

18. She asked if the Cape Cod house was a church and then found the church. She set the church out beyond the farm elements. She added some trees near it.

19. She put the following animals into the red barn: seven horses or ponies. The farm girls were set by the entrance.

20. She set some trees out.

21. She went to the sign pile and put some out. She commented, "Says stop." "Put on a corner!" she said. She set the signs by a leg of the table.

22. She set out the trailer, the ranch house, and the split level house.

23. She told the examiner that "this is a ranch house. They have two Christmas trees and a cat and a person on the front (indicating the little, solid house)."

24. She now put a baby doll in the trailer cabana and took the trailer out. She put the two proches for the other houses together.

25. She stood one of the dolls against the wall behind the five and ten store. She set trees in front of the five and ten store.
26. She took the factory out and called it a hospital. She put it by the table.

27. She hooked the trailer up to the car carrier and moved it.

28. Near the red barn, she had set the garage, the Cape Cod house, and the school; she added some trees near the buildings.

II. Play Toy Test Record of Subject 2 (Male)

1. He went over to the animals first and explored both the wild and farm animals. He put an animal by the red barn.

2. He started to work with the fence pieces. "Know why that one won't go in? It's broke!" He made an enclosure and put a goat and a lion in it. He put the hay man by it.

3. He made more fences. Held the pieces in air to work. He seemed to like this activity very much. He made another enclosure and put the giraffe, the hippopotamus, a camel, and a horse in it.

4. He now set up some telephone poles.

5. He got the van out and put the earth mover into it. He ran it around.

6. He took the car carrier out next. He tried to put the dump truck on it; it fell off. Then he tried the racer on the car carrier and ran it around.

7. He used the buildings in their original positions. He moved the greenhouse and hay man slightly.

8. He ran a tractor into the trees.

9. He put a sofa from the small object box on the porch of the split level house.

10. He found the little cars. He put one on the car carrier and one by the gas station.

11. He put the boxes of freight and the hand ladder from the small object box in the van.
12. He put a tractor by the church.

13. He picked up the blue plane, ran it in the air, and put it back.

14. He took roof off the train station and put a small freight box in the station.

15. He put another small sofa in the super market after lifting the roof up.

16. He put some more small furniture objects on the train station platform.

17. He knocked the top off the church. He took the sofa from the split level house porch and put it in the church.

18. He took roof off the trailer and put some small furniture objects inside.

19. He moved all the planes now and set them out by the telephone poles.

20. He added to the large fence enclosure the following animals: pig, dog, and horse.

21. He took the roof off the factory. He said, "What's this building? I am going to put some animals in there."

22. He took the ambulance and jeep out and ran them over to the farm unit and put them in a row by the sheds.

23. He put the alligator in the factory.

24. He took the earth mover and put it by the large enclosure.

25. He moved the gas station to the other side of the train station. He put some cars in through its doors. The cars wouldn't go in well so he just lifted the building up and set them in.

26. In putting the cars in the building, he knocked the animals in the large enclosure over. He carefully set them upright. Now he had two of the same type of horses in the enclosure.

27. He moved the car carrier and ran the van from its former position.
28. He set some trees down by the gas station. The examiner asked what the gas station was. "Don't know," he said.

29. He took great interest in putting small objects around. He ran the van by the enclosure and between the buildings by the factory. He ran the van around a second time.

30. He knocked down a tree and set it up again in its original place.

31. He now sent the van and car carrier over by the first row of the houses. He put a car in the van.

32. He put the earth mover in the metal garage.

33. He took the tractor from the pile of trees and sent it to the garage. Now he took the racers out of the gas station.

34. He placed the van behind the train station.

35. He manipulated the fire station door. The small car was put in the fire station from the van. He lifted the top of the fire station to set it in.

36. He sent the van back to the first house.

37. The sides of the greenhouse were taken down and then replaced.

38. He played with the jeep and the ambulance again.

39. He moved the trailer out and tried to hook the jeep onto it to pull it.

40. He picked up and moved the trailer over by the large enclosure.

41. The giraffe fell down, but he didn't set it up this time.

42. He sent the dump truck to pick up the small plastic trees.

43. He wanted to know where to park the van. He tried to park it in a building but it wouldn't go through the door of either the gas station or the fire station.
44. He looked at the train station sign and asked the examiner, "What does this say?" The examiner told him. He put the train inside the building after removing the roof.

45. He moved the church out beyond the rest of the buildings and the large enclosure. He put two of the farm people in it (a man and a woman).

46. He sent the van and a car carrier to the gas station. The car carrier was unloaded next. He put the cars into the station. He picked up and moved the gas station to the area by the small enclosure. He rearranged the telephone poles on each side of the gas station.

47. He put a sign by the factory and train station.

48. He put a telephone pole by the school.

49. He set up some of the small plastic trees with the other trees.

50. He decided that he must move a farm house near where the barns were and did so.

51. He added another horse to the animals in the large enclosure.

52. He noted that the small objects in the box were too little.

53. He started to take up the fence.

54. He put a horse in the red barn.

55. He said the farmers lived in the split level house.

56. He put the fence pieces in the van and sent the van to the barn.

III. Play Toy Test Record of Subject 3 (Male)

1. He came in and sat down on the floor in front of the farm unit. He looked at greenhouse; he didn't know what it was.

2. Next he went over to the cars and trucks. He picked up the car carrier and put it down. He picked up the large van and tried an animal in it, which was too large. He picked up the train unit and then
tried to put it in the large van.

3. He looked at the factory.

4. He looked over the pile of fence pieces and started to construct a fence. He put a fence around the trees (part way) and a fence in front of the general buildings (community).

5. He went over the wild animals, picked up and looked at a number of them.

6. He started taking out buildings next and arranging them on the floor in front of him. This was the start of a town-like group. He took in the buildings in the following order: train station, supermarket, gas station, school, fire station, and the five and ten store. When the examiner asked what the train station was, he called it a church. (Later it was a train station.) He attempted to put the esso sign on top of the gas station at first, it fell off so he set the sign in front of the station and added pumps. He said that the school building was a store when the examiner asked. The fire station was to be another gas station according to his answer to a question.

7. His next act was to run the train down the row of buildings. He put in buildings on the opposite side next: police station, factory, church. He added cars.

8. He took the large van truck apart and used the truck part to pull the trailer from the original position into a spot on the floor. (He does not live in a trailer but has visited one.)

9. He added barns and the rest of the houses. He went over to the animals and selected a small horse. He put the horse in the red barn.

10. Now he began to add the farm animals around the barn area. In answer to a question, he said the animals were going to the barns. Each animal had a place.

11. He placed trees around. The trees were all in one spot as if in a park or forest.

12. He scattered the telephone poles around the trees and then set up the signs beyond the trees and poles.
13. Now the fence again became important. He connected a fence long enough to go around the end of the town (tree end). It seemed to be blocking exits. Perhaps it set the limits on the town.

14. The people now were added: both the tiny and the medium sized farm people. Examiner asked what they were doing. He said, "Didn't know, they were just 'working' around the farm." The examiner asked if he had lived on a farm. He'd spent a summer on his grandfather's farm.

15. The examiner asked what the plane was doing by the house. "Just landed," he said

16. He ran a car around to the gas station. It needed gas.

17. His last act was to put a chicken on top of the red barn. He said it was crowing.

18. At 1:03 p.m. (seven minutes early) he said, "I'm finished playing." (He started at 12:30.)

NOTES: He was a quiet, purposeful boy. After initial exploratory behavior and play, he seemed to know exactly what he wanted to do. He answered questions when asked but didn't volunteer information about what he was doing.

IV. Play Toy Test Record of Subject 4 (Male)

1. He moved all of the trees but the palm tree out.

2. He moved the ranch house, the brown barn, the tractor, and the animals for the farm out.

3. He took the jeep and moved it out.

4. He added more animals. He selected with care and deliberation. His placement was deliberate.

5. He put two cars by the ranch house.

6. In answer to the examiner's question, he said he had lived on a farm. He knew the animals' names.
7. He continued to place animals out.

8. He put the Cape Cod house out but rejected the porch with it.

9. He put the metal garage out next.

10. The examiner asked if he had lived on a farm. "Lived out in a forest by a river. Up in Texas." (His family was moving back there after school is out; it is a farm.)

11. "We're moving back because my daddy wants to go back where he used to live."

12. When asked if he had any pets, he said "Have water dog" (a fish-like animal). He said it was like fish with horns. "Use for bait and catch great big fish."

13. He has a fish tank with fish and knew their names: zebra, guppies, goldfish. He has two birds: one singing which is orange; the other is a parakeet. (They are at grandparent's house.)

14. One of the dogs from the toy animals was watching out for the other animals. The other dog was driving the animals into the barn. The cats were going anywhere.

At 2:10 p.m. he claimed he was finished. He said, "That's all."

NOTES: When asked about the arrangement, he said it was the place in Texas they were going to this summer. He liked the horses, milking cows, and hunting by jeep in Texas. His own house was the train station. Other houses were those of friends.

V. Play Toy Test Record of Subject 5 (Male)

1. He wanted to know which side of the small orange car was the front. The examiner helped him to decide (i.e., which do you think).

2. He picked up one of the larger farm figures. "Woo, it's too big!"
3. He handled some of the cars and trucks and especially the car carrier and pickup. He took the van truck and tried to put a cow into back but rejected it because of size. He found nothing else in the animal pile to fit the van. He looked in the box containing small objects. "Woee, stuff in here is too small!"

4. He picked up a sign. He knew what it was -- stop.

5. He set the palm tree group out in the middle of the floor. It became an island. He put a giraffe on one side and the alligator on the other. He added a blue lion, a gorilla, a tiger, and yellow and green lions to alligator side. When asked what they were doing, he said, "They're going over to the island. Going to try to get the giraffe." He added other animals. He took the leopard and said, "This one is going to be after the kangaroo."

6. He asked, "Do camels live on islands?" In answer to a question about seeing a camel, he replied that "Never seen a live one." He left the camel out of group at this point.

7. He moved the Cape Cod house out.

8. "Whee" (about trailer). He wanted to know whether a car went with the trailer. He was told that none went with it specifically. "Need to put them in." (referring to steps for moving) He put car carrier to the trailer for moving.

9. He put fence pieces together for an enclosure. He put the Cape Cod House inside the enclosure. He made his own gate by using one of the fence pieces. It opened and closed.

10. He asked the examiner, "Why do you need a pad?" (referring to taking of notes)

11. "What's this? Oh, a dog house." He selected a dog to put in and then decided it was too big for the house. The same problem occurred with one of the pigs. He finally found the dog for the set. "I found a dog but it's too small."

12. He needed a duck for the corn crib; he wanted a bird of some sort. "That's a turkey, it was way too big to go in. He tried a pig which went in.

13. He picked up the man with the hay fork. "Oh, Oh! Can't
use him!" The examiner asked why. "No hay."

14. "Woo, I'll never find a bird for this bird house."

15. He put pictures on the market building upside down; he felt he had to turn them around and put it back.

16. He made an exploration of chain store and other buildings to see if the doors opened.

17. He took the gas station out and found doors opened. He put the gas station on the other side of the poles which appeared to be a boundary. When examiner asked what the building was, he said it was a gas station or a toy shop.

18. He asked what the train station sign said and the examiner told him. "Do you have any tracks?" he said. The examiner said no and suggested that he use something else. He said he could use the fence pieces and he did. Then he said, "too chicken," The examiner asked why. "Because I'm scared I am going to break them." The examiner told him not to worry about it but he said again, "too chicken." The last statement was said under his breath. Even though he had reservations, he started to set up the fence pieces as tracks.

19. He picked up the train from the pile and disconnected it. "This is the end of the train." He used the end, placed it on the fence-tracks. He said, "Won't work, fence is too small."

20. The fence-tracks became a ladder placed against the side of the shelves in the workroom. Then it became an airplanee, and at last he was through with it. He verbalized these ideas. He took the pieces apart and put them back in the pile.

21. He was still disturbed over the corn crib which he had decided was a bird house. He hadn't found a bird for it yet. "Can see by looks, it's a bird house," he said.

22. He solved the problem by making it a bird house for wild birds. He set the corn crib on top of two telephone poles.

23. "Tomorrow I'm going to get $1.00 and buy a cowboy hat." The examiner asked what kind. He said not the kind with a string.

(This conversation occurred as the examiner told him the time was up.)
VI. Play Toy Test Record Subject 6 (Female)

1. She immediately went over to the poles and signs and then set them up. She had the poles alternating with two signs.

2. The fence was put together making an enclosure. The examiner noted that she was doing it crooked.

3. She told the examiner that "one of these days I am going to go to the store and buy some candy."

4. "Don't know what kind of house to take," she said. (She put the school in the enclosure.

5. "Could take some of those gates and make a fence for a church house." She had moved the church out. "Guess I will." Part way through she decided that there didn't look like there were enough to finish. She said she couldn't use the broken ones (The holes were plugged).

6. She collected and put back the original arrangement of signs and poles.

7. She indicated the church and said, "We go to a church almost like that."

8. "Course, I wouldn't like to play with trucks," she said.

9. She explored the small items in the box. She picked up the trough from the box and asked the examiner if she knew what this was for. Then she said it was for pigs to drink out of. The examiner asked if she had lived on a farm. She said yes she used to.

10. She took the small furniture from the box and put in a house. She commented that she had a black table and maybe she could find a matching black couch.

11. She looked at the pigs in the box and commented, "Pigs, I hate pigs!" The examiner asked her why and she replied, "because they're messy."

12. She handled and set out the supermarket. She knew it was a store. She said, "that's cute and so is this" (the chain store). She set both out, side by side.
13. She handled the garage. She decided that nothing could get in though she considered cattle as a possibility.

14. She handled the split level house. She took the school away and put the fire station in its place in the fence-enclosure. On the split level house she found that the garage doors opened. "No windows come open," she said.

15. She put the tiny furniture into the box again.

16. She decided she could maybe use the trailer; she handled it.

17. She decided to use a shed for a garage.

18. She asked what the greenhouse was.

19. She picked up the trailer now, explored it, and knew what it was. She had never lived in one but used to go visit an aunt who lived in one.

20. She added, "and I never lived in a barn before cause you don't want to live in a barn."

21. She put a pig in the corn crib.

22. She looked at the dog and dog house.

23. She used a number of trees for her house enclosure, specially the plastic (solid) trees. She later removed them.

24. She explored the dolls.

25. The gas pump was taken out and put in line with the esso sign.

26. She now handled the van and said, "don't like what goes in." She put in small animals saying, "Going to take the cattle" (small animals). She didn't like to put them in the back.

27. The examiner noted that she liked the car carrier better as a truck. When asked why, she said, "Cause trucks can go on."

28. She said that one of the cars was "the kind of car we have." "Three seated, you can go in the back and lay down." She told the
examiner that she had glasses.

29. She explored the factory. She didn't know what it was. The door came off and she put it back on and added, "This is a crummy house."

30. She took the shed and put it back. She put the split level house back. She picked up the police station. "This is a house with a weather vane. Where is the chicken? It should have one."

31. She put the plastic trees back.

32. She took the other trees and put them in order of growing; bigger and bigger. She called the poplar tree the "biggest tree I ever did see." She considered the trees by size.

33. She put the train station back. She put the fire station out in an enclosure. She explored the doors.

34. She explored the greenhouse now and rearranged the flowers. She told the examiner every flower she could name. "I pick them on the way home. I pick them on the way to school for the teacher." Then she commented that she didn't like to do so and said she was "not supposed to" do so but others older do.

35. She picked up one of the babies and handled it.

36. She started to pick up the church by the tower - it came off in her hand.

37. She wanted to know where the baby carriage was. She now put the baby in the church. She commented that "she has been bad. She can't go outside."

38. She looked over the planes.

39. She said just before the time was up, "Boys don't like to play with dolls. Girls do."
VII. Play Toy Test Record of Subject 7 (Male)

1. He immediately went over to the corner and handled the four farm people. He explored the animals. He set up some of the people and animals in the corner.

2. He ran the train between the stacked buildings and around the floor. He put a gorilla on top of the train and tried to run the train through the building area. The gorilla fell off and was discarded.

3. He ran cars out on the floor and back: racer, earth mover (shovel was raised as he ran it around), the dump truck. Then he ran both the earth mover and dump truck together.

4. He moved telephone poles (2) and sign out. He seemed to show great concentration during the selection.

5. He put the earth mover and dump truck back in the beginning line-up. He went through the same procedure with the tractor, car, and the gas truck as well as with the others.

6. He ran the dump truck around buildings, in back by the gas station and between the gas station and the train station, and finally into original place. He ran the van out next and then the train again. He tried to put the train into the van (it didn't work). He ran the van between the buildings and into place by train.

7. He ran the ambulance out and around the floor. He sent it under the table on the far side of the room and then over and around the greenhouse and back between the first two rows of buildings near cars and into place.

8. He sent the pickup around greenhouse and between telephone poles set up on the floor. He put plastic trees in the pickup and ran it out on the floor. He ran the car carrier out and over to the pickup and transferred three plastic trees to the carrier. He sent the pickup truck over to the spot where all the other cars were. Between the assembled cars and the wall he found a place to set up the trees. He set down the first tree. He sent the pickup back over to the carrier and reloaded the trees into the truck and sent the pickup back over to the assembled cars. He now set the other three trees out with the first one in a row behind the assembled cars. The trees were somewhat in the way of car movement behind the buildings so he set them back against the wall.
9. He picked up the grey plane and ran it through the air and over the table and back to its original spot.

10. He set up some farm animals.

11. He sent the red plastic car over to the farm building group.

12. He now sent the boat over and around the floor and back.

13. He knocked the train station roof off but didn't explore the inside. (He just set the roof on again.)

14. He sent the blue car out from assembly and around by the market and the five and ten store and then over and around the solid house.

15. The examiner repeated the fact that he could move anything any place that he wanted to. "Like all these houses the way they are," he said pointing to both building and house groups.

16. Before time was up he said, "I'm done."

17. Before he left, the examiner asked a few questions. He called the stores (market and five and ten) movie houses. He called a lion a tiger, a goose a duck, and one of the goats a horse. He made the statement, "All cows give milk" when pointing out the cows.

NOTES: All buildings remained just as they were set up originally; he made no changes.

VIII. Play Toy Test Record of Subject 8 (Female)

1. She went to the dolls: little girl with glasses and mother dolls (large and small). "I have a Suzie Smart at home," she indicated the doll with glasses. She stopped playing with the dolls. "I'd rather play with my dolls."

2. She went to the animals. "We have a cat and it fights with me." She told the examiner that they had taken its claws out. "This friend of ours is in the hospital and we have her dog." They were taking care of it. She now explored the little objects in the box and
continued about their friend's dog. Its name was Wolf. "It's the big-
gest dog in Tucson except one - not a German Shepherd. He (dog) eats
a big plate of food everyday. My brother has to fill it up. I don't want
to get wet."

3. "We had a dog for awhile. Our dog so big; we had a mother
dog, but it had a baby. All babies except two looked like the father." She
continued to explore the dogs in the animal pile. "When school is
out we might get a farm." The examiner asked where and she said, "out
in the country." She wanted a white horse then.

4. She told the examiner, "Hope I don't have to go school." The
examiner asked why and she said, "I don't like the fourth grade." The
examiner asked why since it was a long time before she would be in
fourth grade. "My brother is in the fourth grade and he brings home
homework."

5. She now began to put out and arrange the farm animals. She
also took one tiger from the wild animals.

6. She continued to talk: "I have a piano but I don't take lessons
anymore." She told the examiner she taught herself now.

7. Again she told about her former dog. "Once came out and
my dog was lying down. Know what? Thought he shrunk."

8. They planned to keep a dog when they got a farm.

9. She went over and picked up the brown barn and set with the
animals. She continued to talk. "Every time my mother plants some
flowers my dog gets into them. Last night there was a white and black
cat fight'en on top of our house. My little brother is going to get a
horse so big. He's not even in kindergarten." She is still setting out
animals: especially the horses. She called the two brown horses twins.
She has an older brother. There is only one left handed person in her
family: the older brother. She is right handed.

10. She went over and selected the gas truck for the farm she
was building.

11. The roof came off the barn a few times during her work.

12. She picked up a moose and asked what it was. When the
examiner asked her what she thought it was, she didn't know but said
it looked like a deer. "Every time my daddy goes deer hunting he never
gets one but he gets a pig. Got a pig like this (showed an animal); cut
its head off and put it in the sink."

13. She picked up the little doll with glasses again. The examiner
asked what the doll was doing (She called the doll a little girl). "I don't
know. Probably not a girl because she is too big."

14. She set out some alder trees.

15. She put the brown barn back and took the red one out. "Goody,
this doesn't come off." (indicating the barn roof) She put some animals
in the barn and became disturbed because they wouldn't stand up inside.

16. She went back to the dolls again and tried to make the large
ones stand. "Don't stand very well with high heels on. Neither do I."

17. She picked up the Cape Cod house and looked at it.

18. She looked at the trailer and explored it. She told the examiner
that she had never been in one before.

19. She moved the split level house out.

20. "My mommy needs one like that," she said indicating the
greenhouse. "So the cats and dogs wouldn't fight in flowers," etc.

21. She put an alder tree on either side of the split level house.

22. She put the farm girl figures and other farm figures out.

23. She put the smallest doll and the babies inside the split level
house.

24. She put the glasses on the one doll and leaned her against the
barn. She later set her on top of the barn. She was finding out how to
get down from the barn. She looked at the pony tail on the doll and told
the examiner, "Momma is gonna let my hair get long. She cut it too."

25. "Don't want a pig here." She indicated one in farm group and
took it out.

26. She played with the large mother doll. She said, "Her legs
won't split." She told the examiner about Annie Oakley on TV and how
she rides. She also indicated that she had only been to a rodeo once before.

27. She moved the church out. She told the examiner about wearing different dresses to church. "Momma makes all my dresses."

IX. Play Toy Test Record of Subject 9 (Female)

1. She went over and started to build a fence and made initial exploration of the pile. The fence (several pieces together) was made to stand by leaning it against a telephone pole. She had set out several poles. She showed she could read the signs; she explored the pile with the fence pieces. "R for railroads."

2. She picked up and moved out the trailer and the cabana with it. The examiner asked if she had been in one. "My mother has a trailer with a cabana." It had yellow stripes.

3. She continued to set up the fence around the trailer. The fence became long and now she needed another support. "Guess I have to get another." (She indicated the need for another pole to set fence piece against.) She put more fence together. One of the holes in a fence piece was filled up. She discarded it for a good piece. The fence was uneven. "Know what happened? I had it upside down." (Indicating some pieces constructed upside down) She rearranged the pieces so that they were all upright. As she finished putting them back together, she wiped her hands and sat back saying, "There!" She had shown real concentration in construction. She commented on another section being crooked and bent to straighten it. In straightening it, she knocked a part of the fence down. She set up knocked-down part again. "Whee, I got it together!"

4. She had constructed an enclosure around the trailer with an opening. Talking of opening, "I know what. Some people could walk through here."

5. She lay down on the floor to fix the fence when she knocked it down again.

6. Now she went over and added trees to the trailer enclosure.

7. She decided to make a gas station. She put the metal pump
and the esso sign out near the back of the trailer enclosure.

8. She decided to add a car. "There's the car" (pickup). She put the pickup by back of trailer enclosure. (It was evidently for use with the trailer.)

9. She sat several seconds just looking over the scene. The examiner asked what she was doing. She was looking for someone to go through the fence enclosure for the trailer. She picked up the large mother doll but decided it wasn't the one she wanted. She picked up the little doll with glasses and stood her at the entrance of the trailer enclosure.

10. She now went back to the gas station complex. She decided that the supermarket was to be the gas station. She set it up with the metal pumps and esso sign.

11. She put the boat by the pickup truck at the back of the trailer enclosure. She told the examiner the man sometimes takes his boat out on a trip.

12. She moved the telephone pole to the enclosure entrance and set out some signs.

13. She told the examiner the town was out away from the trailer and the gas station. She put a "no left turn" sign by it (an imaginary one).

14. She now dropped her arms and looked at the arrangement again.

15. She told the examiner that the mother was in the trailer; the girl at the entrance of the enclosure was her sister.

16. She picked up the van truck and set it out. The father was in the van going home. "He works some place at a garage."

17. She took out the earth mover, told examiner it was to dump dirt. "Know how I knew, my son-in-law has one of these and he's a miner."

18. She now had a tractor out with the earth mover. "These people are going somewhere else" (not in the trailer). "Now got to get them houses."
19. She picked up the brown barn and set it out away from the other buildings.

20. She told examiner that the man in the earth mover is a miner. "Other (tractor) is ... what do you call it -- a farmer man."

21. She now added some farm animals from the pile to the area around the barn. She put a little pig at the entrance to the barn while telling the examiner "barns always need little pigs."

X. Play Toy Test Record of Subject 10 (Male)

1. He went to fence pile and explored it.

2. He handled school and could read the name. He set it out.

3. He handled garage and telephone poles. He set them out.

4. He went back to fence pieces again. He set them up. He held the pieces in the air to put them together. He repeated the process often. He finally laid the pieces down and picked up the gas station and placed it in a position. He went back to the fence and worked on it again.

5. He stopped playing and went to the bathroom and came back in about four minutes. He went to the fence again. He had trouble keeping it upright; therefore, he removed it.

6. He considered the greenhouse. He didn't know what it was but decided it grew flowers when the examiner asked.

7. He took out the Cape Cod house, the red barn, the split level house and moved them into position. He found that the garage door on the split level house moved. He put the little orange car inside.

8. He explored the farm sheds, and sort of set them out. He asked what the chicken house was for. The examiner asked him what he thought. He said, "A house." The examiner asked who lived in it. He said, "people."

9. He moved out the ranch house and found that the door opened.

10. He took the train station out and when examiner asked what it could be, he said, "school."
11. He took the fire station out and explored the doors.

12. He was playing with the cars and train for awhile as well as the car carrier.

13. He took the factory out. He knew what it was. He explored its doors. Some of the smoke stacks, etc., came off and he put them back on.

14. He ran a part of the train in front of the station and said it was the school bus.

15. He went to the animal piles and started to set up some of them.

16. He put a chicken on the brown barn shed. It fell off.

17. He added some more trees and poles and signs to what he had set up.

18. He put a sign out and decided it would say "stop".

19. He explored the trailer and seemed to assign it to a place in the organization. (It was not particularly out of the original order.) The examiner asked him about living in one. He hadn't done so before. "My mommy says it's too squishy."

20. He now decided the train station would be a hospital. He put the ambulance nearby.

21. He got the van out and tried to put in the van about three cars or a truck. He ran the van over to the factory. The examiner asked about the cars. He said they were cars that had gotten wrecked. He now took the van again and ran it between the pumps of the gas station and then over to the ranch house. He took a car out of the van and said it was fixed now. He stopped the van by the Cape Cod house.

22. He now ran trucks over to the church that he'd set out and carefully made them line up. He turned the church around.

23. Trees and signs were carefully picked up. Signs (more of them) were set out. He told the examiner that all the signs said "stop"; signs indicated streets to stop at.
XI. Play Toy Test Record of Subject 11 (Female)

1. "What's this?" (greenhouse) The examiner asked what she thought it was. "Flower farm." She knocked top off accidentally.

2. She picked up the Cape Cod house and knocked the roof off. She commented on the houses: "Look like 'Harmony Homes'."

3. She handled the fence pieces.

4. She handled the supermarket and then the five and ten store.

5. She handled the farm animals. The examiner asked if she had ever been on a farm. "Used to live on one."

6. She picked up a plane and asked, "Will it fly in the air?" The examiner told her not unless she held it. She threw it across the room and ran it on the floor, then put it back.

7. She picked up the mother doll. She took the shoes off. She tried to make it stand. She grew discouraged and put it back.

8. She picked up the little girl doll with glasses. "Looks like Suzie Smart. I come from Missouri. My little cousin has one of these dolls."

9. She handled the wild animals. She picked up and set out the reindeer (She called it a deer). "I have a Bambi." She proceeded to tell the examiner a story about two deer: Bambi and a girl deer who fell in love. Bambi left the little girl deer but then he found her after the fire and everything was okay. She picked up the mountain lion. She remembered the desert museum and the mountain lion there. She named it correctly. She fingered three or four other animals and put them back.

10. She went over to the red barn. "More like something." She handled and kept the barn out for a while. She went over to the farm animals. She picked up a horse. "I rode on a little pony like this only he was white." "This is the kind of pig my cousin has." She showed the examiner one. She put it in the red barn (by door). She tried to get the horse into the barn through the door. She got it in but it fell over. (She could see through the plastic window in the barn.) She opened the bottom door and put it in again so that it was standing. It
fell over again and she tried to get it standing. She said at this point, "try something else" and put the red barn back.

11. She took the brown barn over near the farm animals. She took one of the milk cows and set the barn over it.

12. She picked up the corn crib and took over to the area near brown barn. "It's a little bathroom, ain't it?" "Know because it's little."

13. She picked up the dog house and the chicken house and placed them over near the brown barn.

14. "Where's all the people?" She found the little people. She put one inside the chicken coop. When the examiner asked what the chicken coop was, she said, "Kind of a home like 'Hommy Home'." "Know how I know? Cause I've been there playing with some of my friends."

15. She took the red barn back out again. "Gonna put all of the animals in (red barn)." She set up some of the animals (2 hens, goat, 4 horses, pig, calf). "He's (a pony) coming to his mother." She continued to set out animals then said, "That is all I'm gonna set out." She tried to set the red barn on top of the animals and then realized that it would just knock them down and they wouldn't go in unless the bottom was open. (This procedure worked with the brown barn which was open on the bottom.) The examiner asked if she could open the bottom; she did so and tried to put the barn over the animals. There were too many to cover so she shoved them together and plopped the barn over them anyhow. Then she picked them up (animals) and dumped them in the barn and closed the bottom.

16. She said, "See them fight."

17. She looked for the man with the gun. She said he was going to shoot the animals. The woman with the pail was going to feed them. She sent the woman with the pail in to feed them first, stuck her through the door and then pulled her out in a few minutes. She sent the gunman in and he shot one of the horses. Then he shot all of them. The examiner asked her what they were going to do for more animals. "Buy some more."

18. She asked examiner how much time she had. The examiner told her not to worry about it as she would tell her.
19. She dumped the farm animals out and then decided to put some wild animals into the barn. First, she put the tiger in who was "gonna stay on one side." Then the buffalo was put in. The examiner asked her if they were going to fight any more. "Nope, not gonna fight no more."

20. She took wild animals out of the barn as she said they were fighting. The examiner reminded her about the previous statement. Her answer was "probably".

21. She lined up the animals who fought. "Didn't kill, just knocked down." (tiger, bear by buffalo)

22. She said the alligator was going to get the hay man. The alligator choked the man.

23. She decided to play something else. She got the van out and put the alligator into it. "Gonna sell the alligator cause it killed the man." Then she took it to the wild animal pile cause it was dead. The gorilla got the alligator. Next she said that there was a big fight and both got killed.

24. She took car carrier out. She put the hay man on it and sent him to the doctor's office...he was only injured. She sent car carrier over to the solid house (doctor's house) and put the man inside (from open bottom). She decided he was all well because he was standing up. She sent him back to work.

25. She took the gorilla to the animal pile because he was dead (on car carrier).

26. She picked the fire house up and took top off and put it back.

27. She picked up the station platform and put it down. She said, "There, someone's going to a picnic."

28. She picked the church up and set it across the room. (She asked if she could do so.) She said, "It's way over here," and put it near the door across the room.

29. She took four little people and said, "They're going to church." She put two inside the church (lifted the roof) and put another in front of it who was going to it. She still had one in her hand. She decided they were all inside it and put all four in church.
XII. Play Toy Test Record of Subject 12 (Female)

1. She explored the medium sized doll. She took off and put back on the shoes. She put the doll back.

2. She went to the wild animals and explored and set some up. She said, "A girl friend of mine she moved. She had some of these."

3. She explored the little animals in the small object box, taking them all out of the box and setting up, even the small chickens. She put them back with the comment, "Can't hardly see them."

4. She took the mother doll out. She also explored the little people, the doll with glasses and then put them back. (She did the little tiny doll.)

5. She moved the school out and the roof was lifted off.

6. She moved the police station slightly.

7. She put the esso sign by the market.

8. She put the telephone poles out - all of them. Now some of the signs were put out. They circled the school and the police station. She put the plastic trees by the school house.

9. She moved the brown barn out (top came off). She also moved the dog house - looking in tiny box for dog - found something for the dog house.

10. She moved the supermarket out and also the five and ten.

11. She moved and set up three horses, three cows, carefully in separate groups. Pigs were set out (again in a group). She also set the dogs out.

12. She rearranged the buildings and put the five and ten back by the esso sign.

13. She looked around and spotted and looked at the trailer over by the barn. She did the same with the split level house and the corn crib. She decided that the corn crib could be a dog house. Then she said, "Gonna be a pig house," and put a little one in. She asked what
the barn (red) was. She fingered the greenhouse.

14. She put the tiny doll in the trailer. She said she had been in to look at a trailer. (Her parents were thinking of getting one she said in answer to question about whether she had ever been in one.) She did not have any friends living in a trailer.

15. She put the medium sized doll in the split level house. The mother doll was then moved around first to the split level house and then to the trailer. She said that the mother doll was getting the others.

16. She took the shoes off the medium and the mother dolls and put them (shoes) by the split level house in the case of the medium sized doll. She put the mother doll's shoes by the school. She said the big one was the mother. "One of them has to lay down."

17. She took the pig out of the crib (corn).

18. The medium sized doll was now the mother in the split level house. The tiny doll was the baby. Then she decided the one she had in her hand (the mother sized doll) had two babies. She picked them up from the pile.

19. All of a sudden she said, "Not going to play with big dolls anymore." She put them back.

20. She picked up the farm people. She eventually put them all back when she discovered that even the farm people didn't fit in the doors of houses. She did put a farm girl in the split level house. She said, "Look how large the animals are." She compared them to the little animals from the small object box that she had set up.

21. She picked up the mother doll and said, "Just like a Barbie doll but she's not." She had one at home. "My mom makes her clothes and I do too." She guessed that she could play with her. She had the mother carrying the greenhouse around and arranging a city. She was going to take the flowers out of the greenhouse and put them around the houses. She decided not to do so and put the flowers back in the greenhouse. She said, "Mother won't let her have them." She moved the greenhouse by the trailer.

22. She picked up the service station and set it out by the esso sign.
23. She took the farm girl out of the split level house. She was concerned, "How is she going to go anywhere without a car." She took a car (the pickup). She took a tiny man instead of the farm girl and put the tiny man in the back of the pickup and looked for a place to send him.

24. Suddenly she put all the houses back and announced, "Gonna play something else." (time 1:10)

25. She told the examiner that, "Someday, sometimes, some of these little things are going to get lost."

26. She now went back to the dolls and took the following dolls (mother, medium sized, one with glasses) to the table separately and tried to make each one stand. None would stand so they were returned.

27. The tiny doll was taken to the table last, and she was able to make this one stand. She remarked on the tiny doll's dress and said that she had a doll like that but larger. Her sister pulled at the doll's dress all the time and ruined it. "Younger folks don't understand."

28. She put dolls back.

29. She fingered the esso sign and trees.

30. She again went to the greenhouse. She took the flowers out. She told the examiner that the flowers were "put in the wrong way". When the examiner asked why, she said, "That row should be there and that one there." She rearranged.

NOTES: She was a rather quiet girl who was a little shy at first. She would answer questions when asked only but not volunteer information until near the end of the time.

XIII. Play Toy Test Record of Subject 13 (Male)

1. He asked if he could really make anything.

2. "Hey, I used to have this!" (plastic gas pump)

3. He started to play with the toys. The examiner asked what he was doing. "Making an air force."
4. He moved the gas station out. "There's the plane place where they fill with gas."

5. He moved factory into place. "Here's a factory where they fix them." (planes).

6. He moved pickup out.

7. He moved plastic pumps outside of the gas station. They were to be for cars. The metal pump in front of the gas station was to be for the planes.

8. He decided he needed an ambulance. "If one of the planes crash, can come get them." He moved ambulance into position.

9. He explored cars and trucks. "Here's a train! Well, you don't have a track anyway." In spite of this he moved the three piece train out and put it behind the gas station. He imagined a track behind the airport.

10. He picked up the trailer. He said that it was where the air force man lived. He set it behind the factory.

11. He explored the sign pile. "I know that spells "stop".

12. Next, he went over to the wild animals and farm animals. He picked up the alligator. "Woo, a big, great alligator!" (He said this in a deep, deep theatrical voice and looked at the examiner.)

13. Next he handled the dolls. "You buy these?" The examiner told him yes.

14. He picked up planes and set three out. He left one which was a passenger plane. He told me that a jet is bigger than a house (passenger jet that is). "My mother has gone on a jet." (Also his uncle went to New York on one.)

15. He picked up the railroad station. He found the top off. This occurrence disturbed him somewhat. The examiner told him she hadn't glued all the parts together so he would just have to be patient when they came off.

16. He told examiner that he couldn't make a jungle because it was not in an air force.
17. He explored some more buildings whose roofs came off. He told the examiner with somewhat annoyed expression, "Sometimes I get tired putting roofs on!" He asked the examiner why not glue them on.

18. He picked up the school house. "It's a school. I don't want that; it's not in the air force."

19. He picked up the jail. "That's a jail. Know how I knew?" He pointed at the bars on the windows.

20. He made a comment to the examiner. "I'm a Polish boy!" He also said that was the reason he had a Polish name.

21. He examined signs again. He set up some telephone poles.

22. He picked up the fire house and the roof came off. This time he put the fire house in position. He put the jeep inside the fire house.

23. He handled the greenhouse. "That's a little flower place." The flowers lifted up when he pulled at them. "Don't tell me the flowers come out too!" He explored the greenhouse and put it back together and into place.

24. He took the car carrier out and ran it around and then put it back.

25. He told the examiner that he couldn't make a farm. It didn't go with the air force.

26. He took the car carrier out again and put the boat on it instead of cars. He told the examiner. "This is good but it's for cars not boats." He ran it beside the fire station.

27. He looked in the small object box. He ignored the furniture and small animals but took the boxes out. (They went with the train station.) He told the examiner that the boxes were dynamite. He put them on the car carrier. He said the dynamite was going on the boat. "Sometimes they carry dynamite to bigger boats."

28. He handled the farm girl with bucket. "She's gonna drop her eggs."

29. He took the van out. "Looks like a farm truck. Well, I guess
I will use it." He ran the van by the car carrier.

30. He went over and picked up the corn crib. "This can be a bathroom (looked on the underneath side). No, doesn't have a hole." He set it out and used it as such anyway.

31. He picked up the split level house. "What a big house." He set it down the room with the front facing the wall. He said it was a haunted house away from the air force field.

32. He explained how to make fire with sticks. (His father was a boy scout.) He went into great detail for examiner.

33. He told examiner about a trip to visit a brother. He explained about driving and the motel at length.

34. He commented on the size of the barns.

35. He ran some of the cars out to the air field (small orange and blue cars and the pickup). He told the examiner that he needed a "test driver". He selected one of the little men. He put him in the back of the pickup; he was "sitting down in the truck snoozing."

36. He told the examiner that the air force field was 24 miles from town.

37. He put out a poplar tree. There was only one tree because they cut down all the others to make telephone poles he told the examiner.

38. They bring their own food out to the field he told examiner.

XIV. Play Toy Test Record of Subject 14 (Female)

1. She went over and picked up the doll with glasses and stood her up. She tried to do the same with the mother doll but put her back.

2. She took the wild animals out. She took the alligator out and said it was biting the toe of the doll. She put both the alligator and the doll back in pile.

3. She took farm girl with the pail out. She took the tiger out to
eat from her pail. The giraffe did the same and danced around her.

4. She got both of the farm girls. "This one is going to get some water." Dog (lion cub) was following her.

5. She set the farm men out. They were working. The hay man was "talking to this lady about something."

6. She took ambulance out and moved it around the farm figures. "They fell in the water and some alligators were in there and one bit 'em."

7. She took the van out. She tried to put figures in, but they didn't go. She sent van back.

8. She took girl with the pail out and the dog (mountain lion cub) walked back with her.

9. She took medium sized doll out and the tiny doll out and made them walk around. She took the tiny doll back, did same with other doll.

10. She took the grey plane out and put several of the farm people on the wings and flew the plane out and back. When asked where they were going, she said, "To this place where they're gonna move."

11. Next, she moved cub-dog over to the tiny people. She took little people out and around and back, one at a time.

12. She put the little people in the dump truck, which was sent over between the station and the supermarket. She set two up on the train station platform and then she added the other three after seeing whether they fit.

13. She found that the roof of the train station came off.

14. She moved the orange car out and over by the station. She then moved the car over to the pumps which were moved out. The examiner asked her about it. "Getten' gas." Then she sent the car back to the station.

15. The little people on the train station platform were put back in place. She moved them back in the dump truck - down the line by the metal pump.
16. The train was taken out. The dog (lion cub) was put on top of it. She said it was going over to the farm people group. "He's going back home with the others."

17. She took an alder tree out.

18. She moved girl with pail around by the alder tree. "She's picking dirt up so we can move tree."

19. She moved two men out by the tree; they moved it.

20. She moved the tree over. She set the cub under it. She put the giraffe by it and a buffalo, the alligator, and the mountain lion. Now she put around the tree, the farm figures.

21. She took the mother doll out and again tried to make her stand. She made the legs move and then put the doll back.

22. She put alder tree and the animals back in their original places.

23. She got the doll with the glasses out. She explored the glasses, trying to make the glasses fit the doll a little better.

24. She got the mother doll out and placed her by the doll with the glasses. She said one was the older and one the little girl and they were going to school.

25. Then she got the medium sized doll out and had the medium sized doll take the tiny doll home because "she got hurt."

26. She said medium sized doll was now going to get a friend. She had her walk between the supermarket and the school building rows to the church where the friend lived.

27. She had the mother doll, tiny doll, and doll with glasses going to the store for "something to eat for their dinner."

XV. Play Toy Test Record of Subject 15 (Male)

1. He went over to gorilla and hippopotamus and took them out of the pile.

2. He touched the train platform.
3. He took more wild animals out and the farm people.

4. He put the planes in a row.

5. He took the boat out next.

6. Then he set the trees out near the farm people and when the examiner asked about the people he said they were going to the woods.

7. He set the fence up and the trees.

8. He moved the greenhouse out and set up some poles.

9. He then picked up the fence and held it in the air to set.

10. He lifted the lid of the school and moved it out.

11. He lifted the lid of the school and moved it out.

12. He took the fence apart and reset it. He tried to set it up.

13. He reset the plastic trees in with the other trees and removed the fence.

14. The stores were taken out.

15. The ambulance was taken out and run around.

16. He took out the blue car, train, earth mover, and tractor.

17. He took out another few animals.

18. He took the police station out and solid house out, and put the garage to the front of the greenhouse.

19. He took church out and put parallel to the school.

20. He set signs up near the greenhouse.

21. He set up twelve animals carefully.

22. He ran planes and cars over to the door and lined them up.

23. He ran tractors over to where the planes were.
24. He got the van out and ran it to the train. He put one part in but couldn't get the second part in so he took it out.

25. He got the car carrier out and ran it over to the van and the train. He reached over and put the two pieces on the train.

26. He took the planes out and sent them to door again. He also sent two horses over to the door.

NOTES: He wet his pants. At 1:53 p.m. he went to the bathroom. At 2:05 p.m. he came back and sat staring; no results. At 2:09 p.m. the examiner let him leave.

XVI. Play Toy Test Record Subject 16 (Female)

1. She picked up one little animal, fingered it, and then put it back. Then she handled some of the wild animals. She set up the reindeer.

2. She examined the medium sized doll.

3. She took the esso sign in her hand and examined it. She went through the same procedure for the supermarket. She took top of supermarket off and then put back on.

4. She handled the train station, took the top off and put the top back on.

5. She picked up the large mother doll figure and the medium sized doll and said she liked them. She put them back in their original position.

6. She handled the tiny people from the small object box.

7. She picked up small girl doll with glasses. She took the glasses off and put them back on.

8. She put the esso sign and the plastic pump by the market.

9. She handled tiny animals from the small object box.
10. She took the truck and the van out and she put some of the animals in; baby kangaroo.

11. She set up one sign.

12. She took the ambulance out and then the car carrier. She tried to put ambulance on the car carrier but it was too heavy.

13. She moved the supermarket out and pulled the chain store into the supermarket's place.

14. She put the ambulance by the train station.

15. She rearranged the pumps and esso sign. She set up the little people by the new pump arrangement. She moved the car carrier into position by it.

16. She picked up the factory and examined it. She found that the one door opened and then tried the other doors to see if they opened.

17. She lifted the train station roof again and put it back.

18. She moved the fire station out and explored the workings of its overhead door.

19. She took the red plastic car and the orange car out.

20. She fingered the school and police station.

21. She moved the fire station out beyond the supermarket.

22. She set up the little people by the factory.

23. She took the baby kangaroo out of the van now where she had put it before.

24. She arranged some of the wild animals. The examiner asked what they were doing; she said, "I don't know."

25. She put the van by the back of the factory as if it were making a delivery.

26. She tried to fit one of the little people in the factory door.

27. She ran the orange car up to the factory.
28. She put one little man by the pumps; three others were put on the ramp in back of the factory. The examiner asked what they were doing and she replied that they were walking around and working. She then put two of the little men from the factory ramp into the back of the van. She took the men back out and returned them to the ramp.

29. She took the van apart and set it against the factory ramp.

30. She did not volunteer stories concerning her actions with the toys and when asked she would say "don't know". She often gave yes and no nods to questions.

31. She took gas station out and set it down. She moved a little plastic man over by the side of the gas station; he marched over.

32. She moved the fire station out by the back wall.

33. She explored the five and ten store to see if the doors opened; it didn't.

34. She took the red plastic car and put it in through the door of the fire station. Then she took it out. She lifted up the fire station. She put the car back in through the door again and took it out.

35. She moved the red plastic car over to the factory.

36. She moved the five and ten store to a new position over by the fire station against the wall. She put the car carrier near the fire station; backed it in.

37. She took five of the horses out. When the examiner asked what they were doing, she said "walking around".

38. She looked at the sign on the supermarket. She didn't know what it said (at least this was her report) when asked. She moved the plastic pumps.

39. She took a tractor out and handled it.

40. She moved the market back now to near original position.

41. She made the horses move from between the factory and gas station where they were originally set up. Horses were going over to the fence pile. She said they were going to the "trees". The examiner
asked what they would do when they got there. "Walk around."

42. She put some fir trees out.

43. She opened greenhouse and rearranged the flower rows to red, yellow, red, yellow. (Their order was red, yellow, yellow, red.) She moved the greenhouse out near the fir trees.

44. She moved the solid house out behind the horses.

45. She moved the Cape Cod house out and also the trailer. (She said she had never been in one before but she had friends who lived in one.)

46. She moved horses again towards the mass of set up trees. She now set some more trees out.

47. She shoved the church over to spread the trees out. The top came off and she put it back on.

48. She didn't know what the police station was. (The examiner asked her about it.)

49. She picked up and explored the garage, the ranch house, and the split level house which came apart.

50. She explored the farm buildings and moved the buildings slightly.

51. She put the orange car by the school and said a person worked there.

NOTES: She wore glasses. There was a lot of noise during first part of the test from the library which might have disturbed her. She appeared quiet and shy and a little uncertain in a new situation without group support; she was not particularly reserved during the group test.
XVII. Play Toy Test Record of Subject 17 (Male)

1. He went over and took four horses out and two ducks. He set them up and left them by the farm pile.

2. He moved to the wild animals and set up the camels in a row and then the lions, etc. (He set up all the wild animals.)

3. He didn't know the difference between the leopard and other cats; he had the same problem with the moose and the reindeer.

4. After putting them up, he set all of them back.

5. He moved the Cape Cod house out next and then put it back against the greenhouse (almost the same position as before).

6. He now started to set up the telephone poles. When asked about the telephone poles, he said he didn't know what they were but when the examiner asked him to guess, he did say telephone poles. He put all the telephone poles in a line. Next he put two signs out. Then he put the trees out beside the poles (He used all the trees).

7. He pushed all the poles, signs, and trees back into a pile.

8. He explored the train for awhile and then got the racers out and ran them around.

9. He pulled the metal pump out and put the racers by it and then he shoved it back.

10. He took the orange and the blue cars out and the esso sign.

11. He moved the Cape Cod house out (up near the market) and put the orange car by it.

12. He moved the police station and the supermarket out and put four cars by the supermarket.

13. Then he shoved all the buildings back into the rest of the buildings.

14. He explored the greenhouse.
15. He took the red and grey planes out. The red one was a jet. He stood up and held both the red and the grey planes in the air. He now took the other two planes out and put all four of them in a line. He sent a red one into the air again.

16. The esso sign was still setting out; he now carefully put it back.

17. He put the planes back now.

18. He took some of the wild animals out again. (He took great care in his selection.) The examiner asked him about the hippopotamus. He knew the name, but not where it lived. (He said the desert first and then the zoo.) The examiner said it lived near the water like the alligators so he set them together. He set up the other wild animals which had been selected.

19. He set up next the little things from the small object box.

20. He found the trough and used it for the cows.

21. He went back to the farm animals. He picked up one and dropped it.

22. He then went over to the dolls. He tried to make the small doll stand. He did the same with the little girl with glasses and the medium doll. As he picked up one doll, he put the other back.

23. Now he took the earth mover out and then put it back.

24. He explored the barn.

25. He picked up the mother doll and noticed that the eyes opened and closed. He tipped the doll to make it do so and put it back.

26. He put the alligator and the hippopotamus by the jail door. When the examiner asked what he was doing, he said, "Breakin' the door."

27. He put the other animals out by or on the jail. He put the lion on the roof as well as the gorilla. He put another hippopotamus and a giraffe by the door. Then he put everything back.

28. He started to set up the farm animals again. When the
examiner asked what was happening, he said the horses were looking at the cows.

29. He put one cow back.

30. He knocked the roof of the school off when he moved the supermarket and the police station out.

NOTES: He would not speak unless he was asked a question. Usually he just nodded his head but he was not really shy in manner.

XVIII. Play Toy Test Record of Subject 18 (Male)

1. He went right over to the greenhouse and opened it up. He moved the flowers around. When asked what it was, he said, "flower weed."

2. He examined the fence pieces and put them together. He relined the little farm pieces in a row along the wall. He enclosed two other sides with a fence but left an end open (farm area).

3. He took the shed out and put it in front of the barn.

4. He took some of the poles and set one in front of the Cape Cod house.

5. He took the car carrier out and put two plastic pumps on it. He moved them.

6. He took the train station top off and turned the station around. He took top off again and put the pumps on either side of the walk around the station.

7. He took van out and opened the back. He tried to get the ambulance in the back but finally stopped trying. He got the green and yellow tractor half in the van back and used the van to move it over near the trees.

8. He explored the doors of the garage.

9. He ran the tractor into the trees and shoved over a poplar
tree. He decided to move the fir trees around. "Plant over here. Xmas trees." He tried to put a fir tree on the porch of the solid house.

10. He used the car carrier again. This time he used it to move the garage around. He set up the garage by the fence. He moved the greenhouse by the garage.

11. He took the small green plastic trees and tried to set them on the porch of the solid house. He did so with one of them; he set two others near the house.

12. He took the gas station out and found that the doors opened. He tried to put the ambulance in and then the pickup. He got both in eventually.

13. He knocked the fence down when he moved the garage over by the fence but he didn't bother to reset the fence.

14. He took the racer out. He took the van out and put some small animals in it.

15. He ran over to the farm and took the animals out of the van. He put a cow in the corn crib, a small pig in the dog house and a small pig out in front of the buildings. These were the extremely small animals.

16. While setting the small animals out he commented about needing more, "Gonna go get em." He took van back over to the animal pile.

17. He moved the brown barn out. He sent the van back with animals and put one tiny animal into it and a cat from the larger animals. He took the top off the shed part of the barn and put the animals in this way. He made the cat stick his head out the upper part of the open dutch door of the barn.

18. He moved two of the planes around in the air: first the red, then the grey. He had the grey plane crash into a tree in landing. He returned them to near the small object box and the animals.

19. He took the train out and ran it around. He experimented with it using different parts of the train. He found out that the end would not allow another car to hook onto it. He decided to leave the middle car in.
20. He took one of the little people out and abandoned it on the floor.

21. In running the train, he set a tree in its path and said, "Here's one in the middle of the track."

22. He put the metal gas pump and the esso sign on the car carrier and moved them. He took them to the gas station.

23. He took the dump truck out now and then put it back after looking it over.

24. He took pickup and sent it over to the garage of the gas station. He said, "Doesn't have a battery. Being put in there," he said.

25. He opened door and put the pickup inside the gas station.

26. He sent the jeep over to the gas station; it stopped by the pumps. He went through the motions of filling it (pretending). He sent it over by the trees next.

27. He took the split level house out and set it beyond the gas station. He said, "This man lives close to the service station." He put a car into the split level garage. He commented "can open door". He took the roof off the garage of the split level house so that he could see better.

28. He set a fir tree out by the split level house and also a small green plastic tree and a palm tree.

29. He set up telephone poles near the split level house. He used four poles, two parallel to another two.

30. He now worked on a fence for the house yard and set it up.

31. He opened the garage door of the split level house and then lifted the entire house to get the car out. He shut the door when the car was out.

32. He picked up the greenhouse and set near split level house. He took the flowers out and tried to set them on the porch of the house; he decided they would fall over and put back (red flower row).

33. He indicated verbally that one of the little plastic men came
out of the door of the split level house and got into the pickup and went away.

34. He picked up the green tractor whose top came up. He opened the top of the tractor. He took it over to the split level house and parked it in the yard.

35. He sent a racer to the fence of the split level house.

36. He put the garage on the car carrier again and took it over by the split level house. He opened the garage doors. He ran the racer into the garage and shut the doors.

37. He picked up the school. As he moved the school out he said, "a church." When he was asked about the building later, he said someone lives there.

38. He moved the split level house out a little further and rearranged some of the surrounding items.

39. "Got lots of visitors at my house" (split level). "All friends."

40. He sent the dump truck into the yard of the split level house on the car carrier. He had trouble backing the carrier out.

41. He took the cape cod house and set it near the split level house; the porch was in a new spot and not its original position.

42. He moved the pickup from its spot in the split level house yard. He loaded it with three people. He put three little plastic men on the porch. He said they were all visitors.

43. He was fascinated by the hood opening on the green tractor. He put it up and down a few times again.

44. He put the boat on the car carrier and took it over to the split level house yard. The examiner asked who owned the boat; he didn't understand. He said there were people in the truck but they were "gonna be on a boat when they go fishing."

45. He rearranged the fences slightly again.

46. The examiner asked again who owns the boat. He pointed to
one of the men on the porch and said, "This guy here. He's a farmer.

47. He sent a tractor over to the split level house and ran it back and forth. He was going to "plow the yard up and plant some seeds in there." "Whole bunch of things are going to go in there." "Even these." (He indicated the greenhouse flowers.)

48. He picked up greenhouse again. He took a little man and had him looking at the plants. He tried to have him walk in between the rows. He gave up at first and had him looking in the window. He got the man between the rows. Both men between the rows were in the center.

49. He rearranged the palm tree in the yard of the split level house.

50. He ran the pickup out from the split level house with a man in the back. The man dropped off; he said the man jumped out of the car when it was moving. The pickup turned over (accident). He asked, "Do you have a fire truck here?" The examiner asked what he wanted it for. The truck (pickup) was on fire, he said.

51. He took out the earth mover and sent it over to the split level house to dig up trees. He did so.

52. At the end of the time he was exploring the factory and opening the doors.

NOTES: He went right to the toys and started playing with real (at least apparent) involvement. Muttering (or talking) to self during his play, he was not shy. He was fairly verbal in talking about what he was doing.

XIX. Play Toy Test Record of Subject 19 (Female)

1. She went over to the corner and handled the little people first. She set up some. She then handled the barn (opposite end of toy pile) and then went back to exploring the rest of the other larger dolls.

2. Next, she started setting up some of the tiny animals (from
the small object box) by the wild animals. She continued to set out all the contents of the box including the tiny chickens. She put all these objects back into the box at the end.

33. She lifted the roof off the train station.

4. She lifted up the supermarket and looked at it.

5. She set out some of the farm animals.

6. She commented that the dog house was too little for the dog.

7. She moved the red barn by the animals. She said that the roosters "go on top of. Let this barn stay out," she said.

8. She picked up the brown barn and set it out. She soon put it back in its former place because she couldn't put the farm animals in through the doors. She rearranged some of the animals.

9. "Hey, this is a goose!" The examiner asked about the sounds they make. "Talk the same. They talk the same."

10. "Why don't I play cars and trucks?"

11. She noted that a stop sign was broken from the bottom. She showed the examiner that the ends were the same (good and bad one). And that was how she knew that the piece was a part of the stop sign. She put some of the signs out.

12. She commented that dump trucks go on highways. She took some of the dump trucks out and the train out.

13. She said that sometimes cars stop when trains go by.

14. She picked up the solid house and looked at it. She decided that it was funny. She put it back.

15. She picked up the poplar tree. She asked what kind of tree it was. She found that it came apart. She reassembled it and put it back.

16. She picked up the small metal garage. "That's heavy!" (in contrast to the lighter plastic items)
17. She now put some of the telephone poles out in place of the signs which were put back.

18. She indicated that the palm trees were Hawaiian! "These are Hawaii trees."

19. She asked what the alder tree was. She rearranged the alder tree and took it apart and put it back together and put it back.

20. She took out some more cars: tanker, jeep, car carrier, and red cars. "The white light is right here and shines and makes them stop", she said indicating a sign.

21. She played with them for a while. "Some tractors go on roads too," she said.

22. She took out the hot rod. "Is that a little hot rod?" "He's going to the gas station to get gas."

NOTE: She commented that the examiner had interrupted her reading. She was reading an interesting story. "We just got our second level books." She muttered to herself a lot.

XX. Play Toy Test Record of Subject 20 (Male)

1. He went over and took one of the little men out. He also picked up a pole.

2. He handled the farm animals and the farm buildings. He lifted the roof off the brown barn. He put a horse and man in the barn.

3. He reset the poles. He counted one row to be sure that it had the same number as the other. He decided that the signs should go out with the poles and moved the telephone poles.

4. He decided that a man was walking by these poles and since he was going to the factory which he had set out nearby, he had the little policeman to direct the traffic for the walker.

5. He took the ranch house out and put two plastic (small, solid) trees by it.
6. He asked what the greenhouse was. He opened it up. He took the red and yellow flowers out and set them by the split level house which he had moved out.

7. He asked if the corn crib was a storage place. He set it out.

8. He picked up the dog house and decided that he needed a small dog for it because of its size. He used the large one instead.

9. He picked up the chicken house and decided that it was a work shop.

10. He took the palm tree and set it down at the end of the room by the side of the sofa. He told the examiner that he can't whistle. He decided that the place where he set the palm tree was Africa. "Africa is far away" and therefore under the sofa. He didn't like fitting animals under the sofa so he put them at the side of the palm. He put wild animals there. He picked up the kangaroo. The examiner asked if it lived in Africa. He said, "No, it didn't." He used to know where it lived but didn't anymore." When the examiner said "Australia" he decided that Australia was across the room and under the table.

11. He picked up some more buildings and was annoyed with roofs coming off. "Can't pick up anything..."

12. He picked the factory up again. He asked what if he decided it was a factory. (Answer was fine.)

13. He took the blue and orange cars out and put them between poles.

14. He took one of the signs away and put the policeman there.

15. He took another little man and put at the gas station.

16. He took another little man and said he worked at an airport. He said, "Can't find an airport. Well, I'll make one." He decided the airport was the space under a table in the room.

17. He picked up the penguin and said penguins are at the north pole. He put it under the sofa.

18. He knew the names of most of the wild animals.
19. He picked up the little mailman. He said he needed to have a human house and set by the ranch house.

20. He put out the gas station pumps by the gas station and the esso sign.

21. He put out the school house. He knew what it was. He commented on the need for children for it because the only ones in the toys had diapers on. He also said the school had to be closed enough to the houses for the children to walk to it.

22. He commented on the little objects in the box. "This (chicken) thing shrunk!" He set out the boxes.

23. He put out more jungle animals.

24. He made a pen out of the fence pieces for the cow and put her in it.

25. He asked about examiner's note taking. Even though the examiner told him that she was just taking notes on what he liked, he was still trying to figure out why she was writing things down later.

26. He made another pen and put two horses and a colt inside.

27. He made a pen for the "Billy goat".

28. He put the supermarket out now - down the room - not right near the jungle animals. He told the examiner that the jungle was supposed to be far away. He put the five and ten by it.

29. He picked up the mountain lion and said it looked like a mountain lion. He put it on the world globe.

30. He picked up the lounge from the box and said it was to lay down on. He put it by houses. "It matches. Look. There's white on this house and green on this house." He put out the green and white lounges by houses.

31. He told the examiner that a friend has some jungle animals just like the ones she had.
XXI. Play Toy Test Record of Subject 21 (Male)

1. He went to the cars immediately. He took the van, the tractor, dump truck out. He ran the van around and tried to put it between the rows of buildings in place. The school and supermarket were too close so he ran it between the supermarket and the train station a little way and then backed it out and put it back.

2. He set up one of the farm figures.

3. He handled the construction truck.

4. He sent the ambulance over the front of the school and back.

5. He felt the supermarket window.

6. He tried to put the ambulance into the van.

7. He set up the pump right in front of the cars. He ran the van between the pumps.

8. He ran the car carrier around. He put the pickup on first (then off). Then he put the two racers on it which would not stay on.

9. He lined up the tractor and racers by the pump.

10. He went over and explored the greenhouse. He ran the car carrier around behind the greenhouse and the ranch house.

11. He set up telephone poles and said they belonged on a street. He set up all of the poles.

12. He answered questions only with a nod.

13. He picked up the little plastic trees and put them between the telephone poles. He also added two signs here.

14. He made a fence enclosure and put the gorilla in. He also added a lion and a tiger which were taken out when the enclosure was discovered to be too small.

15. He took the plane out and ran in the air (over the telephone poles) and set it down by the enclosure. He did the same with the other three planes.
16. He ran the van down his street. He turned signs that faced him. He ran construction truck, van and car carrier. He seemed to want to put animals in the van but just set the gorilla out of the enclosure instead.

17. He added more than two signs to his street.

18. He now pushed the poles and the enclosure together and put the animals back.

19. He played with the racers, crossing the floor, etc.

20. He set the garage out and then ran the ambulance into it. Then he found two little cars for the car carrier. He ran the carrier and cars around the room. "Saw before - in a big store."

21. He began to open up and talk freely to the examiner.

22. He asked the examiner if the van came apart. The examiner said yes. He took it apart and set it by the garage apart.

23. Suddenly he seemed to see the farm animals. He wanted some of them - cows, pigs, and horses. "Gonna make a fence for them."

24. He worked on constructing a fence. "See there's gonna be two hooked on." He told the examiner that he was going to put the cows and pigs into the enclosure. The horses were able to run around.

25. He sent the red plane in the air and crashed it on the fence. "Now he killed the pig." He sent some more planes into the air.

26. He tried to make the animals stand; the sheep wouldn't.

27. He looked at the horses. "All boys." This one wasn't (a cow). He told the examiner that the big one was a cow.

28. "What's all this?" (small object box with little chair, boxes, chickens) He said he needed a chicken house. He asked, "What's this?" (shed) He decided to use it for baby horses.

29. "Where's a dog?"
30. "Sure is getting a lot." (shed and animals)

31. "Need a billy goat. Need another. Now I need a baby." (billy goat)

32. "Need a sheep dog. Seen a barn. Great big one with cows and horses. Me and my Dad went to another farm and rode a horse." These comments were in answer to question about whether he had seen some of these animals, etc.

33. He took the trailer out. "These guys is in the desert living in the desert." He asked if he could move it.

34. He took dog house out of original order.

35. "Gonna have trees around. Little ones and great big ones too." He put some out near trailer. The examiner asked if he had been in a trailer. He said no but once his folks had one.

36. He sent the van over to get two hot rods, two cars and two trucks.

37. All of a sudden he said, "There's my chicken house. All my chickens ran away so I am gonna sell this." For it he was "gonna get two tractors". He proceeded to get a whole series of cars for the chicken house.

38. He really seemed to be away from any beginning shyness.

39. He took the greenhouse out and set it near the trailer. He took the roof off and noted the plants. "Put some water in." He told the examiner that "go in here and plant all day and night."

40. He moved over and put all the farm animals away which he had played with before. (colts, pigs, etc.) He also put the fence and shed away.

41. He went over to the tractor. He said he was working on the green tractor. "The battery's down. Gonna put new one in." The motor caused trouble next. It blew up. "Gonna have to take out motor and put new one in."

42. He fingered the ambulance and left it.
43. He picked up the garage. "This one just right." "Show you how fast it can go." He used for the little sport car (racer) which he ran around.

44. He put back the tractors, dump truck, and jeep. The examiner asked him why he did so. "Cause he don't work that much." (man in garage)

45. "Don't need this." He sent the van back.

46. He decided to put all but one racer back now. So the racer, little cars, car carrier, etc., went back. He told the examiner that the man was "gonna have a racer." He put it in the garage.

XXII. Play Toy Test Record of Subject 22 (Female)

1. She went to the little girl and the small dolls and explored them. She tried to make the large doll stand. She couldn't and put it back.

2. She went to the wild animals, explored and then started to set out the animals. She put three lions and one tiger in a row and added a hippopotamus. The examiner asked whether she knew their names - she said yes "except I can't say this name very well." (pointed to hippopotamus)

3. She put the little kangaroo with the big one. She put the penguin and the alligator out. She put the mountain lion in the lion row after initially setting him out in front. She put the stork in front of the lion row. She set the deer staring at the lion and tiger row.

4. The examiner asked her what they were doing and she said they were going to the desert. She was getting the horses out of the farm pile so that they could go too. She picked up a cow and said, "This cow is in the desert waiting for the other animals that are coming." She put small animals with similar big ones. She told the examiner, "The momma horse has to take care of her babies and so does the kangaroo. They got to get their babies to grow like they are." 

5. She picked up and set out a dog. "Here's Lassie." She put a horse by Lassie... she told the examiner that he (Lassie) was going to go hunting in the desert to get food for the baby. She picked up some
of the other dogs and set them out. "This is Lassie's little pup." (smaller ones).

6. She picked up and tried to set up one of the sheep. It would not stand. "Wonder if the sheep is too fat to stand up?" She finally put it back.

7. She set out chicken and ducks. She indicated that the "horse is going to come get one and give it to the other horse." (a chicken) The examiner asked her what the horses eat and she said hay but "eat something else out on the desert." "And hey is a word too."

8. She picked up one of the dogs and said it was a little dog which looked like their own. "Ours is a black and a brown and a white." The examiner asked if it was the same kind of dog as the toy one (a collie). "It's another kind of dog."

9. She ran the horse by the dog and back to the others and said they already caught the chicken. "Little horse is gonna get mad 'cause it (chicken) won't hold still."

10. She decided to "get little trees so the gorilla can get something to eat." She put them out (almost all). The gorillas are out of food. "Go over to a tree."

11. She picked up one of the sheep and said it was fat. "Woo, ya, ya. This gorilla is gonna get him. All the others (sheep) ran away." She had the gorilla grab him and run away. She decided to go back and try to get help from the horses. The horse stomped on the gorilla. She said the horse is a little sad because the gorilla is dead.

12. The lions came over and saw the fight (between gorilla and horse). The lions now eat the gorilla. "One guy kills another guy, they eat the guy who is killed."

13. She went back to dog designated as Lassie and the ones set out with her (designated as babies). "Lassie and babies have to take care of the other animals."

14. She had the alligator attack the horse. The lions take care of the alligator. "So who gets the worst is the alligator." 'So they (lions) told the horse to get away so they could eat the alligator." The fight scared the little horse so the mother took him home. But the cows are coming to see the fight. Now Lassie and babies are behind
them. "Babies should be in the back anyway so they don't get in..."

15. She got the hippopotamus out of the group now. She told the examiner that the strongest live away. "Gonna come over to kill. Want the owners cause starving." Had moved out the farm man (hay man).

16. "What's this?" (indicated greenhouse) She explored it and left it.

17. She now went to the lions again and told the examiner that the people don't want the lions.

18. She explored the red barn and its door and moved it out while doing so. She said that she knew that she could make it go in the door. She took the horses and said the big wouldn't fit in but the little would. She had trouble getting the door open, therefore, she pretended the farmer called out to the horses (to keep out).

19. She played with the lions again. "Farmer going to give them raw meat to make friends." (maybe hippopotamus too). She did so and was going to the hippopotamus which was not friendly because it went away.

20. She picked up the babies from the dolls and tried to make one ride on the green colt. It wouldn't do so unless held so she left it.

21. She told the examiner, "Didn't call Lassie (man of farm) because Lassie doesn't like lions."

22. She decided to move trees from first position. "Bring some trees over to the house so they (animals) can eat."

23. She found the little people but didn't use them; they reminded her of the other farm people though. "Ya, I forgot the people." She picked up man with gun. "This is the old man with the crooked stick... know a story about." She said of a small man, "This man is small. I better leave." She set out the farm people near hay man.

24. She picked up the babies and put them by the men (farm people). "These babies don't have no momma."

25. She decided the baby and the baby lion could play together. "At first the baby lion didn't like him but now they are friends," she
said. A new alligator came to get the baby and the king of beasts heard it. So he came and saved the baby and killed the alligator. (This is a verbal account.)

26. Now the lions get over by the men; they are licking them. Another lion tries to get the chocolate milk from the girl with the milk pail.

27. She used the leopard as a dotted lion. She told examiner that the yellow lions were called lions too. "But when everyone tells me this is leopard called so."

28. She now began to pull out the Cape Cod house and the little solid house. She set them out by the barn. She told examiner that the people who take care of the animals have these houses.

NOTE: Always wore cowboy boots she said.

XXIII. Play Toy Test Record of Subject 23 (Male)

1. He went to the greenhouse and took the roof off. "It's a flower garden." He had trouble putting the roof back on. He pushed the greenhouse back into place.

2. He picked up a dog from farm animals.

3. He went over and picked up the corn crib. He told the examiner that it was where "you put the hay".

4. The examiner found out that he lived on a farm in South Dakota for two days.

5. He picked up the red barn. He said it was where you milk cows. He put it back and handled the brown barn.

6. He picked up the Cape Cod house. He handled it and took the shutters off. He pulled window out of the wall and put it in again. He put in all of the shutters again. He put it back.

7. He picked up the trailer. When first here in Tucson, "lived in a trailer then moved to a farm," he said.
8. He told the examiner, "I ride the green bus." He knew the driver.

9. He picked up and put back the porch by the ranch house. "That's where they ate the chocolate milk."

10. He told the examiner that he had a whole bunch of farm toys at home.

11. He took the pump and pickup out. He took a number of cars out (7): racers, jeep, blue car, tractor, construction truck.

12. He went back to the red barn and took it out. He put a cow in it and said it was a "mother bull".

13. He put the alder trees in front of the school which he had moved out. He lined up cars by the front of the school. "A church" was his explanation of the building's use, in answer to questions.

14. He picked up the gas station and added it to the group of buildings he was using.

15. He continued to take out more cars: van, car carrier, tractor. He played with the van a while and tried to find an animal which would fit in it. He finally found the tiny animals in the box and used three. Then he went over to the larger animals and tried to put a dog and sheep in. He took them out when the door wouldn't close on the van. He ran the van over to the red barn and unloaded the animals. He sent the van over to the animal pile again and put two dogs on the top of the van. He sent it over to the barn. One animal fell off going over. He put the animals on top of the barn. He said the cow couldn't be on top because it was "in there getting milked."

16. He put school back.

17. He sent cars under his leg and across the room: racers, pickup, tractor, gas truck, and blue car.

18. He found great pleasure in sending the cars across the room: added the rest of the cars.

19. He had trouble saying words.

20. He continued sending the cars across the room; he sent
them back across the room the same way.

21. One car ran into the barn coming back. "That car he had a wreck in the barn." "Once he scared my mom when he ran into a barn."

22. He found great pleasure in shoving the cars into the fence pile. One car ran into the trees and knocked some down. "He knocked down some trees and knocked some down. "He knocked some trees down."

23. The blue car had been shoved into the wild animals pile. He pulled out the blue car. He tried to run it between the row of buildings which were in place (market and fire station row). He picked the market up and took it out.

24. He continued again to send the cars across the room, both outward and toward the piles of toys. They hit the barn and the school (in place still).

25. He decided to use the turkey from the animal pile. "Mother turkey is gonna have a ride." He put it into the dump truck.

26. He went back to shoving the cars around again and said, "Everyone having a wreck." The examiner asked him what happened when people had wrecks. He said, "Dies."

27. He asked what the police station was, the examiner told him. He picked it up and explored. He said that he had never seen one but had seen a policeman.

28. He sent the racer across the room again. This time it went under the table.

29. He picked up the van and took it apart.

NOTES: The only autos, etc., that he didn't use were the train, the ambulance, the red plastic car, and the blue boat.
XXIV. Play Toy Test Record of Subject 24 (Male)

1. He took school out and added trees by it. He took out the garage, the orange car and the pickup. Then he worked on the fence pieces and put them around the yard of school (which was to be a house). He put signs in a corner of the yard, then took them out. When he put the trailer in the yard, he found the trailer was too large for the yard and moved it by the house. He switched the garage and the trailer around on opposite sides of the school-house.

2. He was asked if he had been in a trailer. He had never been in one but his cousins in Pennsylvania live in one. He started to give their names but couldn't finish.

3. He moved the greenhouse out and set a man in front of it.

4. He ran the van out and tried to put animals into it.

5. He put a wild bird (a stork) on top of the school-house building. Then he moved it on to the trailer top. "Looks like a bird that eats fish."

6. He put metal and plastic pumps out and put the van by them.

7. He explored the wild animals and then the box of small objects and animals. He took one out and put it between the school house building and the trailer. He said it looked like a tiger. He said it was "supposed to be a statue or something."

8. He ran the tractor out and back.

9. He ran the tractor out and back.

10. He took the boat and car carrier out and put the boat on the car carrier out and put the boat on the car carrier and ran it over to the side of the corner. The examiner asked if he had ever been fishing on a boat. "Ya, once Lake Erie."

11. He took the split level house out and explored it. He found doors opened. He tried to put a car in its garage. The racer was too big but got a smaller car into it.

12. He took a red barn and tried to put a cow (large) into it. It
wouldn't fit so he put the barn back.

13. He took a brown horse with black markings out next and set it by the garage.

14. He took factory out next and put a little man on the steps and a dog by it. "Meeting room or something or a bank."

15. He took one of the house porches out and put it in front of the school.

16. He put a little man on the steps of the split level house. He also added one of the farm women to the split level house porch.

17. He took the little solid house out and put another little man on the steps.

18. He took a dump truck out and put it by the greenhouse.

19. He put a dog in the van. He ran the van out by the wall and took the dog out.

20. He put another tree in the yard of the school house; added first tree after the trailer was removed from the yard.

21. He put the orange car under the school house porch.

22. The examiner asked if he had ever ridden a horse. He answered, "Yes, been on a black stallion."

23. He took the ambulance out and put it by the factory.

24. He took a dog from the animal pile and put it in the school house yard. He said it was a big German shepherd. The examiner asked if he had a dog at home. "Yes, a Mexican chihuahua, which is part terrier. Bit my brother and me."

25. He volunteered the information that he had a bunny at home. He showed how big with his hands. The examiner asked if he kept it in a pen. "Yes, don't you know how to raise rabbits. Sometimes keep in a pen and sometimes loose."

26. He put a palm tree by the trailer and the ranch house. "Make like a street."
27. He took one of the babies and forced it on the horse's back so it could ride. He set up a second horse with the other baby and put both by the garage. He had trouble making the second one stand. He solved problem by changing to another horse. He tried a variety before finding one that suited him. He finally said, "Had to get a different one.

28. He picked up the tiny horse and decided that it could be the colt of one of the two horses.

29. He put the barn shed behind the ranch house.

30. He put the second porch between the trailer and the ranch house and put the jeep under it.

31. He took palm tree out and set it over further.

32. He took red plastic car out and ran it over to the ranch house. It wouldn't go in a door so he took the roof off and put the car in. "Got a car in, had to take the roof off."

33. He placed four telephone poles out.

34. He took the gas truck and the dump truck out and put in front of the houses. He said that it was a two lane street there.

35. He put tiger on the factory now. He put leopard on the ranch house. "There's going to be an animal on every house (still called them statues)." He took out the mountain lion - called it a coyote - and put it on school house roof and then moved it to the garage roof. He put the reindeer on school house roof.

36. "These are all statues" pointing to ones on houses (animals).

37. He moved the reindeer to the street. "There is a real deer on the street." He took farm man with the gun and put him near the deer. "This man has a gun so he's going to shoot him (deer)." He took other animals (except bird) off the houses and used them to surround the man and the deer (leopard, lion, and coyote). He took the German shepherd out of the yard and had the dog attack these animals and win. The man shot deer but the German shepherd carried it to the yard.

38. He took the van out and ran around. He knocked the man
with the gun down. The ambulance came out and took the man over to
the factory. The ambulance drove on the rail to the door and "just
throws him in." The factory is now a hospital. The ambulance ran
around some more. He gave it a shove and sent it flying. "Oh, oh, a
reckless driver."

39. The train station was moved out. He said it was where the
ambulance driver lives. He put the ambulance on the platform and
then took it off and replaced it with the boat.

40. The examiner was asked, "What kind of a boat do you think
you have to have to go out to sea?" "Big," she said. "No, power," he
said.

41. He took the tiny dog house and put it on the factory railing
step. He found one of the tiny sheep and showed it to the examiner as
a dog. He attempted to put it in the doghouse with the comment, "If I
can get it in."

NOTE: He yawned as we came in and said he didn't get much sleep the
night before. "Didn't sleep most of the night." The examiner
asked what he was doing. Watching TV with his parents he
said.

XXV. Play Toy Test Record of Subject 25 (Male)

1. He took train station platform out.

2. He took esso sign and plastic pumps and placed them by the
wild animals.

3. He set school out by the platform, then poplar tree by both
train station which was pulled out slightly (not near platform).

4. He took red plane out and set by wall.

5. He set four poles out with great deliberation.

6. He seemed to be backing self into a corner. He had to take
great pains to reach things in the corner and not upset what he had
already arranged.
7. He set out other three planes by the first one, red, blue, grey and put all against the wall.

8. He took the five and ten store out and put it in the middle of the space.

9. When the examiner asked him he said he didn't know what the building would be yet.

10. He took police station out.

11. He set ranch house and porch out carefully in position as if one unit.

12. He put sign out near police station. When examiner asked about it, he said "for roads."

13. He worked with the fence pieces and set up a yard enclosure which he put by the ranch house.

14. He put alder out by ranch house.

15. He was very quiet and not talkative.

16. He set out garage between the poles behind the supermarket.

17. He put brown barn by the police station (against the wall).

18. He moved the planes down the side of the wall, so he could set the barn against the wall.

19. He started to put animals out and selected each one with care. He put a horse out. When the examiner asked him if he had a horse he said, "No, but I know a guy who owns some and I've ridden on them." He added a calf, goat, pig, etc.

20. He put a little man in front of the school. He added more animals, cow, green calf, etc.

21. He took extreme care in picking up the animals and setting them out.

22. He put palm tree out by the railroad platform.
23. He picked up the trailer. He had never been in one but has a friend who lives in one.

24. He put the Cape Cod house by train platform.

25. He put the solid house out in front of the ranch house. He put the fir tree by it. He tried the fir two or three places before settling on the selected site.

26. He set red barn over by the other barn. He placed it next to the police station first and then placed it parallel to the brown barn and against the wall.

27. He took the church out and set between train station and police station.

28. He put dump truck over by Cape Cod house. He put blue car by police station and then moved it to train station.

29. He had to use care in leaning over the objects in position and reaching for various cars. If he moved something, he carefully put it back.

30. He took the orange car and ran it over to the school and set it by the side. He placed racer by ranch house and another racer by the solid house. He ran jeep over to the trailer. He put blue tractor by the farm barns and also the yellow and green tractors. He took part of the train out (the engine) and then added another part (last car). He put together the two train parts and ran it a little.

31. He put the fir tree by the police station.

32. He took out the solid green tractor. The hood was up. He stared at it puzzled for a moment and then pushed it down. He set it by the Cape Cod house.

33. He took gas station and set by police station.

34. He took car carrier out and asked about it. When examiner said, "What do you think?" He said, "carries cars."

35. He asked about the buildings again. "Is this one for cars?" and pointed to the gas station. The examiner said it could be. He backed the car carrier by the gas station.
36. He put poplar tree between the barns.

37. He set cat out so that it was looking in red barn window and then put out a collie.

38. When asked if he had been on a farm, he answered "once".

39. He set another cat out.

40. He took the ambulance out. He knew its name. He set it by a pole, then put it by the church.

41. He took the gas truck out and put it over back of the solid house.

42. He put out chickens and more animals. He named the animals.

43. He looked at a box with little animals and objects.

44. He took up a boat. He didn't know whose boat it would be. He searched for a place to put it. He put it by the ranch house.

45. He ran the pickup truck over to the solid house.

46. He ran the van over to the barn units.

NOTES: The examiner asked him about the town and buildings. Supermarket and five and ten store were just stores. Factory was "for tower," "want to get babies," "sort of like a hospital."

XXVI. Play Toy Test Record of Subject 26 (Male)

1. He went over to the wild animals. He started putting some together. He worked mainly with lions.

2. "There's different kinds of animals on the farm." "From the jungle" was his comment concerning the wild animals.

3. He picked up some of the farm animals. He named some cows with the black spots. "A baby pig." He set up large pig and
baby pigs. "They're following their mother."

4. He put more wild animals out with the farm animals. He said they were going to the lion group and are friends with the wild animals set out.

5. "Those are lions," he pointed to them. "And they go to the circus." When asked if the farm animals were going too he answered yes. "They're all friends." They know they are not supposed to.

6. He picked up the brown and white dog. He asked, "Lassie." The examiner told him that it could be if he wanted it to be. When asked if he had a dog he answered yes. "He's the best dog in the whole world. He don't bite. He don't do nothing." The examiner asked the name of the dog. "Puggy-wuggy. Is brown and white. She's a girl."

7. He talked about another dog. "Got a mean dog too." The examiner asked a name. "Toughie. He could kill a deer." This dog was his brother's.

8. Animals were now just going to the cars when the examiner asked him. He called the cub lion a cat. "Is this a cat?"

9. He put out farm animals now. He finished putting all of them out and then put out the rest of the wild animals. This was no real order to the animals.

10. Then he put the tiny set of animals out with the rest of the animals and put the lion group first set up with the rest of the animals.

11. He told the examiner. "Seen the cat fell down on his back and he's dead." The examiner asked him where he saw this. "On television."

12. He now set up little people and the farm people. He knocked one of the little people down so he knocked them all away.

13. He went over to the greenhouse and asked what it was. He took off the top and found how the plants came up. He knew they were flowers. He left greenhouse after he put the top on again.

14. He set some telephone poles up. He set four poles, the palm tree, and three of the small plastic green trees by the greenhouse and then he shoved them back.
15. He started getting the cars out. Two dump trucks first, then the train parts, the jeep, another dump truck. He set them by the wild animals (not in any real order).

16. He took the van out and set it with the rest of the cars.

17. He looked around and then got the car carrier out.

18. He took the tractor and other cars out and lined them up with the rest of the cars by the wild animals.

19. He commented on one "Here's a baby tractor."

20. Now he took out the planes. They went in a line by the trucks and the cars. Then he was sending the planes back in the same position that they were in (in the beginning).

21. Now he put the cars back in pairs to their original spot. "All the animals are going in too."

22. He pointed to one and said, "That some of these lions are mountain lions. Mountain lions are pretty rough. They're boys."

23. He pushed all the animals back into their beginning spot and said, "I'm done playing with them."

24. He went over to the buildings and took some of the tops off.

25. He went to the red barn and found that the bottom opened.

26. He discovered that there was another barn (the brown one). He lifted the top. He commented "That's the silo." The examiner asked if he had ever been on a farm. "My daddy works on a farm."

27. He explored the trailer. The examiner asked him if he had been in one. He hadn't. "My gramma lives in a trailer."

28. He picked up bunches of animals and put them in different buildings. He lifted off the tops and dumped them in. He put them in the trailer, the split level house, the brown barn, the Cape Cod house, the school, the train station, the church, and the factory, and the chicken house. The buildings were not moved when he did this. He just appeared to want to use the buildings as containers.
29. He picked up some cars as well as animals to put in the fire station and the police station.

30. The examiner asked him if animals lived in houses. "Yes. Lots of animals live in my house."

31. At 10:37 he asked to go back. He didn't want to play with any more of the toys.

32. The examiner asked him if he knew what type of buildings some of the buildings were. "Don't know," he said. He gave answers of white, red, etc., when asked to guess. When the examiner pointed to the church, he said "church".

NOTES: Although not a shy boy, he did not talk every minute but would respond with more than a yes or no. He elaborated on things.

XXVII. Play Toy Test Record of Subject 27 (Male)

1. He explored cars, just lifting up and looking at them.

2. He took van out. He tried to put the pickup in but it was too big so he put a small car in it.

3. He backed the van between the train station and the supermarket. He ran it back to the pile and took the car (small one) out from inside.

4. He moved the gas station and the fire station out somewhat and explored the opening of their doors.

5. He went back to the cars. He tried to hook the jeep and racer together. He couldn't do so; so he put the jeep back.

6. He went over the cars with great care and selected some for use.

7. He put the metal pumps in front of the train station.

8. He took the van out again and selected four cars. He put the small orange car in the fire house, also the blue car.
9. Inside the gas station he put the gas truck and the dump truck.

10. He lined the gas and fire stations up together now.

11. He took the car carrier and put the pickup back.

12. Now he took the cars out of the buildings. Since he had trouble getting the cars out of the buildings by the doors (which he used to get them in), he just lifted the buildings up and pulled the cars out.

13. Now he put the blue and orange cars on the car carrier. He sent it around the edge of the gas station, between the fences and around the police station and by the supermarket.

14. Next he had the dump truck follow the same route and then sent it over by the houses.

15. Now he sent the orange car (after taking it from the car carrier) over to the barns.

16. He shoved the brown barn out of the way and explored the doors of the red barn. Then he set it back.

17. Now he sent the jeep over to the trailer and tried to use it to pull the trailer. It wouldn't hook up, therefore, he sent the jeep back. Next he sent a tractor to try to hook to the trailer to move it.

18. He lifted the roof of the trailer and set it back. He lifted the cabana beside it and set it on top of the trailer now.

19. He sent another tractor to the trailer.

20. He explored the supermarket next to see if the openings would open like the fire station, etc.

21. He explored the planes and relined them (3 of them) and left the one out.

22. He found that the van and van trailer came apart. He put a part of the van on the car carrier and backed it over to the fire station and tried to put it inside (would not go in). He picked up van parts and hooked them together again.
23. He moved the train out carefully and put it back.

24. He now explored the garage. He opened the doors. He set it down. He turned it around and opened the doors. He now put the dump truck on the car carrier and sent it over to the garage and backed up to the garage. He sent the dump truck into the garage.

25. He took the telephone poles out now. He knew what they were. He put four poles on top of the van and a number inside the van and sent the van over to the truck pile. He sent the last four poles over by the car carrier. Now he set up the poles. He set them around the buildings without moving the buildings.

26. He picked up the trailer and moved it.

27. Now he set a pole on top of the red barn.

28. Muttering to self at this point.

29. He moved the fence pieces and the brown barn out to position. He set up the fence pieces. He was able to set the fence together without asking the examiner how to do it. He was able to put the fence pieces together on the floor.

30. He told me that a farmer lives in the trailer. In response to questions, he told the examiner that he didn't own the farm. "He just works there."

31. He set up an enclosure with the fence pieces now around the barn. He left one piece of fence out after finishing and moved it from the barn area.

32. He put the poles now around the farm.

33. He put the animals in the enclosure.

34. He decided that the rooster was to have a special position. "Rooster goes on the fence if it stays." He solved the problem by setting a fence piece across the fence corner.

35. Now he pulled the rooster off the fence and removed the fence piece to add other animals to the enclosure (farm animals).

36. He took the roof of the brown barn off and added animals
inside and then put the roof back on.

37. He appeared to take great pleasure in some of the animals. "Two little baby ones." He showed great glee about the pigs.

38. "These get so tiny in there," he indicated small object box. He still took the animals and put them in the enclosure (some of them).

39. He took the car out of the garage and set the garage by the barn.

XXVIII. Play Toy Test Record of Subject 28 (Male)

1. He went over to the poles first. He set up a fence by the school. He also put two small plastic trees and telephone poles by it.

2. He moved the station platform out.

3. He picked up the sign and said it was "railroad sign". He placed it in front of school.

4. He took van out.

5. He noted about the ambulance, "Here's a red cross truck."

6. He asked what the van was. When the examiner asked him what he thought, "Looks like a cattle truck to me."

7. He picked up the greenhouse which he was asked about. "Ya, it's one of those corn houses you put corn (in)." He set it out.

8. He set the trailer out now. When asked whether he had been in one before, he said that they had lived in one once but they now lived in a house.

9. He decided to rearrange the "barn stuff here". He put out the chicken house and the shed. He commented on the fact that it would provide some shade.

10. He went over to the trees. "Here's a Christmas tree," he said about the alder.
11. He moved the gas station and the pump.

12. He put the dump truck and the orange car on the car carrier.

13. He moved the steam shovel.

14. He found the farm people. "Woo, farmers. Got to put the farmers out here." He moved the hay man out.

15. He went over to the animals (farm) and set them out. He commented to one of the large horses as he set it by the farm buildings. "This one she's pregnant." He noted that a goat was a "billy goat" as he placed it out.

16. He set out some more alder trees.

17. He put two horses by the opposite ends of the red barn and said, "These two are tied up."

18. He moved the split level house out.

19. He moved to the planes. He took them out and arranged them with the comment "Looks like a stair" (indicated climbing with the fingers). He said the blue plane was a passenger plane. He moved a couple of planes into air and back to position.

20. He moved boat out.

21. He moved the fire station. "Here's another gas station." When doors swung accidentally as he moved it he said, "I opened the door."

22. "Here's a house with a garage."

23. He moved the train station out. He said he had to get some cars over. He took the roof off the train station and tried to do the same to the metal garage.

24. He moved the train out and imagined it as "big school bus". "Wonder where the school is. Oh, now I see. Thought it was a house." He moved the school building out.

25. He picked up the factory. He decided it was a mining house. He moved it over by the lake (imagined) which was near the coffee table.
26. He sent the car carrier out to the mine and then remembered that he had forgotten to bring them to the gas station. He took them to the gas station.

27. He added cars out by factory-mine: two dump trucks.

28. He went over to the box containing the tiny objects. He took it over to the middle of the floor area he was using and took the animals out. He set the animals up.

29. He went over to the wild animals. He said about the lion, "He's sure mean." When the examiner asked about different ones he was handling he named them correctly.

30. He picked up the brown and white dog from the animal pile and told the examiner it looked like Lassie. He had it moving around and when the examiner asked about it, he said that it was "running all over the place." He decided it was going to sleep on the porch of the split level house.

31. He went back to the wild animals. He decided to get some trees and make a jungle.

32. All of a sudden he noticed that the factory-mine cars were still at the gas station. "Cars held up too much." (at pumps) He sent them back. There was a play with the cars in which the dump truck became involved in a wreck. The ambulance was sent out to the wreck to bring them back to the factory. He parked the ambulance by the factory.

33. He commented concerning the factory and other buildings. "Think I had better put some telephone poles in case anyone calls."

34. He picked up the stores. He took roff off on one and put it back.

35. He said, "Think I'm going to make myself a museum with lions and tigers."

36. He set up fence to put animals in. It wouldn't go together so he explained that the animals in the enclosure were escaping.

37. He took the grey plane into the air and around and down.
38. He picked up the garage and set it by the solid house. He noted about the solid house's roof, "This one won't come off." He commented on the metal garage being heavy.

39. He got signs out. He told the examiner, "This is going to be the highway out here." - indicating with signs.

40. He told the examiner about one sign, "This one is a red cross" + sign in black.

41. He sent the dump truck back to the pile for equipment.

42. He took the farm tractors out. He thought they were mining equipment at first and then told the examiner they were farm tractors. He sent them to the farm unit.

43. He decided to put the farming dogs out near farm unit. He took Lassie from the porch now.

44. He went back to the wild animals. He set them out. He set the camels out and away from the others. "Camels are in the desert." He decided to put them in the desert. He put the alligator in the water; he was in the lake which was by the factory. He noted that one of the kangaroo's was a "baby one". He told the examiner at first that he was lost and then he said that he found his mother. He put the hippopotamus over by the farm. He got the farm man with the gun to shoot the hippopotamus and then said they were going "Now to cook him."

45. He got the tractor out and said it was cutting the corn field.

46. He put a brown hippopotamus over by the wild animals unit and said it was a rhino. He described the horn but didn't know its name. He told the examiner it wallows in the mud and "has a horn there." (indicating forehead) He told the examiner it was not the same as the yellow hippopotamus.

47. He now played with the dogs which became hunting dogs who were going to get the tigers. He sent dogs after tigers.

48. He went over to the trees again. He told the examiner that the Christmas trees were not on the farm and put them in the jungle.

49. He added to his jungle: deer, buffalo ("They charge."), moose, and lion (which was the leopard. The lion was climbing a tree (alder) in order to jump on a gorilla. He had the lion do so and
indicated a fight. Then he sent the lion back to his mother (which was a tiger).

50. He took the van out.

51. He set the little policeman out to direct traffic. He told the examiner he "say hold it." He took the van down the street by the policeman to the barn. He said it was a farm truck now.

52. He told the examiner that he needed a truck to carry the trailer. He used the car carrier truck then the bus (train part) but neither would fit or work. So he said he would "park this." He set it by the garage and the farm group.

53. More telephone poles were set out.

54. He sent the truck out for gas.

55. He sent one of the planes up into the air. It was going across the jungle.

56. He went to the greenhouse and played with the doors. He did the same to the fire house and the gas station. He tried to put a truck into the gas station but it was too large. He went and got a smaller one so it could go in.

NOTES: He was a very verbal boy and not shy. In general, he had reasons for his actions. His talking was not just in answer to questions but also just to himself as he worked.

XXIX. Play Toy Test Record of Subject 29 (Male)

1. He picked up the giraffe and then moved over to the cars and ran the racer around and up between the buildings.

2. He took the van and ran it to the fence pile.

3. He set up some of the road signs in a line and put the pump by it. He ran the van in front of the signs and pump then put it back into the original line of cars. (sign and pumps by car pile) Asked about one of the cars and then told the examiner that "You have a choo choo train."
4. He went back to the giraffe again and put it in front of the pumps.

5. He picked up the penguin. He didn't know its name. He said, "Looks like an owl to me."

6. He handled some of the lions and explored the rest of the wild animals and set up some.

7. He moved the fence pile in front of the school.

8. He decided that there was to be parade of animals going in front of the school building. The examiner asked where they were going. He said, "To the jungle." The examiner asked if he had ever seen a zoo. "Yes. When I was in kindergarten. That's when I went to the zoo."

9. He mixed the farm and zoo animals in setting them up. He discarded a sheep which wouldn't stand and dumped it in small object box. He also discarded a reindeer which he had trouble making stand.

10. He got the rest of the wild animals out and started setting them up. When asked if he knew their names, he said all but the tiger (which he indicated). He said none were fighting; all were going their way.

11. He took the van out to the edge of the animals.

12. He picked the giraffe up again.

13. He took the little animals out that he had put in the van and set them up with the rest of the animals.

14. He rearranged the position of the hippopotamus on the end.

15. He asked the examiner what the greenhouse was and she told him.

16. He asked how to put the fence together. The examiner told him and he started construction of a fence. He had to hold the pieces in the air near his face to put them together. He complicated the adding of pieces together by holding them in the air. He made a straight line fence and tried to make it stand. It wouldn't, so he curved it. The examiner asked where he was to put the fence. "Over
there. Beyond animals."  (He pointed.) The examiner asked what he was going to use it for. He replied to put the animals in it, especially the horses.

17. The examiner asked whether he had been on a farm. "Yes! At Leodosa," he said. His family was going back there when school was out.

18. The examiner asked if he had any animals. "A black and white dog. Have two dogs."

19. "Caught two mice down at Leodosa." When he was asked if they were coming back in the fall, he replied, "Maybe, we'll come back."

20. He told the examiner they had some cats but a dog came to kill them. "He's a mean one. A darn old mean one."

21. He never got the fence completed.

22. He changed to playing with cars, etc. He sent the dump truck and the ambulance over by the plane. He sent the blue car and the racer over by the factory.

XXX. Play Toy Test Record of Subject 30 (Female)

1. The first thing she did was to set up the four small solid plastic trees on the floor in front of her.

2. She then added telephone poles in a straight line in front of her. Later she pulled two poles out of the end and used them to set up a parallel row of poles. Before she worked on the parallel row of poles, she started to make an enclosure out of the fence pieces. She couldn't seem to get it together the way she wanted to so she gave up and started on the poles.

3. She picked up the corn crib and found that the door opened. "Door opens."

4. She picked up the pickup and then set it down again (same spot).
5. She fooled around with the signs.

6. She pulled toward herself all the rest of the signs and the fence pieces. She worked with the fence pieces again. She picked up four little plastic trees and replaced them with the alder. She added the rest of the trees and put them out. The examiner asked her if she had seen all the trees, "I seen these kind," pointing to poplar.

7. She picked up the Cape Cod house and set it by the end of the poles.

8. She took the garage out and set it by the Cape Cod house.

9. She picked up the porch and asked the examiner what it was. She didn't know what it was or could be.

10. She picked up the trailer and when the examiner asked her if she had been in one she said, "I live in one."

11. She moved the following houses out: ranch and solid houses. She moved the split level house out and then moved it around.

12. She knocked the top off the greenhouse (accident). She knew what it was.

13. She took the corn crib out and the chicken house, and the dog house, and the shed (all moved out). She didn't know what they all were, except for the dog house. She now moved the barns around.

14. She reset some of the trees and moved them around.

15. She moved the fence.

16. She took great care in setting up the fence, and she set it up on the floor. She didn't need to hold it in the air and put the pieces together as some did. She almost completed the fence but didn't finish it.

17. She explored taking the tops off the brown barn.

18. She moved the greenhouse out and lifted out one of the flower rows.

19. She took the solid house and set it from the end of the street row and near the greenhouse. She put the palm trees nearby.
20. She got up and went over to the cars. She selected different ones desired. She put the jeep by the trailer. Then she moved the pick-up over in place of the jeep. Then she put the pickup in the garage. She set the tractor by the barn. She took the van out and moved it over by the ranch house and then ran it back to the pile of autos.

21. She set the pumps and the esso sign out.

22. She put the orange car in the van. Also, she put the blue car in. She put it in line with auto pile. She tried to run the car carrier up to the van so that the cars in the van could be run off and onto the car carrier. She couldn't achieve this so she just put them on.

23. She ran the ambulance out and back to the auto pile.

24. She took the boat out and back to spot by the supermarket.

25. She put a truck in the van.

26. Then she put the car carrier and the van back into their spots in the auto pile again.

27. She picked up a little man and put him in the trailer.

28. She took the roofs off the school and then the police station and put them back. Then she put a little man in the school. She moved the police station out.

29. She took the van again and ran it out and put it back. Then she got the gas truck out and the van and the car carrier. She took the little cars off the car carrier and ran them around for awhile. She then ran a number of the cars over and parked them by the box of little things.

NOTES: She said that she liked the trucks best. She knew the police station was a "jail". When the examiner asked her about the school building, she said, "Don't know." The examiner asked her what would you like it to be - a house, a school, a store, etc. "School" was her answer. She said she didn't know what the telephone poles were. Other children knew.

She was very quiet, although she would speak when asked questions. She appeared shy.
LIST OF REFERENCES


__________. "Letter to Mrs. Marian Qashu, April 2, 1964".