SELECTED CHARACTERISTICS OF THE CHILD'S SOCIAL ENVIRONMENT AND THE RELATIONSHIP OF THESE CHARACTERISTICS TO SUBSEQUENT MEASURES IN HEAD START CLASSES

Thesis for the Degree of Ph. D.

MICHIGAN STATE UNIVERSITY

JAMES P. WEBER

1968

This is to certify that the

thesis entitled

SELECTED CHARACTERISTICS OF THE CHILD'S SOCIAL ENVIRONMENT AND THE RELATIONSHIP OF THESE CHARACTERISTICS TO SUBSEQUENT MEASURES IN HEAD START CLASSES

presented by

JAMES PATRICK WEBER

has been accepted towards fulfillment
of the requirements for

Ph.D degree in *Education*

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MSE

Date

SELECTED CHARACTERISTICS OF THE CHILD'S SOCIAL ENVIRONMENT AND THE RELATIONSHIP OF THESE CHARACTERISTICS TO SUBSEQUENT MEASURES IN HEAD START CLASSES

By

James P. Weber

AN ABSTRACT OF A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Counseling, Personnel Services and
Educational Psychology

1968

ABSTRACT

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THE CHILD'S SOCIAL ENVIRONMENT AND THE
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SUBSEQUENT MEASURES IN HEAD START CLASSES

by James P. Weber

This study sought to examine the relationships between the social environment of the child as it existed during the four years previous to entrance into Head Start and the measures taken on the child's behavior shortly after entrance into Head Start classes.

In order to examine these relationships, the objectives of the study were: first, to conceptualize the social-system of the child so as to include all persons who regularly interacted with the child during each of the four years. The basis of this conceptualization was 'open-systems' theory; secondly, to operationalize the concept selected from the theory for the study, namely "hierarchical order." Thirdly, the study attempted to develop an interview schedule by which information concerning the variables which were operationalizations of 'hierarchical order' could be elicited from the mother; fourthly, the interview was administered. Finally, an analysis was made of the relationship of the variables from the interview and the classroom measures and observations of behavior.

The social-system interview identifies all members of the child's social system and asks about these individuals for each of the child's four years previous to Head Start

entrance. Variables investigated were: total numbers of persons comprising the social system, numbers of persons entering and leaving the social system, numbers of persons caring for the child, disagreement between caretakers, numbers of persons directing the child, assertiveness of the child with members of the social system, numbers of individuals older than the child who played with or cared for the child at play, and the extent of visits outside the home.

The classroom measures were: Wechsler Pre-School and Primary Scale of Intelligence, Cincinnati Autonomy Test Battery, the Play-Situation Picture-Board Sociometric, the Brown IDS Self Concept Reference Test, the Parten-Newell Development of Social Behavior, and the Inventory of Factors Affecting Test Performance.

It was hypothesized that these variables from the social system interview would relate favorably to the classroom scores: 'assertion', 'playmates', and 'outside visits'. It was hypothesized that the following variables would relate unfavorably to the measures and observations: 'size of social system', 'instability', 'caretakers', 'disagreement' and 'direction'.

It was further hypothesized that the social system interview would distinguish between low-income and middle-income mothers.

The subjects were 30 low-income children from the Lansing Head Start Experimental Project. In two classes there were

equal numbers of middle-income children; total N was 45.

The analysis was by means of an F test of difference between means to determine if there were differences between low-income and middle-income social systems of children. Simple and multiple correlations were run to determine the relationship between social-system variables and classroom measures and observations.

The results indicated that the social systems of the low-income children were significantly higher than the social systems of the middle-income children on: 'caretakers', 'disagreement', 'direction', and 'playmates'. The social systems were, in general, not significantly different on 'instability', 'assertion' and 'outside visits'.

The hypotheses regarding relationship between social system variables and classroom measures were only partially sustained. 'System size', 'caretakers', 'playmates', and 'direction' appear to be negatively related to test scores and desirable behaviors in the classroom. 'Assertion' is related to the same measures in a negative and positive fashion. 'Instability' and 'outside visits' appear as being more favorable to high test scores and desirable behaviors.

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ACKNOWLEDGEMENTS

The author wishes to express his appreciation for the help given by the many individuals without whose support this study would not have been possible.

A debt of gratitude is owed to Dr. Louise Sause, Chairman of the Guidance Committee and Project Advisor. By her constant understanding and encouragement, she made possible the overcoming of the many difficulties met with in the course of the study. Thanks are likewise due to the members of the committee, Dr. John McKinney, Dr. Dale Alam, and Dr. Harvey Clarizio, who gave valuable suggestions and encouragement.

The study could not have proceeded without the assistance of the Director of the Head Start Evaluation and Research Center at Michigan State University. Dr. Robert Boger, Director, and Dr. Sarah Hervey not only facilitated the research but offered help and suggestions. Thanks are due to the other members of the Center and especially to Mrs. Joan Hamachek who coordinated the testing and observations of the children in the Lansing Head Start Project.

The cooperation of the Lansing School Board and of the regional Head Start office was generously given. This cooperation was due principally to the efforts of Mr. James C. Kernen, Consultant for Continuing Education, Mr. Jack Griffen, Supervisor of Head Start Programs, and to the gracious help of Mrs. Karyl Katzman, Social Worker and Mr. Swart Evants, Prent Education Coordinator.

The author recalls with gratitude and affection the indispensable assistance of Martha Weber who not only gave encouragement but helped with the preparation of the manuscript and contributed valuable insights in the course of the study.

Finally, and perhaps above all, the author wishes to express his gratitude to the mothers who were interviewed. Each and every mother patiently endured the questions of the interviewer and generously gave of their time and interest.

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I

ORIENTATION

Purpose

The purpose of this study is the investigation of certain aspects of the social environment of children recently enrolled in Head Start classes and the relating of the results of the investigation of the social environment to measures of and observations on these children.

By 'investigation' is meant that information about the social environment is sought from the principal caretaker of the child. In this study all information is obtained from the mother. The information sought is obtained by means of a structured interview. This interview has been constructed specifically for the purposes of this study. Information about the social environment is sought for each of the four years preceding the child's entrance into the Head Start program.

The focus of this study is not the immediate or even the extended family of the child. For the purposes of this study the social-environment is considered to be the 'social-system' of the child. The 'social-system' of the child is defined as all those who interact with the child and with one another. In some cases the 'social-system,' defined above, will coincide with the immediate family. In many cases it will not. It was on the assumption that the social world of children has expanded that this study was given the present focus.

The decision to extend the scope of this study beyond the immediate family is made in response to suggestions from various sources. Brofenbrenner (1967) has indicated that the social world of the child has expanded.

> Children used to be brought up by their parents. It may seem presumptious to put that statement in the past. Why? Because de facto responsibility for the upbringing has shifted away from the family to other settings in the society, where the task is not always recognized or accepted. While the family still has the primary moral and legal responsibility for developing character in children, the power or opportunity to do the job is often lacking in the home, primarily because parents and children no longer spend enough time together in those situations in which such training is possible. This is not because parents don't want to spend time with their children. It is simply that conditions of life have changed..... Western studies of influences on personality development in childhood overwhelmingly take the form of research on parent-child relations, relations with the peer group, or other extraparental influences, scarcely being considered. (pps. 60-61)

Plante (1950) has also suggested that there are others in the social environment who might well be influential in the formation of the child.

> There are few more exciting trends than those in the number of relatives living in the household...all trends as to the number of persons in the household should be broken down into the relationship of these persons to the child. (pps. 16-17)

These authors do not speak specifically of children from low-income families. They merely indicate that an expanded social-environment will be influential in the child's development.

The Social Security Bulletin (1965) indicates that the expanded social-system might well be even more characteristic of low-income children.

> Of all the persons in family units with income below the economy level (that is, disregarding for the moment persons living alone), half were children under the age 18. These 15 million youngsters represented more than 1 in 5 of all children living in families. Because poor families find it necessary to "double up" in order to cut down their living expenses, about 9 percent of the children in the poor families were designated as "related" rather than "own" children. In other words, they were not the children of the head of the family but the children of other relatives making their home with the family. Among the poor families with a woman at the head, one seventh of the children were "related" rather than "own," and nearly a third of these related children were part of a subfamily consisting of a mother and children. Among poor families with a male head, 6 percent of the children in the households were children of a relative of the head. (pps. 14-15)

It can be assumed that the percentage of children who lived at some time during their lives with extended families will be larger than the 9 percent cited above. Also, these figures do not indicate the percent of those children who might have lived with families or individuals other than relatives at some time during their lives. Nor do they indicate the numbers of others, such as baby-sitters, who might have assumed the care of the child for more or less extended periods of time. The term 'social-system' is broad enough to include all those who might have been influential in the development of the child.

The measures of the child's behavior in the Head Start classes, the criterion measures to be described later, are presumably indicators of behaviors that are of great interest to teachers. They are tests of intelligence, measures of autonomy, and of social adjustment.

Definitions

In order to better understand the focus of this study the following definitions will be employed.

1) The child's social-system: This has already been defined as 'all those who interact among themselves and with the child.' More precise definitions will be given in a discussion of the interview. As will be seen, this definition will be limited to all those older than the child because of the nature of the variables investigated.

2) 'Caretakers:' As will be indicated further on in the study only certain aspects of the child's social-system are investigated. 'Caretakers' is one variable. It can be defined as the number of individuals older than the child who were in a position to interact with, control, and direct the child, and who actually did so.

The variable of 'caretakers' is investigated for each of the four years of the child's life before entrance into Head Start. The same is true of the other variables.

3) 'Direction:' Those who gave direction are identified as those who, whether they physically took care of the child or not, gave directions for the care of the child in his

presence. Thus it is possible for this number to coincide with the numbers of caretakers. However, it is suspected that this will not be the case.

4) 'Disagreement:' It is implied above that there might be disagreement between those who direct or care for the child. The variable of 'disagreement' indicates those who in the presence of the child disagreed about the manner of his caretaking.

5) 'Assertion:' This indicates the extent to which the child attempted to control those older than himself in the social-system.

6) 'Instability:' This refers to the number of individuals older than the child who either leave or enter the social-system of the child during a given time period. This is not the definition of instability as used in the Social Security Bulletin cited above, nor is it commonly employed in this fashion. For the purposes of this study the word 'instability' is used as defined.

Other variables, to be indicated later, are investigated. However those defined above, form the main focus of the investigation. As was mentioned these variables are investigated for each of the four years preceding the child's entrance into Head Start.

Assumptions

There are general assumptions underlying all approaches to the investigations of early childhood and this study has,

in addition, certain assumptions specific to it's orientation.

It is assumed by investigators of early childhood such as Spitz (1965), Buhler (1930), Bayley (1930), and Bloom (1964), among a host of others, that early environment is crucial for the developing child. While this appears a safe assumption, it has not always been possible to designate clearly the relationships between early experience of the child and his later behaviors. Clausen (1966) indicates why this might be so. There are innumerable variables that can be identified as influencing the developing child. These numerous influences and their interactions make it difficult to identify specific relationships.

An assumption, specific to this study, is that it is possible to identify <u>patterns</u> in the social environment of the child and relate these patterns to the child's behavior. This assumption would appear to be based on some kind of unity in the social-system of the child. Clausen (1966) speaks of such a search for unity in studies of the family.

> It is almost as difficult to conceptualize the family as a whole as it is to study the whole family. As Handel (1956) notes in a review of psychological studies of whole families, each tends to evolve its own unique culture, its norms, values, and role definitions.
>
> Attempts to evolve a typology of family themes or of global orientations of families have in general not yielded viable conceptualizations. A generation ago, the task of defining an effective family probably seemed a bit more simpler than it does at present. As we have become more aware of the ways in

> which family structure and cultural contents influence family dynamics, it is no longer possible to apply a few precepts derived from clinical experience with middle class neurotics and their families. Efforts at formulating the desirable or optimal attributes of family (Otto, 1963; Pollack, 1957) may be helpful to students in their thinking about the family, but are unlikely to serve as guides for practitioners except in a very general sense. (p. 24)

In Chapter II a return will be made to this discussion of family unity.

This study assumes that the child from infancy is embedded in a social world. The assumption is made that the child is not primarily a-social and must be socialized, but that he is primarily social and undergoes a process of individualization. This assumption is supported by such writers as Lewin (1939) and Vygotsky (1962). This approach is also influenced by a phenomenological approach such as that of Heiddeger (1962) who writes of co-existence.

Lewin (1939) writes:

> Recently, however, a growing number of psychologists seem to have abandoned this view (stressing the biological character or the individual). They seem to be persuaded that social facts are equally or even more important for psychology than the so-called "psychological facts." These psychologists recognize that the child from his first day of life is objectively a part of a social setting and would die within a few days if he were to be withdrawn from it. Also the so-called "subjective" psychological world of the individual, his life-space, is influenced in a much earlier stage by social facts and social relations than anyone would have expected a few decades ago. Already, at a few months, the child seems to react to another person's smile and voice in a rather specific way. It is probably safe to say that the child is able to perceive and to distinguish the friendliness and unfriendliness of another

> person at an earlier age than he is able to distinguish the pattern of physical lines in a countenance which expresses these social attitudes. (p. 527)

It is assumed in this study that teachers will be able to utilize the knowledge about a child if it is possible to identify patterns in the social environment and relate these patterns to behavior in the Head Start setting.

This assumption has support in the planners of Head Start programs. Holt (1966) identified a number of programs which have been developed upon the assumption that areas of deprivation can be identified and remedies provided. Subsequent years have seen the initiation of programs and projects which aim at remedying the effects of cultural deprivation. One such program is the Lansing Head Start Project from which program the population for this study was obtained.

Need

There is a need for a great deal of understanding of children on the part of the Head Start teacher. The guidelines published by the Office of Economic Opportunity indicate some of the qualifications of the teacher:

> Qualifications--Ideally, teachers should have a combination of education and experience, holding a college degree with a major in Early Childhood Education, Nursery or Kindergarten Education. The related areas of Psychology, Home Economics, Sociology, Anthropology, and Social Work would enhance a teacher's qualifications. Actual work experience could be in nursery school teaching, private or cooperative nursery teaching, day care center teaching, pediatric nursing, social case worker, and other relevant

> experiences with pre-school disadvantaged children and their families. (Head Start, Child Development Programs, 1967, p. 16)

Such understanding is greatly facilitated by a knowledge of the family background and present home environment of the child. Laing and Esterson (1964) have shown that deviant behavior becomes much more comprehensible if related to the functioning of others who make up the social world of the individual. Redl and Wineman (1952) have also related the child's present functioning to very early social influences. Hunt (1965), although he seems to be more concerned about present variations in the environment and specific rather than more gross aspects of the history of the child, still relates behavior to the environment. Thus, the teacher could be aided materially if she were able to conceptualize the social environment of a child, past and present, and relate this information to his present behavior.

The teacher will be aware, from observation and research, that there are gross differences between the behavior of low-income and middle-income children. The deficiencies of low-income children in comparison with middle-income children have been well documented. Holt (1966) has reviewed an extensive literature all of which indicates this fact. Bloom and Hess (1966) have amassed numerous studies to this effect. More specific studies of creativity by Banta (1967) and measurements of mental functioning using Piaget's concepts by Almy (1965)

are in agreement that low-income children are behind in almost every aspect of desirable behavior when compared to middle-income children. Less available, however, are studies which seek to explain inter and intra family differences within the low-income group.

Merely to be able to say that her children are less advanced than middle-income children is of little help to a teacher. Kornberg writes (1965):

> One thing that I have learned about these children's needs is they cannot be "relativized," or attributed to a specific lower-class culture. The idea of some educators that anthropologists are required in each school to inform teachers of lower-class experience and behavior, has only a limited value for me. For the individual child's needs revolve around specific families and people rather than this aggregate pattern of lower-class culture. I am not denying the insights that come by knowing about the larger social world in which the child and his family live. But I think we are in danger of misusing this sociological view, to the neglect of seeing the child's struggle simply to grow up, to cope with more than a particular culture or culture conflict. (p. 273)

One of the assumptions made when discussing the teacher and her relationships to the children in Head Start is that the teacher will be one of the principal planners of educational experiences for the child. The teacher should not only implement programs but assist in their planning.

Guidelines of the Study

Some attention has been given in the development of the rationale of this study to what can be presumed to be the orientation of the teacher and the practical limits set by

her duties. There has been an attempt to integrate philosophy, theory, and practice in such a manner that a teacher could accept the underlying assumptions of the theory and practically execute her own investigations. Dinkmeyer (1965) indicates the close relationship between orientation, theory, and practice.

> It is important to recognize that all the theories thus far discussed (referring to various theories of child development) have had an effect upon decisions made in research, in classrooms, and in parental management. The theories have been accepted in varying degrees by various professions over the years. Some have made their greatest impact on the pediatrician, others upon the parent, and some upon psychiatric and counseling practitioners. They have served, in a sense, as determinants of parental, professional, and teachers actions and reactions. It seems to be quite clear that a person who believes the child to be the product of a series of instinctual drives will function differently from one who considers him a goal-directed being. (p. 45)

Edna Ambrose and Alice Miel (1958) discuss the importance of the teacher's philosophy:

> Rasey and Menge contend that the most crucial aspect of the human environment is the "Philosophies" (people) operate upon, the constellation of values that trigger their action. (p. 24)

This study in the development of theory hopes to be consonant with a commitment to 'individualized instruction.' Although there are some teachers, the Lansing Head Start Program (1965), who do not seem to accept this orientation, it is felt that the majority do. This is also indicated by the Lansing Head Start Program just referred to.

It is also hoped that in practice any teacher could

acquire the information sought by the social-system interview to be presented later.

Thus the results of this study, hopefully, will allow generalizations which practically a teacher could verify in the case of any individual child by conversations with caretakers of the child.

Objectives

Three principal objectives of this study can be identified. The first objective is to develop a theory in keeping with the guidelines discussed above. That is, the theory should be developed in keeping with the educational philosophy of a teacher and not violate any of her assumptions about the nature of the child and accepted educational goals for him. It is assumed in this study that such goals as development of full potentiality, creativity, social values, and citizenship as well as specific cognitive skills are important to the teacher. These goals are discussed at length in the ASCD Yearbook, Individualized Instruction, (1964).

The theory chosen for elaboration is open-systems theory as developed by Bertalanffy (1960). This theory seems to be in accord with what is known about the functioning of small groups as related by Deutch (1965) and what is empirically known about the functioning of low-income families as summarized by Chilman (1965). The theory also appears to be testable on a level that would be possible for a Head Start teacher who might visit the

child's home only three times during the year in which the child is attending the Head Start class. The guidelines for teachers of Head Start are given in Appendix A.

The second objective of the study is to operationalize the theory in such a fashion that it would be practical for a teacher to test the theory herself. It is not expected that the teacher will use the interview in precisely the form used in this study. Rather, it is hoped that concepts that prove to be practical can be a guide for the teacher in her visits to the home of the child.

A third objective is the testing of the hypotheses derived from open-systems theory.

It is felt that no theory presently available presented exactly the correct assumptions or testability offered by open-systems theory. As will be seen in the section on related research the concepts are not new. What appears novel is their arrangement in a coherent conceptual scheme.

Limitations of the Present Study

The present study suffers from certain limitations. These limitations stem from the use of open-systems theory, the operationalizing of the concepts, and the methods used to test the hypotheses. Another serious limitation is presented by the nature of the population offered for testing.

The theory presents difficulties in that concepts adopted from other theories or related research do not

exactly fit into open-systems theory. For example, open-systems theory would lead to the hypothesis that an autonomous child or social-system would be both more dependent on the environment and at the same time in a certain sense more independent. The concepts of Bertalanffy's open-systems theory appear to call for a re-definition of terms which have commonly been used in research. Bertalanffy employs such terms as "interaction with the environment," "equifinality," "purpose," etc.

A kindred difficulty arose in operationalizing the concepts from open-systems theory. As will be seen, this difficulty was not entirely overcome. Thus, the concept of 'play' as embodying the idea of 'spontaneous activity' was not particularly fortunate.

Another limitation is the method used in gathering data to test the theory, the interview method of acertaining the early social history of the child. This method depends on the ability of the mother to recall past events. Jersild (1968) cites several studies that question the validity of such interviews based on the mother's recall. However, since this seems to be the only means of gathering the desired information, this method must inevitably be accepted or the study abandoned. It seems obvious that the teacher must herself rely on the recollections of parents.

An attempt was made in fashioning the interview to avoid at least some of the elements that contribute to unreliability of recall and invalidity of answers. It will

be seen that the interview is constructed to assist recall. Questions which depend on recall of specific incidents are avoided. Questions which would appear to involve opinion or social desirability are likewise avoided. This imposes some limitation on the quality of interaction.

The population available for testing also implied limitations. The total population of low-income children was only thirty. This N sometimes fell to as low as 26. Experience of the Michigan State Research and Evaluation Center teaches that the drop-out rate from Head Start classes can sometimes be much higher.

With regard to the population of mothers to be interviewed there was the limitation that a return for a check on reliability of recall was not possible.

On the positive side it must be noted that along with the population of low-income children there was available a group of middle-income children and parents. Although this study seeks knowledge about variations within the low-income group it was felt that a comparison of scores on the social-system interview would give some indication of validity since past research would indicate that the low-income group should score significantly different from the middle-income group. The nature of the population tested will be further discussed in the chapter on Procedures.

No great difficulty in contacting the mothers of the children or in getting their cooperation was anticipated.

As a matter of fact, not one mother of either group failed to cooperate with the interviewer. This was anticipated since an interview of some two hours length was given to a large group of Head Start mothers in Detroit, over two hundred parents, and those who were unable to be interviewed numbered only four. A report of this interview is found in Head Start Research II, 1966-67.

Summary

In this Chapter the purpose of the study was discussed. A statement of definitions was given in order to clarify the focus of the study. Then, came a statement of assumptions. The need for the study was indicated based on the role of the Head Start teacher. The guidelines which influenced the choice of theory and methods of data gathering were briefly presented. Finally, there was a statement of limitations due to the nature of the theory and methods of testing. The limitations of the sample were also stated.

II

THEORY

Introduction

In the preceding chapter, the goals, assumptions, and limitations of the study were indicated. This study can be described as an attempt to achieve the following objectives, supported by the assumptions previously mentioned, and within the limits imposed by the nature of the sample and the method.

The objectives:

1. To conceptualize the social-system of the Head Start child in a unitary fashion. This is an effort to form a framework of logically inter-connected concepts which refer to various aspects of the child's social-system.

2. To operationalize selected concepts from the conceptual framework.

3. By means of a parent-interview, to gather data concerning the degree to which these selected variables are present in the social-system of the child.

4. To attempt to relate the results of the parent-interview to observed and tested behaviors of the child in the Head Start class.

Before proceeding with the elaboration of the conceptual framework or theory, a review of research bearing on these objectives will be made.

Related Research

In general there are certain aspects to the study that make it difficult to encounter research that has immediate bearing on the variables investigated, the theory, or the method. This lack of relevant research is probably due in part to the fact that this study does not take the immediate family as the focus of the study. The social-system of the child, defined as all those who interact with the child and with one another, can be, and usually is, broader than the immediate or even the extended family. Data gathered in this study seems to imply that this may be especially true of low-income families. Studies inspired by family-centered concerns usually ignore others than the immediate family. It is reasonable to assume that certain aspects of the immediate or extended family are relevant to this study, but it is also reasonable to assume that the patterns of interaction are different in those social-systems in which there are large numbers of non-relatives interacting. In one family, among many studied by means of the present interview, one child knew as relatives only his mother and later on a younger sister. Yet, by the mother's report, she had numerous acquaintances who acted as "second mother" to the child.

Another reason that can be cited for the lack of relevant research is that this study does not seek to investigate the personality characteristics of the parents or their relationship to children's intelligence or

achievement in school. The study does not seek directly to investigate the quality of interaction, but must look upon intelligence, nurturance, dominance, and a host of other variables that have been investigated as intervening variables, and assume that, if there are causal relationships between such variables and intelligence or creativity or social behavior, these parental characteristics accompany a certain social-system composition.

Perhaps the research that comes closest to the approach taken in this study is that which finds relationships between such variables as family size, sibling order, the father-absent family, and the family with employed mother. Such variables are easily investigated; and it is suspected, although the case, according to Clausen (1963), is not proven, that such variables do have an effect on development. Thus in the case of sibling order, he relates that studies have shown that the effects can be attributed to:

1) Parental attitudes and experience
2) Amount and intensity of parent-child interaction
3) Availability of child models
4) Displacement by older siblings
5) Effects of parental age

However, it is just these concomitants of a certain pattern that gives hope of predicting child behavior from a knowledge of certain patterns of the child's social system. Aldous (1967) reports that in her sample children

from one and two child families were significantly more creative, as were oldest and only children.

Another reason why previous research is not wholly relevant to this study is that the populations studied have been composed of two groups for comparison: lower-income and middle-class families. Significant differences in parental expectations, intelligence, or other characteristics found between the two groups are commonplace. However, such studies do not explain the variation among a restricted group such as the population that makes up those who are eligible for Head Start.

The source for research that devotes itself almost exclusively to this sub-population is the group of research centers whose sole purpose is research and evaluation of Head Start children and their parents. Summaries of research have been issued: Head Start Research Center, Volumes I and II (1967-1968). A sizable portion of this research is devoted to parental factors. At the present time, data from 200 parent interviews administered in Detroit are being analyzed; a nation-wide parent interview is also being given. This data is not yet available. However, the information sought in the above mentioned interviews is not directly relevant to the present study.

To summarize: in general, parental variables have been personality oriented, restricted to the immediate family, concerned with an older population than Head Start

children; or they have been concerned with variations between populations rather than with variations within the sub-population.

It was stated as one of the goals of this study 'to conceptualize the social-system of the child in a unitary fashion.' Although this is not the same as developing a "family typology" or as "defining an effective family" (Clausen, 1966), still the attempts to define the family as a unity have some bearing on the goals of this study. Clausen represents one side of a controversy:

> It is almost as difficult to conceptualize the family as a whole as it is to study the whole family. As Handel (1965) notes in a review of psychological studies of whole families, each family tends to evolve its own unique culture--its norms, values, and role definitions. (p. 41)

Satir (1964), on the other hand, writes:

> Numerous studies have shown that the family behaves as if it were a unit. In 1954 Jackson introduced the term "family homeostasis" to refer to this behavior.
>
> a. According to the concept of family homeostasis, the family acts so as to achieve a balance in relationships.
> b. Members help to maintain this balance overtly and covertly.
> c. The family's repetitious, circular, predictable communication patterns reveal this balance.
> d. When the family homeostasis is precarious, members exert much effort to maintain it.
> (p. 130)

Virginia Satir represents the clinical approach. Although she along with others in family casework such as Ackerman believe that the family is a unit, their orientation is quite different from the orientation of this

study. First, they typically concentrate on the immediate family. Secondly, they use the concept of 'homeostasis' which implies a "closed system." Although this concept seems to facilitate the conceptualization of the family as a unit, it seems to depend on a primary reactivity rather than activity. One of the assumptions of this study is that the child and his social-system is primarily active. Ackerman (1958) develops such concepts as 'sado-masochistic' to describe a family relationship. However helpful this term is to a caseworker, it should be of little value to a visiting Head Start teacher.

Nye and Berardo (1966) present eleven 'Emerging Conceptual Frameworks in Family Analysis.' The frameworks enumerated are, in relation to this study, unacceptable as conceptual frameworks for the same reasons that were cited for the inappropriateness of the orientations of Satir and Ackerman.

More closely connected with the goals of this study are researches in group dynamics. Deutch (1965) summarizes his research:

> Effects of Cooperation and Competition on Group Processes.
>
> Elsewhere (Deutch, 1949a), I have drawn out the implications of my discussion of substitutability, cathexis, ad inductibility to characterize in further detail the effects of cooperation and competition on group processes. Results of experimental work (Deutch, 1949b) have provided substantial support of this characterization. These results indicated that groups of individuals who were promotively oriented to one another, as compared with groups

> of individuals who were contriently oriented to one another, showed: 1) more coordination of efforts; 2) more diversity in amount of contributions per member; 3) more subdivision of activity; 4) more achievement pressure; 5) more communication to one another; 6) more attentiveness to fellow members; 7) more mutual comprehension of communication; 8) more common appraisals of communication; 9) greater orientation and orderliness; 10) greater productivity per unit time; 11) better quality of product and discussions; 12) more friendliness during discussions; 13) more favorable evaluation of the group and its products; 14) more behavior directed toward helping the group improve its functioning; 15) greater feeling of being liked by fellow members; and 16) greater feeling of obligation and desire to win the respect of others... (pp. 513-14)

This passage is of interest to this study for two reasons. Deutch lists several characteristics which he describes as being related to one another in such a way that where one is found the others can likewise be expected in like amounts. Also this list resembles the characteristics of Open-System theory as proposed by Bertalanffy (1952), and it is this theory which provided the framework of the concepts of this study.

Thus it appears possible to conceptualize a framework of 'system' or group characteristics in such a fashion that they would logically vary with one another. These concepts could be operationalized in behavioral terms; i.e., what people actually do or have done. One could expect to find more or less high correlations between characteristic behaviors.

If a certain group, or social-system, had high scores and these scores intercorrelated highly then this group or

social-system would be characterized as 'high' on unity. Low scores with high intercorrelations between the scores would indicate a social-system 'low' on unity.

In Chilman's review of family research on low-income groups (1965), to be reviewed shortly, she sets up a model of family unity conducive to educational achievement. Actually, she frankly sees the middle-income group family as the 'ideal' and describes family characteristics of families with low-conduciveness to education as deviations from her model. This implies value orientations which she frankly admits. It must be admitted that the present study is not free from a certain bias in the same direction as Chilman's. However, this study does not imply that low-income families are of necessity low on conduciveness to educational achievement or high on disunity. Perhaps, these qualities are found more often in low-income families, but, the model proposed could be used in any class of society.

Chilman (1965) made an extensive review of the research done on low-income families which were low on conduciveness to educational achievement in Child-Rearing and Family Relationship Patterns of the Very Poor. She lists the patterns of these families in which characteristics have been found which are detrimental to educational achievement. She also lists in contrast those patterns which have been found conducive to the achievement of educational goals. Not all these patterns will be repeated in this study, but, only those which appear to best fit the characteristics of open-

systems theory as developed by Bertalanffy and which seem to be expressed in behavioral terms.

Chilman lists patterns which are not conducive to the attainment of educational goals:

Limited freedom to explore...

Constricted experiences...

Masculine and Feminine worlds separate...

High degree of control...little communication...

Repressive and punitive atmosphere...

Poor impulse control...

Low self esteem...

Tendency to withdrawal...

Authoritarian methods...

Lack of goal commitment...

Tendency to be rigid and non-conforming...

Abrupt changes in child-rearing practices...

Inconsistent discipline...

Little verbal communication...

Slight awareness of others...

Little expressed affection...

One author who seems to posit a characteristic of low-income families which, if valid, would seem to militate against the coherence of open-systems theory as applied to this population is Frank Reisman (1962). He states that there is more, not less, cooperation among low-income families. This view does not seem to be in accord with the

research cited above or with the experience of family workers.

Theory

D. B. Harris (1963) states that concepts from Biology are often useful in organizing many of the ideas and observations of psychology. The theory chosen as a framework for this study is from biology. It is interesting that many of the characteristics of Developmental Psychology, as understood by Harris, fit in very well with the 'homology' proposed by Bertalanffy. The following are some of Harris' comments on development. They will be seen to fit in very well with open-systems theory.

1. The individual is best conceived of as an open-system.

2. The concept of purpose seems to be accepted in developmental theory.

3. The principle of irreversability seems to be accepted.

4. A truly developmental theory seems to lie somewhere between the extremes of complete freedom and complete determinism.

5. Different epochs of human life are seen as qualitatively different.

6. Developmentalist theories place greater emphasis on the social behavior of children. It seems to be accepted that no behavior can be understood apart from the circumstances in which it takes place.

7. Developmental theory tends to be holistic in nature.

8. Finally, developmental theory seems to be more practical in orientation.

The choice of Bertalanffy's theory was influenced by the principles as explained by Harris above and by the characteristics of low-income families as reviewed by Chilman.

Three other authors have suggestions which indicate that patterns developed in early social-interactions might perdure. Allport (1937) talks of 'functional autonomy.' Hunt (1964) talks of 'intrinsic motivation.' Sears (1957) writes:

> Thus, there is great temptation to assume the operation of some intermediary process which, very early in life, enables the child to learn without the parents having to teach, and which creates a self-reinforcing mechanism that competes effectively in some instances with external sources of reinforcement.

This study leads to the hypothesis that certain behaviors which develop in a child due to patterns in his social-system will relate to his pre-school behavior despite the influences of subsequent learnings. Hopefully the patterns of the social-system can be identified. These patterns can then be related to present behavior.

Bertalanffy in his book Problems of Life, (1960) gives a statement regarding the nature of open-systems theory:

> Analysis of individual parts and processes in living things is necessary, and is the prerequisite for all deeper understanding. Taken alone, however, analysis is not enough. (p. 11)

> We can therefore summarize the leading principles of an organismic conception in the following way: the conception of the system as a whole as opposed to the analytical and summative points of view; the dynamic conception as opposed to the static and machine theoretical conceptions; the consideration of the organism as a primary activity as opposed to the conception of its primary reactivity. (pp. 18-19)

> .....A 'system' can be defined as a complex of elements standing in interaction. There are general principles holding for systems, irrespective of the nature of the component elements and of the relationships or forces between them. From the fact that all the fields mentioned are sciences concerned with systems follows the structural conformity or 'logical homology' of laws in different realms. (p. 199)

> .....It will be seen then that notions such as wholeness and sum, progressive mechanization, centralization, leading parts, hierarchical order, individuality, finality, equifinality, etc. can be derived from a general definition of systems: notions that hitherto have often been conceived in a vague, anthromorphic, or metaphysical way, but actually are consequences of formal characteristics of systems, or of certain systems conditions. (p. 199)

Nowhere in his book, Problems of Life, does Bertalanffy set down a complete list of the various attributes which he conceives of as logically flowing from the general definition. In various places he mentions these characteristics and indicates their mutual dependence. The following is a list of concepts which have been gathered from various passages in the book.

1. Interaction with the environment:

> Every living thing maintains itself in a continuous exchange of composing materials and energies. (p. 2)

2. Spontaneous activity:

Indeed it, (referring to the system) frequently shows movements and other activities without any stimulus from outside,... (p. 166)

3. Purpose:

Equally every living being displays in its organs and functions a purposeful construction, adapted to the environment in which it normally exists. (p. 2)

4. Organic regulability.

5. Progressive mechanization:

Secondarily, a progressive mechanization takes place, i.e., the originally unitary action segregates into separate actions, governed by fixed structures. (p. 17)

6. Closeness of interaction:

The higher we go in the scale of organisms, the more different is the behavior of isolated parts from that which they display in the whole; and the poorer it is in comparison with the performance displayed by the whole organism. (p. 45)

7. Progressive differentiation:

Progressive integration goes hand in hand with the specialization, metaphorically spoken of as 'division of labor.' (p. 45)

8. Individuality:

Finally, from the physical standpoint, the individuality even of man can, on occasion, be questionable. (p. 49)

9. Mutual interdependence.

10. Equifinality:

Equifinality is a necessary consequence of processes taking place in open-systems in so far as they attain a steady state. Since there is in such systems a continuous inflow and outflow, building-up and breaking down of the component materials, the steady state finally reached is not dependent on the initial conditions but only on

> the ratios between inflow and outflow, building-up and breaking down. (p. 143)

11. Hierarchical order:

> Segregation hierarchy is especially characteristic of the biological, and also psychological and sociological realms. (p. 44)

Chilman, in the study cited above, suggests that a family scoring high on the list of desirable characteristics she mentions as most conducive to educational attainment would have a high degree of maturity; the family would not need looking after. Bertalanffy's theory would indicate that a system scoring high on the variables he suggests would be mature and well developed.

The characteristic chosen for testing in this study is that of hierarchical order. In open-systems theory, the concept of hierarcy does not suggest authoritarianism, rather the opposite. If repression is necessary, there is some dysfunction in the system. The concept implies a central source of direction.

This concept would hint that the social-system of the child, defined in relation to him, should be investigated for the presence or absence of this element of hierarchical order.

The central question posed by the characteristic 'hierarcy' is: "Does the child's social-system, defined in relation to him, have a central source of control?" The concept of 'order' in this connection means a combination of control and direction. In an interaction the question of who controls whom is often impossible to answer. It seems

obvious that children at times do control their parents. For the sake of this study, the decision was made to operationalize the concept of 'hierarchical order' by means of six concepts.

'System-size':

This is the total number of individuals making up the child's social system during a given year.

'Instability':

This is defined as the numbers of individuals who make up a child's social-system and who leave it or enter it during a given year. As will be seen from the analysis, this was not a very fortunate way to operationalize 'order.'

'Caretakers':

This is defined as the number of individuals who actually control the child, that is, they are in a position by virtue of size and age to impose certain actions on the child and do so.

'Disagreement':

This is defined as the numbers of those who within the child's system differ in regard to caretaking duties. The individuals do not necessarily physically care for the child. This disagreement does not necessarily imply conflict.

'Direction':

This is defined as the number of individuals in the child's system who might or might not care physically

for the child, but, are in a position to give orders about his caretaking. Thus, an older sibling might be a 'caretaker' but not a 'director.'

'Assertion':

This is defined as the numbers of individuals within a system with whom the child interacts for the sake of obtaining specific goals. An instance of this would be a child's refusal to eat certain foods.

In the course of developing the interview to gather data on these characteristics, it was decided to define further two other variables: 'playmates' and 'outside visits.' Although caretakers are present in play and outside visits, it seemed that these variables were more consonant with other characteristics of open-systems theory. The concept of 'playmates' appeared to involve spontaneous activity. The concept of outside visits seemed to involve 'interaction with the environment.' The results of the interview have caused a reappraisal of this theorizing, but the interview was given and scored with the extraction of these variables in mind.

'Playmates':

This is the number of older individuals, children, or adults who play with the child.

'Outside visits':

This is the numbers of persons who take the child from the home for outside contact.

Hypotheses (General)

On the basis of related research and theory the following hypotheses are made:

I. Scores from the parent interview on system size, caretakers, disagreement, and direction will correlate negatively with scores on intelligence, autonomy, and social adjustment. This hypothesis holds true for each of the four years previous to entrance to Head Start.

II. Scores from the parent interview on assertion, playmates and outside visits will correlate positively with scores on intelligence, autonomy, and social adjustment.

Summary

In this chapter a restatement of objectives was made. Then the question of related research was discussed. The theory was presented next. The theory chosen as a conceptual framework was derived from Bertalanffy's open-systems theory. Empirical support for the theory was the review of research on low-income families by Chilman. Finally, the hypotheses tested in this study were formed.

III

PROCEDURES

Introduction

In the preceding chapter the rationale, theory, and hypotheses were briefly presented. The hypotheses derived from the theory and related research are to be tested on children currently enrolled in the Lansing Head Start Project. In this chapter the sample used in the study is described. The instruments used, the social-system interview and the various tests and observations, are discussed in this chapter. The methods of gathering data along with the personnel who gathered the data are given. The design of the study and the tests of significance are discussed. Finally, specific hypotheses are made.

Sample

As was mentioned the population offered for the purposes of testing the hypotheses was composed of children currently enrolled in the Lansing Head Start Project. This Project was instituted in order to determine whether having mixed classes of low and middle-income children would influence the scores of low-income children. There were three classes in the project; two experimental classes with the equal numbers of low-income and middle-income groups and a control group of low-income children. Since it was not the purpose of this study to predict gain-scores only pre-test data will be used as criteria in the analysis. The

assumption is made that in using these pre-test data that there had not been sufficient time for the effects of the mixing to have had an effect on the scores. The class year began in mid-October and the testing and observations took place shortly after. The Wechsler Preschool and Primary Scale of Intelligence was administered during the first part of November. The Cincinnati Autonomy Test Battery was given during the first part of December. The rating scales of test behavior were filled out at the time the WPPSI and CATB were given. The Brown IDS Self-Concept was given during the first part of February of 1968. The teachers' ratings of unstructured behavior were made during February of 1968.

It should be mentioned that every attempt was made on the part of the teachers to avoid letting the children know, in the mixed or experimental groups, who was a child from a low-income or a middle-income family. Observers noted that the teachers were competent and interested in the children. In the classroom it was difficult to distinguish by appearance which child belonged to the low-income or middle-income groups.

Attempts were made to match the children in the control and experimental groups on race, sex and age. No other criterion was used in matching. Children came from all sections of Lansing. No neighborhood was over-represented. It is the practice in Lansing for children to be taxied to their classes. It is common for these trips to be several miles in length.

Class composition is as follows:

Sex

Low-Income Control	Mixed I	Mixed II
8 Boys	8 Boys	8 Boys
6 Girls	7 Girls	8 Girls

Racial Composition

Low-Income Control	Mixed I	Mixed II
5 Caucasian	6 Caucasian	6 Caucasian
7 Negro	8 Negro	8 Negro
2 Mexican	1 Mexican	2 Mexican

The total N for the low-income groups combined was 30. The total N for all groups was 45.

The definition of low-income is found in Appendix A. These are the OEO guidelines for admittance into Head Start classes. These guidelines were followed in the admittance of low-income children into the Lansing Project. The middle-income children were from families which lived in various parts of Lansing. In conversations with these parents when the interview was given it could be seen that they were grateful for the opportunity of pre-school education.

For the entire sample, ages ranged from forty-five to fifty-seven months. The median age was fifty-two months. The low-income and middle-income groups were successfully matched for age.

As was mentioned in discussing the limitations of the study, this is not a large sample when one considers the

various factors that are known to affect the children's behavior. However, it seems to be representative of the racial composition of low-income families in the Lansing area.

Instruments

There were several instruments used to test and observe the children. The scores from these instruments are used as criteria or dependent variables which are predicted from the mothers responses on the social-system interview. First, there is a discussion of the social-system interview and then a short exposition of the instruments used as criteria.

Social-System Interview

In order to test the hypotheses mentioned in chapter II the following information was desired from the mother. The same questions to elicit this information were to be asked for each of the four years preceding the child's entrance into Head Start.

1. The members of the immediate family.

2. Other individuals, relatives or not, who lived in the home during the year in question. They had to reside in the home for at least a month. The focus of the interview was on those individuals older than the child.

3. Relatives or friends who visited the home: this item was limited to those who visited the home at least once a week throughout a given year. They had to be older than the child and had to interact with the child.

4. Baby sitters whether they lived in the home or took the child from the home for care in their own homes.

5. Information on the number and extent of actual caretakers.

6. Information on disagreement between caretakers.

7. Source of direction for the child. By direction is meant the number of individuals who gave orders to the child even though they might not have physically cared for the child.

8. Information concerning the assertiveness of the child. This is defined as the numbers of individuals with whom the child interacted to obtain some object or goal.

These were the objectives when the development of the interview began. There was the intention to avoid as much as possible questions which might involve the factor of social desirability or opinion or judgement about the personality of the child.

A review of available parent interviews, including those from Head Start Research, did not offer help in the construction of the interview. As was mentioned the information sought was different from that usually obtained by interview. There was the additional problem of finding questions which would be suitable for repetition for each of the four years.

The actual development of the interview proceeded as follows. A tentative set of questions and a rating scale was devised. Five families from University Housing were

selected who had children from three to five years of age. This group was composed of graduate students in Psychology, Education and Sociology. All had been involved in some fashion with low-income families. They obviously were not representative of the population of low-income families to be interviewed but it was felt that they could offer valuable insights and suggestions.

The interview was administered to the mothers with the fathers present. If the husband could easily agree with the wife, this was some evidence that a question elicited good recall. It became evident that the mode of recall for women was different from that of the men. The mothers tended to be quite concrete in recall while the men tended to rubricize. That is, the fathers tended to answer a question with these or similar words: "He acted just like any normal child would." The mothers could remember names of baby-sitters, connect visits by relatives with other events, etc. This same phenomenon was encountered in the actual administation of the interview with both low-income and middle-income parents. Thus the interview was given to mothers although the father was encouraged to be present.

Successive trials with the interview, plus discussions, were made until in the judgement of the couples the information sought could be readily recalled. During the first and final administrations another rater sat in on the interview. She rated the responses on a scale that indicated the extent to which individuals from the child's social-system actually

interacted with the child. At the first administration, with more global questions, the rater and the interviewer had poor agreement. The reliability coefficient was .50. At the final administration, when the changes mentioned below had been made, the interviewer and the rater were in almost perfect agreement.

The changes incorporated into the interview were:

1. The identification of the members of the child's social-system was made for the four years before any questions of interaction were asked. Name, sex, age and relationship to the child was required for each member of the child's social-system.

2. Areas of interaction were specified. The nine areas of interaction were chosen from texts of child development and child care. The group agreed that it was a comprehensive list.

3. The ratings as to the extent of interaction was made on a time basis. It was decided that a judgement of the intensity or quality of interaction was extremely difficult.

The final form of the social-system interview is found in Appendix B.

The question of reliability could not be settled satisfactorily. This was not the question of inter-rater reliability since only one interviewer was to be used in the study. The question of reliability of recall was discussed with the Family-Helpers. They indicated that a return to the same interviewees for a check of reliability was not to

be recommended. However, an attempt was made in the construction of this interview to avoid or minimize causes of unreliability of recall. There has been difficulty with the recall of specific incidents or dates. This interview was not based on the recall of material of this nature; nor was there an attempt to exact recall of isolated incidents. The answer sought was highly associated with other information sought; thus the number of caretakers other than the mother is associated with the possible number of individuals who would be in a position to interact with the child. It is felt that association aids recall. Payne (1951) suggests that the type of reliability sought should be that which is acceptable in a court of law. In a sense the group who aided in the development of the interview acted as a jury for one another. On most of the occasions when the interview was given in the evening when the family members were home, there was assistance given to the mother by other family members. Maccoby and Maccoby (1954) suggest that the standardized interview aides in reliability at the expense of validity. It was decided that in the interest of higher reliability the same questions should be administered to all of the mothers. Cronbach (1960) states that reliability limits validity. In the case of this interview, sacrifices of quality of interaction were made which be obtainable were studies of reliability possible.

It is possible to argue from validity to reliability since, if the scores correlate with some known criterion, it

is not likely that this would happen if purely random answers were being given. Thus, in this instrument if the social-system interview was able to distinguish between low and middle-income families, this would argue for reliability. It could also be argued that if a significant number of better than chance relationships were found between the social-system interview and the criteria, then something was being consistently measured, which, after all, is the question of reliability.

It will be seen that the Interview (Appendix B) consists of two sections. Form A consists of questions which identify the individuals who compose the social-system of the child. The second section, Form B, consists of questions about designated areas of the child's activity. Form A, covering four years, is completed before turning to Form B. Answers from Form A are written down on Form A-II. Answers from Form B are written down on Form B-II.

Below is an example of the method used in actually administering the interview:

The interview was preceded by introductions and explanations as to the purpose of the interview. The interviewer explained that he was from Head Start Research and would like to give a parent-interview. Before proceeding with the questions, it was explained that this interview was being given to all the mothers of the children in the three classes, and not just to the low-income mothers. It was explained that we wanted to find out whether the number of people with

whom the child interacted or who cared for him was related to adjustment in Head Start classes. Pains were taken to explain that we could not tell whether one sort of environment was better or worse, but that we felt the numbers of persons in the environment would make a difference. In the course of the interview, this information was repeated. It was found that although a thorough explanation might be given before the interview, this explanation was not always attended to by the mother. She was informed that no questions of a deeply personal nature were involved and that other members of the family would be welcome to be present during the interview; as was mentioned, they often were.

The average length of the interview was an hour and fifteen minutes. Some, in the case of large social-systems or many family moves, lasted as long as two hours. The raw data reveals no failure to answer. Often the middle-income mothers would proceed to bring out the Baby Book. However, it was found that these records seldom contained the information sought in the interview.

After completing the introductions, the interviewer proceeded to Form A-I. The names of all members of the child's social system are asked. Also the ages and sex and relationship to the child are specified. As will be seen from the analysis, this information has not yet been utilized. However, its inclusion enabled the mother to recall the responses to the other questions asked and aided the interviewer in explaining further questions on Form B.

After the questions on Form A were completed, the interviewer utilized this information to ask the questions on Form B. The procedure was as follows:

Question 1. a.: Did...(mention the names of possible caretakers from Form A) help feed...(mention the child's name)? If the answer is 'yes,' the interviewer asked the next question. "How many helped feed him?" These responses were noted on Form B-II. The interviewer then asked how many helped...sometimes?...quite often?...often?... regularly? Here the interviewer had to judge the extent, according to time, to which the enumerated individuals assisted or took over caretaking duties of the child. If it was determined that a given individual did as much as the mother, then a rating of '3' is given. If it seemed that given individuals helped about half as much as the mother, a rating of '2' was given. If the given individuals helped only occasionally, then a rating of '1' was assigned. With the information from Form A this determination was not difficult to make. For instance, if the mother worked five days a week, and the child had a regular baby sitter, the presumption was made that the child was fed by the baby sitter as often as by the mother. This was true of 'feeding' but not necessarily true of other areas in the child's activities. It was found that there are large fluctuations in the amount to which the mother's duties are assumed in the various areas of the child's life. Thus, as one might

expect, the fathers often refused to change diapers, yet assisted readily in other areas.

Question 1. b. is asked next. "Did...(enumerate members of the child's social-system identified on Form A) disagree about his eating?" It was explained here that violent conflict is not intended. Any disagreement, however mild and amicable, is asked for. The question was asked in this form in order to avoid answers determined by social desirability. However, it was found that low-income mothers were quite frank in discussing violent conflict. The rating here is on 'time.' If the two individuals who disagreed lived in the same home, a rating of '3' was given. If, for instance, the mother and grandmother disagreed, and the grandmother visited the home only once a week, a rating of '1' was made.

Question 1. c. in the area of eating involves, as do all the other areas of the child's activities, the variable of 'direction.' In many homes it is seen that directions come from a number of sources, yet not all these sources actively help with the child. And also, there are those who physically help the child but do not give directions. It is assumed here that the child senses the various sources of direction. Thus if the child is given something to eat by an older sibling at the command of the mother, and the older sibling does not protest, then there is only one source of direction: the mother. As in questions 1. a. and 1. b. an answer of 'yes' or 'no' was recorded, the numbers of those

who interact with the child (or in the presence of the child in the case of 'direction') is recorded, and then a determination is made as to the extent of the direction.

Question 1. d. involves the variables of 'assertion.' Did the child assert himself with various members of his social-system? To what extent? The recording of a 'yes' of 'no' and the number of individuals with whom he asserted himself and the extent were determined as above in questions 1. a., 1. b. and 1. c.

The questions in the other eight areas of the child's activities are completed in the same manner as for 'eating' and scored in the same fashion.

Although standardized, the questions often need interpretation. The method of interpretation is always by example. Thus in the area of '8. Outside Visits' and on 'd.' which involves the variable of 'assertion' the question is first asked as on the interview form. Then, it might be necessary to ask specifically whom the child would beg to take him from the house. "Did he run to the door when his Daddy left the house, and cry to be taken along?" "Did he want to be taken along when his Grandmother left after a visit?" etc.

Such interpretations in concrete form helped to sustain interest. As can be seen the interview tends to become quite tedious unless relieved by some conversation. It is also necessary in many cases to limit the recollections of the mother.

Scoring of the interview is done in a straightforward way. System-size is the sum total of individuals present in the child's social-system during a given year. Instability is the enumeration of those who enter and leave a child's social-system during the year. The four variables indicated by 'a.', 'b.', 'c.', and 'd.' under each of the nine areas of activity are scored by a summation of the scores across the nine areas. Thus, if in the area of 'feeding,' for instance, two people helped regularly with the child's feeding and one person helped sometimes then the score would be: 2 · 3 = 6 plus 1 · 1 = 1, 1 + 6 = 7.

No rationale could be determined for giving different weights to the various areas of the child's activity. From the fluctuations of the scores in a given year it would be difficult to generalize about which area of the child's activities would receive the largest numbers of caretakers in addition to the mother.

The scores of 'playmates' were taken only from question 1. a. in the area of play. The scores of 'outside visits' were taken only from question 1. a. in the area of Outside Visits.

Instruments Measuring Class Behavior

The Wechsler Pre-School and Primary Scale of Intelligence. The full test is composed of ten sub-tests plus a verbal IQ, a performance IQ, and a full-scale IQ. At the present time, since the test is new...1967.....there is

little in the literature regarding this test. In Appendix C there are tables showing the intercorrelations between the tests, reliability coefficients, and the correlations between the WPPSI and other popular intelligence tests. This information was taken from the manual. Wechsler, (1967) looks on the subtests as having diagnostic value. The full scale score is looked upon as a test of general intelligence.

The Cincinnati Autonomy Test Battery. This is a new battery of tests developed by Thomas Banta of the University of Cincinnati. This battery is composed of 15 separate scores. Banta in the manual (1967) gives the rationale for his tests.

> While educators have adequate tests for early childhood intelligence (for example, the Standford Binet or the Peabody Picture Vocabulary) the focus of such tests is on the appropriate, the conventional, and the quick response. The tests which make up the Cincinnati Autonomy Test Battery (CATB), were designed to measure autonomous functioning in problem solving.
>
> The word "autonomy", as it is used in the context of the CATB, refers to self-regulating behaviors that facilitate effective problem solving. My conviction is that these are not abilities which the child is forced or pressured into developing, but those abilities which the child enjoys developing in the process of his individually chosen work and play. The CATB measures curiosity, exploratory behavior, resistence to distraction, control of impulse, reflectivity, analytic perceptual processes, and innovative behavior. Each test emphasizes a separate aspect of self-regulating behavior relevant to good problem-solving strategies.
>
> All these factors are ready for further spontaneous development at age three, barring unfortunate home experiences. In addition these factors can be influences by pre-kindergarten educational efforts. The job for future is to track down the ways in which

> prekindergarten education works, and which kinds of educational practices are most effective. (p. 1)

In Appendix D are given the intercorrelations between the tests, the correlations between the CATB and the Binet and the reliability coefficients. In Appendix D there is a brief description of the tests and a rationale in Banta's own words.

The Play Situation-Picture Board Sociometric Technique

This sociometric technique was adapted by Dr. Robert Boger from ethods developed by Boyd R. McCandless and Helen R. Marshall. The technique is new and the only information available as to reliability and validity is that gathered at the E and R Center at Michigan State. A copy of a short report on reliability and validity is found in Appendix E. As will appear from the report, although the children from Head Start classes appear to be making deliberate choices over time and are not randomly choosing, there has yet to be devised an adequate test of validity. As can be inferred from the comments of testers, the validity of teacher ratings must be questioned. Teachers' comments to the Observers were that they really did not have time to observe the children for a long enough period of time to be certain of their ratings.

The technique is simple: Ten pictures of play situations are presented to the child. He chooses five. From a board on which are placed the pictures of all class members, he chooses five, any five, even repeats, and affixes these to the play situation he has chosen. He then chooses three

pictures of children he most likes to play with. In giving the test researchers noted that the children chosen as most-liked and as least-liked were often the same children. These children had a tendency to stand out from the class in some way.

Inventory of Factors Affecting Test Performance

This inventory was adapted from the Binet scales and developed at the University of California at Berkeley. The Bank Street College of Education in Boston then adapted the procedure for the WPPSI and CATB tests. A copy of the scale is found in the Appendix H. Testers' ratings of children's performance are made immediately after testing. Only total scores of factors detrimental to test behavior were used in the present study.

Brown-IDS Self Concept Referents Test

This is a test of Self Concept which employs Polaroid pictures which are presumed to be seen by the child as projections of the Self. Brown (undated) gives the rationale for his test:

> The process by which "awareness of own (sic) attributes become translated into self concepts was discussed by G. H. Mead (1956). His theory anchored the development of self-awareness in social interaction. "The self," he argued, "is not initially present at birth but arises in the process of social experience. It develops, in a given individual, as the result of his relations to the social system as a whole and to other individuals within that social system." (p. 212) Mead further argued that the individual experiences himself not directly, but in an indirect fashion, from his perceptions

> of the particular standpoint of other members of the same social group toward him, or from the generalized standpoint of the social system in which he functions. In other words, the individual becomes an "object" to himself by taking the attitudes of other individuals toward himself." (p. 7)

In Appendix F are given Brown's reliability coefficients. Also are given reliability coefficients from two Head Start classes in Lansing for a three week test-retest. As can be seen, the reliability coefficients for the Lansing classes are acceptably high.

Parten-Newell: Development of Social Behavior

No literature seems to be available for this schedule of observations. A sample of the instructions for the teacher are found in Appendix G. In general the teachers found no difficulty in using the rating schedule in describing the various activities of the children. Banta (1967) found the highest reliability in his tests to be that which referred to the least structured tests. Observers at the Michigan State E and R Center find the patterns of activity of various children quite similar from day to day and even across weeks.

The following are the dates on which the tests were given. It will be remembered that the Head Start Project classes began in mid-October of 1967.

WPPSI	11-2-67
CATB	12-7-67
Boger Sociometric	2-9-68

Parten-Newell	2-20-68
Brown Self-Concept	11-8-67

The testers employed in the Lansing Project were all graduate students in Education or Psychology at Michigan State University. These testers had previous experience with young children and most had some clinical background.

The Social-System Interview was given to the mothers of the children involved during the months of February and March of 1968. The interviewer had extensive experience with interviewing and with low-income families. He did not give any of the tests in the Head Start Project, nor did he make visits to the classrooms in which the three groups of children were present. His contacts with the mothers and children were confined to the one visit to the home, at which time the social-system interview was administered.

Design and Analysis

This research was designed as a correlational study. The responses of the mothers on the social-system interview are scored for each year and for the total four years, and these scores are then correlated with the scores from classroom tests and observations.

The analysis of the data was completed by means of three statistics. The F test was used to compare the responses of the low-income and middle-income groups of mothers' responses. As was suggested above, this would be some indication of validity since from the literature it could be hypothesized

that the low-income groups would score significantly different from the middle-income groups on the variables which are the focus of this study.

Pearson Product Moment correlations were run between the variables of the social-system interview. Correlations were run between the variables of the social-system interview and the test scores.

A multiple correlation was made between the independent variables, system-size, instability, caretakers, disagreement, and the test and observations scores as dependent variables. A multiple correlation was also run with independent variables, or the predictors, being 'Play,' 'Outside Visits,' and 'Assertion,' and the criterion being one of the tests or observations. It was known that the nature of the distributions and the large error variance along with the small N would tend to lower the significance of the multiple correlation. However, the use of the multiple correlation allows indications of relationships not available from non-parametric statistics. Thus it is possible to specify which variable in connection with the others contributes to the multiple R and to what extent it does so.

Hypotheses

At the end of Chapter II some general hypotheses were made. It is now possible to specify and expand these hunches

and to include the methods of testing the hypotheses.

Hypothesis I

An F test of comparison between means will distinguish between the low-income and middle-income mothers' responses on the variables of System-Size, Instability, Caretakers, Disagreement, Direction, Playmates, Outside Visits and Assertion. The means of the low-income mothers' responses on the variables of 'System-Size', 'Instability', 'Caretakers', 'Disagreement', and 'Direction' will be higher than those of the middle-income mothers. The means of the low-income mothers' responses on the variables of 'Playmates', 'Outside Visits', and 'Assertion' will be lower than the responses of the middle-income mothers' responses.

It is understood of Hypotheses II to V, inclusively, that the hypotheses are made about each of the four years of the child's life and about the score summed over the four years.

The scores summed over the four years exclude the variable of system-size. No total score is computed for this variable.

Hypothesis II

Employing the statistic of the Pearson r the responses of the mothers, the variables of system-size, instability, caretakers, direction, and disagreement will correlate negatively with the:

a. scores of the WPPSI.

b. scores of the CATB.

Hypothesis III

Employing the statistic of the Pearson r the responses of the mother, the variables of assertion, outside visits, and playmates will correlate positively with the:

a. scores of the WPPSI

b. scores of the CATB

Hypothesis IV

Employing the statistic of a multiple correlation from the response of the mothers on variables of System-Size, Instability, Caretakers, Direction, and Disagreement, it will be possible to predict:

a. The scores of the WPPSI

b. The scores of the CATB

c. The scores of 'most liked' on the Boger Sociometric.

Hypothesis V

Employing the statistic of a multiple correlation, from the responses of the mothers on the variables of Playmates, Outside Visits, Assertion, it will be possible to predict:

a. The scores of the WPPSI

b. The scores of the CATB

c. The scores of 'most liked' on the Boger Sociometric

Summary

In this chapter the procedures employed in the study were presented; the sample was described, and the development

and the nature of the Social-Systems Interview was reviewed. The instruments used in measuring the behavior of the children in the class situation were described. Finally the design and analysis of the study was presented and specific hypotheses were made.

IV

RESULTS AND ANALYSIS

Introduction

In this chapter the results of the analysis of the data from the social-system interview and the measures taken in Head Start are presented. The results of the social-system interview are given first, preceded by a restatement of the variables about which information was sought in the interview. Each hypothesis is then presented in turn with the results of the multiple correlation. Each presentation is followed by a brief discussion.

Since there are tests and observations in the classroom about which no hypothesis was made but which are of interest to this study, the results of multiple correlations employing the same variables as were used in the hypotheses will be given in this chapter.

In the case of each analysis a brief discussion will follow the results. A more lengthy discussion will form the content of Chapter V.

Social-System Interview

For the purposes of interpretation a brief restatement of the variables is made. The first four variables given were not used in the predictions. They appear in Table 1 and are helpful in interpreting results.

Sex: is scored 1 for boys and 2 for girls.

Race: this variable was scored 1 for Caucasians, 2 for Negros and 3 for Mexican-Americans. As with 'sex' the

interpretation allowed by these variables is quite limited.

Father Absence: is scored 0 to 4. These scores indicate the number of years the father was absent from the home. It is proper to assume here an underlying continuity.

Older Siblings: is scored 0 to 9. In this study only older siblings were counted. 9 was the largest number of older siblings.

System Size: enumerates for each year all persons, older than the child, who were in a position to interact with the child and did. It does not include younger siblings or infrequent visitors.

Instability: is the enumeration of those who interacted with the child and entered or left the child's social-system during a given year.

Caretakers: enumerates and rates the extent of caretaking duties assumed by others than the mother. The mother is not included in this score. Thus the scores are deviations from a score of 0 which indicates that the mother was the sole caretaker in every area of the child's activity.

Disagreement: enumerates and rates the extent to which persons were in disagreement about the care of the child. The mother is included in this score.

Direction: enumerates and rates the extent to which persons, other than the mother, gave orders to the child or about the child in the child's presence. Such persons might or might not physically care for the child.

Assertion: enumerates and rates the extent to which the child asserted himself to obtain some specific goal. This score includes the mother.

Playmates: enumerates those who played with or watched the child during play. A rating is made of the extent to which others than the mother interacted at play with the child.

Outside Visits: enumerates and rates the extent to which others than the mother took the child from the home for any purpose. The mother's trips from the home with the child are not counted unless she is accompanied by another older than the child.

It will be remembered that ratings on all variables are made according to time.

Results

In Table 1 the ranges, means, and standard deviations of the variables are given for the low-income group.

In Table 2 the intercorrelations of the variables are given for the low-income group.

Discussion

As can be seen from the data presented in Table 1, the distributions are skewed. This can be interpreted as a result of the scoring method or as a result of the nature of the sample. There are indications that it is the nature of the sample that is reflected in the skewness. An inspection of the variables of 'older siblings', 'system-size', and 'instability' which merely enumerate and do not rate indicates

Table 1. Range, Means, and Standard Deviations of Variables from Low-Income Mothers' Responses on Social-System Interview. N = 30

Mothers' Responses	Range	Mean	Standard Dev.
Father Absence	0 - 4	1.30	1.26
Older Siblings	0 - 9	2.16	2.56
System Size I[a]	2 - 20	7.86	4.29
System Size II	2 - 25	7.40	4.62
System Size III	2 - 21	6.70	4.18
System Size IV	1 - 14	5.80	3.50
Instability I	0 - 13	.96	2.74
Instability II	0 - 19	2.00	3.45
Instability III	0 - 20	1.73	2.88
Instability IV	0 - 13	2.20	3.17
Instability T	0 - 46	7.03	9.68
Caretakers I	1 - 115	29.06	26.67
Caretakers II	7 - 125	33.53	28.10
Caretakers III	5 - 94	30.63	25.65
Caretakers IV	0 - 72	24.70	19.93
Caretakers T	8 - 354	118.06	89.10
Disagreement I	0 - 81	17.46	17.52
Disagreement II	0 - 97	19.56	20.16
Disagreement III	0 - 81	17.50	18.67
Disagreement IV	0 - 78	17.86	17.31
Disagreement T	7 - 304	99.06	160.32

[a]Roman numerals indicate years in child's life to which mother's responses referred.

Table 1. continued

Mothers' Responses	Range	Mean	Standard Dev.
Direction I	3 - 138	35.30	32.46
Direction II	3 - 131	40.03	29.78
Direction III	0 - 114	40.36	30.13
Direction IV	0 - 89	30.30	25.50
Direction T	0 - 421	149.33	103.69
Assertion I	2 - 82	21.16	19.38
Assertion II	0 - 116	31.66	29.19
Assertion III	1 - 174	36.33	34.81
Assertion IV	3 - 127	35.10	29.94
Assertion T	8 - 560	133.76	126.98
Playmates I	1 - 45	12.43	9.08
Playmates II	4 - 45	14.06	9.29
Playmates III	4 - 36	11.26	8.28
Playmates IV	2 - 80	10.33	8.29
Playmates T	5 - 120	45.36	29.68
Outside Visits I	0 - 20	5.60	4.64
Outside Visits II	0 - 20	5.70	4.96
Outside Visits III	1 - 21	5.06	4.91
Outside Visits IV	0 - 18	4.90	5.29
Outside Visits T	2 - 79	20.96	17.33

Table 2. Intercorrelations of Variables from Low-Income Mothers' Responses on Social-System Interview. N=30

	Sex	Fa A	OldS	Syst I	Syst II	Syst III	Syst IV	Inst I	Inst II
Father Absence	-.27								
Older Siblings	-.03	-.45							
System Size I*	.00	-.04	.33						
System Size II	.00	-.13	.41	.75					
System Size III	.03	-.09	.51	.79	..89				
System Size IV	.00	-.45	.70	.63	.53	.67			
Instability I	-.33	.22	-.27	.26	.00	.00	.19		
Instability II	-.11	.15	-.46	.18	-.20	-.26	-.09	.54	
Instability III	-.12	.34	-.23	.09	-.07	-.08	-.05	.34	.62
Instability IV	-.14	.32	-.21	.49	.28	.40	.23	.62	.41
Instability T	-.19	.31	-.39	.33	.00	.01	.08	.78	.82
Caretakers I	.10	.00	.13	.40	.29	.25	.24	.30	.05
Caretakers II	.21	-.18	.15	.23	.37	.18	.06	.02	.06
Caretakers III	.17	-.12	.30	.58	.46	.51	.44	.22	.04
Caretakers IV	.16	-.44	.44	.27	.39	.38	.55	.11	-.04
Caretakers T	.18	-.19	.27	.42	.42	.36	.34	.19	.04
Disagreement I	.02	-.01	-.03	.38	.05	.06	.39	.69	.54
Disagreement II	.25	-.20	.19	.28	.31	.21	.37	.13	.15
Disagreement III	.11	-.42	.56	.39	.37	.40	.56	-.01	-.11
Disagreement IV	.08	-.08	.42	.60	.68	.68	.58	.10	-.14
Disagreement T	-.10	-.26	.59	.35	.33	.37	.52	.04	-.04
Direction I	.13	.09	.08	.58	.56	.51	.25	.17	-.03
Direction II	.22	-.19	.24	.39	.56	.38	.27	.05	-.01
Direction III	.15	-.13	.30	.77	.64	.68	.57	.26	.13
Direction IV	.02	-.30	.51	.48	.60	.61	.62	.09	-.09
Direction T	.17	-.16	.33	.63	.67	.62	.48	.16	-.02
Assertion I	.26	-.05	.10	.51	.35	.28	.37	.26	.13
Assertion II	.43	-.14	.18	.46	.51	.43	.33	-.03	.00
Assertion III	.33	-.14	.27	.40	.38	.47	.43	-.04	.07
Assertion IV	.14	-.15	.39	.52	.65	.67	.62	.14	-.12
Assertion T	.21	-.21	.30	.39	.41	.43	.41	.02	-.07
Playmates I	-.14	.01	.24	.75	.71	.69	.35	.10	-.07
Playmates II	.09	-.16	.40	.74	.87	.83	.48	-.12	-.22
Playmates III	.01	-.31	.72	.68	.60	.70	.77	.00	-.17
Playmates IV	-.01	-.41	.76	.43	.47	.55	.81	.07	-.19
Playmates T	.05	-.15	.38	.72	.73	.74	.58	.04	-.14
Outside Visits I	-.03	.00	.17	.30	.32	.25	.14	.09	-.13
Outside Visits II	.12	-.11	.20	.32	.47	.31	.15	.00	-.04
Outside Visits III	.20	.03	.16	.40	.33	.22	.14	.26	.25
Outside Visits IV	.23	-.18	.06	.13	.17	.10	.20	.14	.09
Outside Visits T	.17	-.06	.03	.31	.35	.23	.15	.15	.06

Table 2. continued

	Inst III	Inst IV	Inst T	Care I	Care II	Care III	Care IV	Care T	Disa I	Disa II
Instability IV	.44									
Instability T	.75	.78								
Caretakers I	.29	.45	.33							
Caretakers II	.32	.19	.18	.78						
Caretakers III	.16	.60	.31	.83	.67					
Caretakers IV	.03	.28	.12	.59	.65	.69				
Caretakers T	.24	.43	.27	.92	.89	.90	.80			
Disagreement I	.41	.27	.62	.31	.11	.19	.23	.24		
Disagreement II	.16	.01	.13	.20	.30	.13	.48	.30	.61	
Disagreement III	-.06	.00	-.07	.30	.33	.37	.64	.44	.33	.67
Disagreement IV	-.01	.24	.03	.26	.23	.39	.51	.38	.42	.72
Disagreement T	-.04	.05	.00	.33	.28	.48	.59	.46	.09	.18
Direction I	.27	.58	.31	.83	.67	.77	.47	.79	.21	.23
Direction II	.26	.24	.16	.68	.84	.57	.67	.78	.26	.62
Direction III	.17	.65	.39	.68	.54	.88	.66	.77	.28	.29
Direction IV	.04	.36	.13	.50	.55	.66	.84	.70	.06	.31
Direction T	.20	.52	.27	.79	.75	.83	.75	.88	.26	.42
Assertion I	.32	.30	.33	.67	.44	.51	.34	.57	.53	.47
Assertion II	.15	.28	.18	.43	.37	.49	.50	.53	.32	.73
Assertion III	.06	.45	.12	.44	.38	.64	.65	.58	.18	.53
Assertion IV	.09	.40	.16	.45	.42	.60	.74	.60	.33	.65
Assertion T	.06	.27	.08	.49	.40	.55	.56	.55	.39	.62
Playmates I	-.06	.42	.13	.54	.48	.63	.27	.52	.02	-.05
Playmates II	-.18	.32	-.05	.39	.45	.62	.48	.54	-.02	.23
Playmates III	-.05	.19	.00	.40	.28	.68	.51	.50	-.10	.15
Playmates IV	-.07	.18	.00	.35	.29	.56	.73	.52	.11	.26
Playmates T	-.05	.40	.08	.51	.41	.73	.56	.62	.06	.21
Outside Visits I	.21	.30	.15	.79	.35	.68	.43	.73	.00	.00
Outside Visits II	.26	.30	.17	.73	.84	.71	.58	.82	.00	.16
Outside Visits III	.52	.50	.51	.65	.82	.54	.28	.61	.28	.19
Outside Visits IV	.35	.35	.34	.74	.75	.64	.70	.80	.13	.21
Outside Visits T	.40	.40	.35	.81	.80	.70	.53	.81	.13	.00

Table 2. continued

	Disa III	Disa IV	Disa T	Dir I	Dir II	Dir III	Dir IV	Dir T	Asrt I	Asrt II
Disagreement IV	.68									
Disagreement T	.69	.39								
Direction I	.23	.44	.13							
Direction II	.53	.54	.22	.75						
Direction III	.46	.55	.44	.78	.65					
Direction IV	.53	.49	.54	.54	.65	.76				
Direction T	.51	.59	.37	.88	.87	.91	.81			
Assertion I	.30	.46	.09	.73	.64	.63	.30	.69		
Assertion II	.52	.70	.07	.64	.77	.64	.44	.73	.71	
Assertion III	.51	.61	.23	.57	.59	.69	.56	.70	.46	.83
Assertion IV	.66	.84	.46	.54	.66	.69	.71	.75	.45	.72
Assertion T	.57	.69	.23	.52	.61	.61	.34	.66	.65	.81
Playmates I	.14	.39	.27	.67	.40	.71	.44	.65	.43	.28
Playmates II	.40	.66	.32	.64	.58	.76	.66	.76	.35	.56
Playmates III	.56	.52	.66	.39	.34	.71	.67	.60	.40	.33
Playmates IV	.63	.51	.70	.24	.38	.60	.77	.56	.24	.31
Playmates T	.54	.67	.60	.61	.48	.80	.64	.73	.43	.49
Outside Visits I	.27	.18	.39	.68	.55	.57	.37	.65	.52	.31
Outside Visits II	.34	.26	.41	.69	.75	.64	.51	.76	.46	.45
Outside Visits III	.00	.15	-.10	.76	.65	.60	.32	.67	.69	.51
Outside Visits IV	.30	.12	.25	.64	.71	.59	.59	.72	.44	.43
Outside Visits T	.22	.20	.18	.79	.77	.66	.66	.79	.61	.51

Table 2. continued

	Asrt III	Asrt IV	Asrt T	Play I	Play II	Play III	Play IV	Play T	OutV I	OutV II
Assertion IV	.77									
Assertion T	.78	.70								
Playmates I	.28	.36	.36							
Playmates II	.54	.64	.50	.81						
Playmates III	.37	.53	.41	.56	.64					
Playmates IV	.49	.64	.44	.33	.50	.84				
Playmates T	.55	.70	.52	.73	.83	.79	.67			
Outside Visits I	.32	.35	.44	.59	.41	.44	.35	.60		
Outside Visits II	.42	.43	.50	.57	.55	.42	..40	.61	.85	
Outside Visits III	.36	.27	.38	.47	.37	.23	.09	.38	.59	.70
Outside Visits IV	.53	.43	.42	.59	.31	.24	.42	.40	.66	.78
Outside Visits T	.47	.41	.50	.52	.45	.32	.31	.52	.84	.92

Table 2. continued

	OutV III	OutV IV
Outside Visits IV	.69	
Outside Visits T	.87	.88

*Roman numerals indicate year to which mothers' responses referred.

that the skewed distributions are a result of the nature of the sample. It is difficult to believe that this sample is representative of the population of low-income families.

However, it can be seen from an inspection of Table 2 that the variables although related to size of immediate family are not so determined that they are measuring the same thing. This point is crucial to the justification of the use of social-system instead of family size. Thus older-siblings is correlated .24 with playmates during the first year. The raw data from the interview reflects the fact that the variables are measuring other than family size. In a few cases the mother was the only caretaker. In other cases there were as many as nine persons who shared caretaking duties with the mother. In some cases these persons were not relatives.

It will also be noticed from Table 2 that there are differences in the intercorrelations for the four years on a given variable. These differences reflect variations across years in the social-environment of the child. These variations are evidence for the utility of asking questions about each year separately.

Hypothesis I

Introduction

It was hypothesized that the scores of the variables of the low-income mothers would be significantly higher on 'system-size', 'instability', 'caretakers', 'disagreement', and 'direction' than the scores of the middle-income mothers.

It was hypothesized that this would be true of each of the four year's responses and true of the scores summed over the four years.

It was further hypothesized that the scores of the variables of the middle-income mothers on 'assertion', 'playmates', and 'outside visits' would be significantly higher than scores of the low-income mothers. It was hypothesized that this would be true of each of the four years' responses and true of the score summed over the four years.

Results

The results of the tests are given in Table 3. As can be seen the hypothesis is only partially supported. The scores of the low-income mothers are generally higher on the variables about which it was predicted they would be higher. However, after the first year they did not score higher than the middle-income mothers on the variable of 'instability.'

On the variable of 'assertion' the hypothesis was not supported. Although the differences are not significant, except for the total score, the differences are clearly in a direction contrary to the hypothesis. On 'outside visits' the middle-income mothers scores are somewhat higher during the last two years but not during the first two years. On 'playmates' the results of the tests were in the direction opposite to that predicted. This was true of each year and true of the score summed over four years.

Table 3. Means of Variables from Low-Income and Middle-Income Mothers' Responses on Social-System Interview. F Test of Significance Between Means of Two Groups.

Variable	Means of Low Income Group N=30	Means of Mid Income Group N=15	F.	Sig.*
		FIRST YEAR		
Older Siblings	2.16	.66		
System Size	7.86	5.06	5.69	.01
Instability	4.83	2.00	.67	.22
Caretakers	30.90	23.73	.75	.19
Disagreement	19.12	3.92	10.87	.01
Direction	35.30	21.33	2.48	.06
Assertion	22.22	14.50	1.74	.10
Playmates	12.43	7.00	4.95	.01
Outside Visits	6.22	4.61	1.37	.12
		SECOND YEAR		
System Size	7.40	6.06	.83	.18
Instability	4.28	5.20	.11	.46
Caretakers	34.68	24.20	1.85	.09
Disagreement	21.74	7.91	5.45	.01
Direction	40.03	26.53	2.63	.056
Assertion	32.75	20.8	2.42	.07
Playmates	14.06	8.00	5.63	.01
Outside Visits	6.33	3.85	2.90	.05

*Significance level is for one-tailed test.

Table 3. continued

Variable	Means of Low Income Group N=30	Means of Mid Income Group N=15	F.	Sig.
		THIRD YEAR		
System Size	6.70	4.86	2.57	.05
Instability	4.72	5.50	.10	.35
Caretakers	32.82	23.00	1.88	.09
Disagreement	19.44	9.58	3.15	.04
Direction	43.28	27.13	3.85	.03
Assertion	36.33	27.15	.83	.18
Playmates	12.5	7.20	6.18	.008
Outside Visits	6.33	6.37	.00023	.49
		FOURTH YEAR		
System Size	5.80	4.73	1.16	.14
Instability	3.14	1.66	1.06	.15
Caretakers	27.44	23.66	.42	.25
Disagreement	19.85	8.14	5.85	.01
Direction	34.60	29.86	.40	.26
Assertion	35.10	25.06	1.50	.22
Playmates	11.07	6.93	3.54	.067
Outside Visits	6.12	6.38	.01	.43

Table 3. continued

Variable	Means of Low Income Group N=30	Means of Mid Income Group N=15	F.	Sig.
	TOTAL FOUR YEARS			
Instability	8.79	9.12	.005	.47
Caretakers	118.06	94.60	.87	.18
Disagreement	99.0	68.60	.37	.27
Direction	149.33	128.00	.38	.27
Assertion	133.76	81.00	2.38	.06
Playmates	45.36	29.80	3.71	.03
Outside Visits	22.27	19.06	.25	.25

Discussion

The rationale for hypothesizing in the direction indicated was that these variables of 'assertion', 'playmates' and 'outside visits' were thought to be factors positively contributing to intelligence, autonomy, and social adjustment. 'System-size', 'caretakers', 'instability', 'disagreement', 'direction', were thought to be factors which would impede growth of intelligence, autonomy, and social adjustment. It will be seen that 'instability' appears as correlated positively with intelligence, autonomy, and adjustment while 'playmates' appears to be negatively associated with these variables.

It can be seen from an inspection of Table 2, intercorrelations between the social-system variables, that these differences are not merely a reflection of the size of the immediate family but reflect differing patterns of child care. It appears that the low-income mothers, in this sample, allowed their children to be taken from the home during the first year by relatives and acquaintances more than did the middle-income mothers. The low-income mothers allowed substantially more interaction between infant and visitor, and endured more interference with their own proper way of handling the child. It will be noted that the factor of 'disagreement' appears to be detrimental to the obtaining of high scores on more desirable behaviors as measured by the tests.

In conclusion, if such factors as disagreement between caretakers, many sources of direction, and many caretakers are indicators of a fragmented social-system then it can be said that the low-income children live in a considerably less unified social-system than the middle-income children.

Hypothesis II

Introduction

Hypothesis II states that the variables of 'system size', 'instability', 'caretakers', 'disagreement', and 'direction' will correlate negatively with the scores of the WPPSI and the CATB. It is stated that this will be true for each year to which the responses of the low-income mothers refer and will also be true of the total score.

The number of subjects available for the WPPSI was 27. The number available for the CATB was 26. Two of the children tested on the WPPSI were not tested on the CATB. It is therefore not possible to make fully accurate comparisons between the results of the two tests unless the N is diminished.

Each of the tests and its relationships to the variables of the social-system interview is presented in turn.

WPPSI

Results

The results of the correlations are given in Table 4. The hypothesis was not sustained. Only one variable appears

to have a consistently negative relationship to the scores of the WPPSI. This is 'system-size.' While 'disagreement' and 'direction' appear to have negative relationships with the WPPSI scores this is true only for the second two years and the total score. 'Instability' appears to be positively re-related to the WPPSI scores throughout. This is in a direction contrary to the hypothesis.

Discussion

An inspection of Table 2 reveals that 'instability' has only a slight relationship with the variables that appear to be negatively related to intelligence (as measured by the WPPSI). These results are somewhat surprising since Chilman lists frequent moves as a characteristic of educationally non-conducive families. In the sample 'instability' was closely associated with number of family moves.

An inspection of the raw data and the results of Table 2 indicate why 'instability' relates positively with WPPSI scores. The mothers in 'unstable families' made efforts to escape disagreement and other factors in the home that would have been detrimental to high scores on the WPPSI. 'Instability' and 'disagreement', from Table 2, correlates .69. This correlation drops to .15 in the second year. It appears these mothers have the ability to adjust the social-system to eliminate sources of disagreement. This might indicate a stable source of direction in the social-system of the child. It will be noted that mothers were referred to instead of fathers. Table 2 indicates a positive relationship between

Table 4. Simple Correlations Between System-Size, Instability, Caretakers, Disagreement, and Direction and WPPSI Scores. N=27

WPPSI Scores	System Size				Instability					Caretakers				
	I	II	III	IV	I	II	III	IV	T	I	II	III	IV	T
Full Scale	-.13	-.05	-.13	-.07	.38	.16	.26	.18	.29	-.05	.00	-.07	-.09	-.05
Verbal	-.12	.03	-.09	-.13	.32	.11	.31	.15	.25	.07	.15	-.02	.02	.06
Performance	-.12	-.13	-.15	.00	.40	.18	.18	.17	.28	-.16	-.13	-.11	.18	-.16
Information	-.14	-.06	-.23	.11	.32	.12	.23	.02	.19	.03	.11	-.07	.05	.01
Vocabulary	-.26	-.14	-.27	-.07	.42	.19	.34	.22	.34	.19	.23	.04	.19	.18
Arithmetic	-.09	.00	-.02	-.07	.26	-.10	.07	.11	.07	.01	.00	-.05	.08	-.03
Similarities	-.01	.18	.07	-.11	.15	.22	.37	.18	.26	.00	.17	.04	.10	.09
Comprehension	-.08	.09	-.05	.-19	.21	.08	.31	.13	.21	.10	.18	-.02	-.05	.06
Animal House	-.01	.06	.00	-.07	.19	.16	.07	.17	.18	-.36	-.17	-.22	-.27	-.29
Picture Complet.	.08	-.12	-.15	-.22	.38	.06	-.12	.02	.09	.21	.00	.02	-.21	.03
Mazes	-.31	-.39	-.36	-.05	.42	.17	.07	.04	.22	-.13	-.25	.15	-.20	-.21
Geometric Design	.02	-.05	-.02	.00	.37	.02	.11	.27	.24	.14	.07	.10	-.04	.08
Block Design	-.06	-.23	-.14	.13	.36	.25	.36	.22	.36	-.01	-.04	.05	-.03	-.01

df = 26 r = .317 r = .374 r = .437
one tailed test p = .050 p = .025 p = .010

Table 4. continued

WPPSI Scores	Disagreement					Direction				
	I	II	III	IV	T	I	II	III	IV	T
Full Scale	.33	.26	-.26	.05	-.37	.00	.00	-.12	-.25	-.09
Verbal	.31	-.06	-.09	.20	-.27	.12	.18	-.06	-.14	.04
Performance	.29	.24	-.38	-.11	-.40	-.14	-.18	-.16	-.31	-.21
Information	.31	.29	-.13	.05	-.32	.02	.13	-.14	-.23	-.04
Vocabulary	.38	.13	-.08	.09	-.26	.12	.24	-.05	-.04	.08
Arithmetic	.22	.29	-.05	.17	-.21	.07	.03	-.13	-.25	-.05
Similarities	.20	.10	-.05	.31	-.16	.10	.20	.06	.08	.13
Comprehension	.23	-.15	-.10	.14	-.22	.21	.19	-.01	-.16	.09
Animal House	.04	.01	-.40	-.10	-.39	-.17	-.18	-.14	-.23	-.21
Picture Complet.	.18	-.21	-.04	-.10	-.09	.06	-.03	-.07	-.24	-.06
Mazes	.21	.00	-.43	-.33	-.24	-.31	-.41	-.32	-.39	-.40
Geometric Design	.30	.02	-.18	.00	-.35	.16	.08	.05	-.18	.07
Block Design	.39	.19	-.20	-.04	-.25	-.10	-.10	-.02	-.12	-.09

df = 26	r = .317	r = .374	r = .437
one tailed test	p = .050	p = .025	p = .010

'instability' and 'father absence.' Also, the raw data indicates that mothers took the initiative in family moves.

CATB

Results

The results of the analysis are given in Table 5. In general the hypothesis is not sustained. Only one correlation reaches significance at the .05 level consistently through the four years. This is the correlation between 'system-size' and Task Competence. In general the variables from the social-system interview appear to have a somewhat consistent relationship with Kindergarten Prognosis, Task Competence, and Field Independence.

It should be noted that the degree of relationship between the CATB tests is not as high as that between the subtests of the WPPSI. W, the coefficient of concordance, for the WPPSI tests is .54. The W for the CATB tests is .18. These Ws were computed for the tests given to the present sample. The intercorrelations of the WPPSI and the CATB tests given in Appendix D show the same relationships prevail.

Unlike the other CATB tests, a high score on Motor Impulse Control is not a favorable score, a high score indicates lack of Impulse Control.

Hypothesis III

Introduction

Hypothesis III states that the variables of 'assertion', 'playmates', and 'outside visits' will be positively related

Table 5. Simple Correlations Between System-Size, Instability, Caretakers, Disagreement, and Direction and CATB Scores. N=27

CATB Scores	System Size				Instability					Caretakers				
	I	II	III	IV	I	II	III	IV	T	I	II	III	IV	T
Task Initiation	.06	.14	.06	-.01	-.14	.12	-.10	.08	.01	.00	.13	.13	.23	.12
Curiosity Box	-.04	.15	.00	.04	.04	.05	-.08	.10	.06	-.06	-.07	-.04	.09	-.03
Dog and Bone	-.06	.10	.02	-.10	.05	-.14	-.21	.02	-.04	.05	.08	-.02	.14	.07
Reflectivity EC-MFF	-.19	-.16	-.13	-.11	.06	.01	.06	-.04	.02	-.20	-.06	-.13	.04	-.11
Field Independence EC-FFT	-.21	-.10	-.08	.01	.23	-.20	-.29	-.08	-.11	-.17	-.33	-.29	-.09	-.26
Motor Impulse Control	-.17	-.09	-.26	-.16	.08	-.15	-.10	-.21	-.13	.10	.11	-.03	.11	.08
Incidental Learning	-.05	-.15	-.04	.11	.16	.12	.24	.32	.25	.25	.05	.19	.18	.18
Intentional Learning	-.15	.02	.00	.01	.09	-.06	.17	.19	.08	.12	.13	.06	.13	.12
Persistence	-.29	-.42	-.38	-.24	.16	.13	.25	-.11	.13	.00	.05	-.06	-.09	-.01
Resistence to Distraction	-.09	-.19	-.05	.09	.07	.04	.34	.23	.20	.16	.00	.08	.00	.07
Task Competence	-.35	-.57	-.46	-.37	.19	.12	.19	.02	.15	-.07	-.17	-.15	-.32	-.19
Social Competence	-.10	-.09	-.08	-.21	-.05	.05	.16	.13	.12	.09	-.05	-.01	-.21	-.03
Kindergarten Prognosis	-.27	-.41	-.35	-.34	.00	.11	.15	-.02	.08	-.08	-.16	-.11	-.35	-.19
Verbal Curiosity	-.24	.12	-.12	-.35	.03	.13	.04	-.09	.07	-.06	.16	-.20	.09	.00
Fantasy Related Behavior	-.13	-.05	-.23	-.08	.15	.35	.44	.05	.32	.16	.16	-.04	-.01	.08

df = 25 r = .381 r = .445
one tailed test p = .025 p = .010

Table 5. continued

CATB Scores	Disagreement					Direction				
	I	II	III	IV	T	I	II	III	IV	T
Task Initiation	-.04	.24	.10	.04	.10	.08	.15	.20	.14	.15
Curiosity Box	.02	.15	-.02	.05	.06	.06	.05	.10	.04	.07
Dog and Bone	-.17	.00	.04	-.08	-.05	.05	.09	.00	.02	.05
Reflectivity EC-MFF	.07	-.08	.06	-.16	-.03	-.24	-.10	-.16	-.09	-.17
Field Independence EC-FFT	.00	-.18	-.18	-.10	-.14	-.28	-.33	-.33	-.18	-.31
Motor Impulse Control	.18	.38	.34	.27	.34	.08	.19	-.06	-.01	.06
Incidental Learning	.13	-.04	-.04	.01	.01	.19	.04	.12	.07	.12
Intentional Learning	.03	-.08	-.05	.02	-.02	.13	.06	-.08	-.04	.02
Persistence	.13	-.05	.03	-.24	-.03	-.18	-.11	-.18	-.22	-.19
Resistence to Distraction	.16	-.14	.02	-.03	.00	.14	-.01	.02	-.06	.03
Task Competence	.07	-.25	-.08	-.31	-.17	-.21	-.34	-.35	-.54	-.38
Social Competence	-.16	-.31	-.30	-.28	-.30	.14	-.12	-.02	-.25	-.05
Kindergarten Prognosis	-.06	-.36	-.25	-.39	-.31	-.13	-.35	-.27	-.52	-.34
Verbal Curiosity	-.15	.01	-.20	-.12	-.12	-.08	.12	-.08	.10	.01
Fantasy Related Behavior	.18	.02	-.19	-.16	-.03	.08	.11	-.02	-.03	.04

df = 25 r = .381 r = .445
one tailed test p = .025 p = .010

to the scores of the WPPSI and the CATB.

WPPSI

Results

The results of these correlations are given in Table 6. In general the hypothesis is not sustained. There is a tendency for assertion to be related positively to some tests and negatively to others. In this category only one r reaches significance at the .05 level in the second year. In the third year 'assertion' and Similarities are correlated .37. In the correlations between 'playmates' and WPPSI scores, there is more consistency in that the tendencies are negative throughout. The rs are highest in the second and third years. There is a tendency for 'outside visits' to be positively related to some of the tests and negatively to others. The effects of 'outside visits' on vocabulary and comprehension are good, but the effect on Animal House and Mazes is bad.

Discussion

During the interview it became apparent that the parents of both low-income and middle-income children did not look upon 'assertion' as a good quality. Both groups saw the undemanding baby as the "good" baby. There was a decided tendency for the mothers to report that demanding babies changed for the "better" in later years and for mothers who reported that their infants were "good" babies to become more assertive in later years.

Table 6. Simple Correlations Between Assertion, Playmates, and Outside Visits and WPPSI Scores. N=27

WPPSI Scores	Assertion					Playmates					Outside Visits				
	I	II	III	IV	T	I	II	III	IV	T	I	II	III	IV	T
Full Scale	.07	.08	.00	.06	.10	-.16	-.18	-.33	-.23	-.21	-.03	-.01	.18	-.02	.07
Verbal	.18	.23	.06	.22	.19	-.16	-.11	-.29	-.21	-.11	.09	.08	.18	.03	.14
Performance	-.03	-.08	-.09	-.11	-.01	-.14	-.24	-.31	-.20	-.28	-.15	-.10	.14	-.08	-.07
Information	.20	.19	.00	.10	.14	-.20	-.20	-.31	-.20	-.18	.06	.02	.16	.01	.11
Vocabulary	.18	.21	.13	.20	.17	-.31	-.23	-.33	-.08	-.19	.07	.11	.27	.32	.26
Arithmetic	.04	.10	.06	.11	.12	-.10	-.13	-.29	-.23	-.12	.08	.02	.06	-.07	.05
Similarities	.11	.30	.15	.37	.20	-.11	.05	-.13	-.10	.00	-.06	.00	.05	-.04	.00
Comprehension	.25	.13	-.08	.09	.16	.03	.00	-.18	-.27	.00	.26	.22	.32	.03	.26
Animal House	-.23	-.15	-.18	-.19	-.19	-.01	.00	-.27	-.24	-.19	-.32	-.09	.11	-.15	-.09
Picture Complet.	.08	-.03	-.10	-.17	-.06	.04	-.20	-.18	-.28	-.14	.11	-.09	-.03	-.19	-.05
Mazes	-.14	-.33	-.23	-.25	-.19	-.26	-.48	-.33	-.22	-.34	-.12	-.23	-.04	-.19	-.15
Geometric Design	.17	.13	.13	-.02	.24	.08	-.08	-.22	-.13	-.14	.15	.14	.31	.18	.26

df = 26, one tailed test: r = .317, p = .050; r = .374, p = .025; r = .437, p = .010

It must be remembered when interpreting the variable of 'playmates' that adults were playmates during the first two years of the child's life while older siblings appear to be 'playmates' during the second two years of life.

CATB

Results

The results of the correlations between the variables of 'assertion', 'playmates', and 'outside visits' and the scores of the CATB are found in Table 7. The hypothesis was only partially sustained. It will be seen that 'assertion', 'playmates' and 'outside visits' do have relationships with Field Independence, Task Competence and Kindergarten Prognosis, but that these are negative relationships which is contrary to the hypothesis. 'Playmates' likewise seems to have a negative relationship with Reflectivity and Persistence.

Discussion

Intercorrelations between the scores of the CATB tests reveal that the tests of Task Competence and Kindergarten Prognosis are the tests most highly correlated, .82. While Persistence is correlated with both Task Competence and Kindergarten Prognosis, .53 and .42, respectively, Field Independence is correlated with neither. In fact, Field Independence is not correlated significantly with any of the other CATB tests. 'Outside visits', which is not highly correlated with other CATB tests, does relate to Field Independence significantly on four of the five scores.

Table 7. Simple Correlations Between Assertion, Playmates, and Outside Visits and CATB Scores. N=26

CATB Scores	Assertion					Playmates					Outside Visits				
	I	II	III	IV	T	I	II	III	IV	T	I	II	III	IV	T
Task Initiation	.02	.28	.25	.15	.22	.00	.16	-.03	-.04	.15	-.06	.21	.23	.23	.17
Curiosity Box	.12	.19	.13	.21	.18	.02	.08	-.14	-.06	.12	.05	.10	.15	.14	.12
Dog and Bone	-.10	.06	.08	.04	.05	.06	.02	-.29	-.11	.04	.22	.20	.07	.24	.20
Reflectivity EC-MFF	-.18	-.11	-.06	-.01	-.10	-.36	-.23	-.18	.08	-.21	-.15	-.09	-.12	.09	-.07
Field Independence	-.23	-.34	-.29	-.13	-.29	-.22	-.25	-.25	.03	-.25	-.32	-.46	-.46	-.21	-.39
Motor Impulse Control	.21	.22	-.01	.13	.15	-.19	-.08	-.09	-.11	.02	.15	.06	-.05	-.03	.03
Incidental Learning	.16	.00	.18	.14	.13	.02	-.11	.00	.12	.08	.16	.08	.20	.32	.22
Intentional Learning	-.06	-.13	-.06	.10	-.05	-.03	-.03	-.18	-.06	.07	.18	.20	.14	.24	.21
Persistence	-.06	-.17	-.17	-.11	-.17	-.32	-.42	-.27	-.30	-.22	.10	-.01	.03	.00	.03
Resistence to Distraction	.15	.00	.11	.07	.09	-.16	-.14	.05	.10	.02	.13	.00	.12	.19	.12
Task Competence	-.19	-.27	-.21	-.32	-.28	-.45	-.56	-.44	-.44	-.33	-.04	-.20	-.16	.12	-.15
Social Competence	.11	-.05	-.04	-.11	-.04	.02	-.12	-.15	-.33	.04	.26	.11	.25	.09	.19
Kindergarten Prognosis	-.07	-.21	-.21	-.34	-.25	-.35	-.43	-.34	-.50	-.23	.00	-.16	-.05	-.14	-.10
Verbal Curiosity	-.07	-.05	-.18	.01	-.10	-.01	.00	-.22	-.09	-.01	.01	.17	.12	.15	.13
Fantasy Related Behavior	.23	.01	-.13	.00	-.01	-.09	-.18	-.12	-.09	-.09	.13	.13	.24	.21	.20

df = 25 r = .323 r = .381 r = .445
one tailed test p = .050 p = .025 p = .010

Banta is quoted in Chapter III as saying that children at the age of three are ready to learn the behaviors he attempts to measure. Perhaps this is why the scores which are taken from the mother's responses about the first year of life do not correlate highly with the CATB scores. On the WPPSI tests the scores from the first year of life seemed to predict best.

Hypothesis IV

Introduction

Hypothesis IV states that by means of a multiple correlation employing the variables of 'system-size', 'instability', 'caretakers', 'disagreement', and 'direction' the scores on the WPPSI, the CATB, and the Boger Sociometric can be predicted.

In each case, the WPPSI, the CATB, and the Sociometric, the number of subjects tested is different. Therefore each multiple correlation must be reported separately. For this reason the hypothesis will be presented in three sections. Each section will present the results and the discussion of the multiple R relating to the respective test.

The interpretation of the multiple R as a degree of relationship and as a predictor is somewhat different. The R expresses a relationship, but a high degree of relationship does not always imply accuracy of prediction. In general, however, the multiple R is interpreted in the same manner as the simple Pearson r (McNemar, 1962).

The number of independent variables is rather large in relation to the N. This tends to lower the significance level. The method of calculating the level of significance is that recommended by McNemar (1962) as being exact and making compensations for the number of variables used in the equation. Thus the number of predictor variables does tend to inflate the R but does not affect the level of significance.

WPPSI (as dependent variable)

Remarks

The N for this multiple R was 27. Three children were not tested. In the analysis they were dropped.

Results

The results of the multiple correlations are given in Tables 8 through 12. Each table gives the correlations between the mothers' responses on the variables for the given year.

First year: the hypothesis seems to be partially sustained for this year's responses. Five of the Rs reach the .05 level of significance.

Second year: the hypothesis is not sustained for this year; no R reaches significance.

Third year: no R reaches significance.

Fourth year: one R, the Mazes test, is predicted at the .01 level of significance.

Total score: two Rs reach significance at the .05 level. These are the tests of Mazes and Performance.

Table 8. Multiple Correlations. Independent Variables are System-Size, Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses About Child's First Year. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R.	Sig.
Full Scale	System-Size	Neg.	.58	.04
Verbal	System-Size	Neg.	.56	.05
Performance	Instability	Pos.	.56	.06
Information	System-Size	Neg.	.49	.13
Vocabulary	System-Size	Neg.	.71	.003
Arithmetic	System-Size	Neg.	.43	.22
Similarities	Direction	Pos.	.37	.31
Comprehension	System-Size	Neg.	.54	.07
Animal House	Caretakers	Neg.	.59	.03
Picture Comprehension	Instability	Pos.	.45	.19
Mazes	Instability	Pos.	.63	.02
Geometric Design	Instability	Pos.	.45	.19
Block Design	Disagreement	Pos.	.48	.15

Table 9. Multiple Correlations. Independent Variables are System-Size, Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses About Child's Second Year. Dependent Variables are WPPSI Scores. N=27

WPPSI	Major Contributor	Direction	R.	Sig.
Full Scale	Instability	Pos.	.20	.43
Verbal	Disagreement	Pos.	.29	.42
Performance	Instability	Pos.	.26	.44
Information	Disagreement	Pos.	.30	.40
Vocabulary	System-Size	Neg.	.46	.18
Arithmetic	Disagreement	Pos.	.20	.48
Similarities	Disagreement	Pos.	.40	.27
Comprehension	Direction	Pos.	.21	.47
Animal House	Instability	Pos.	.36	.33
Picture Comprehension	System-Size	Neg.	.14	.49
Mazes	Direction	Neg.	.51	.11
Geometric Design	Direction	Pos.	.18	.53
Block Design	Instability	Pos.	.33	.38

Table 10. Multiple Correlations. Independent Variables are System-Size, Instability, Caretakers, Disagreement, and Direction from Low-Income Mothers' Responses About Child's Third Year. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R	Sig.
Full Scale	Instability	Pos.	.37	.32
Verbal	Instability	Pos.	.34	.35
Performance	Disagreement	Neg.	.41	.25
Information	Instability	Pos.	.32	.38
Vocabulary	Instability	Pos.	.44	.21
Arithmetic	Direction	Neg.	.28	.43
Similarities	Instability	Pos.	.41	.26
Comprehension	Instability	Pos.	.33	.37
Animal House	Disagreement	Neg.	.49	.18
Picture Comprehension	Instability	Neg.	.27	.44
Mazes	Disagreement	Neg.	.52	.10
Geometric Design	Disagreement	Neg.	.27	.44
Block Design	Instability	Pos.	.42	.23

Table 11. Multiple Correlations. Independent Variables are System-Size, Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses About Child's Fourth Year. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R	Sig.
Full Scale	Direction	Neg.	.47	.17
Verbal	Disagreement	Pos.	.49	.14
Performance	Direction	Neg.	.53	.08
Information	Direction	Neg.	.41	.26
Vocabulary	Direction	Neg.	.51	.11
Arithmetic	Direction	Neg.	.50	.12
Similarities	Disagreement	Pos.	.51	.11
Comprehension	System-Size	Neg.	.44	.20
Animal House	Instability	Pos.	.39	.28
Picture Comprehension	Direction	Neg.	.29	.42
Mazes	Direction	Neg.	.66	.01
Geometric Design	Instability	Pos.	.48	.15
Block Design	Instability	Pos.	.46	.18

Table 12. Multiple Correlations. Independent Variables are Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses About Child's Total Four Years. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R	Sig.
Full Scale	Disagreement	Neg.	.49	.08
Verbal	Disagreement	Neg.	.40	.19
Performance	Disagreement	Neg.	.53	.05
Information	Disagreement	Neg.	.42	.16
Vocabulary	Disagreement	Neg.	.54	.04
Arithmetic	Disagreement	Neg.	.24	.41
Similarities	Instability	Pos.	.34	.29
Comprehension	Disagreement	Neg.	.33	.29
Animal House	Disagreement	Neg.	.47	.10
Picture Comprehension	Direction	Neg.	.27	.39
Mazes	Direction	Neg.	.61	.01
Geometric Design	Disagreement	Neg.	.48	.09
Block Design	Instability	Pos.	.48	.09

Discussion

It must be remembered that these Rs due to the large error variances and the high number of predictors must be at least .56 in order to be significant at the .05 level. The R, even when it does not reach significance, does express the relationship.

The tables indicate the highest partial correlation coefficient and the sign of this partial coefficient. This indicates which variable in conjunction with the others in the prediction contributed the most to the R. It does not indicate what would be the highest correlation between the independent and dependent variables in a simple correlation. Thus 'instability' is most highly correlated with the WPPSI scores in the simple correlations given in Table 4. "System-size' appears in Table 8 as being the highest partial correlation coefficient.

The rationale for combining the variables as independent variables in the equation was that it was felt that they would all be negatively related to the scores on the WPPSI. As was indicated in the discussion of the previous hypotheses, this was not so. Therefore these variables were not chosen because they would give the highest R but on the basis of previous hypothesizing. The multiple correlation is a method of determining to what extent the various independent variables contribute different 'validities' to the R. Thus if they are measuring the same thing, they will give an R which is no higher than the highest of the variables entering

into the equation. There are certain subtleties of interpretation that will not be attempted here.

These remarks apply to the multiple correlations used throughout the analysis of this study.

CATB (as dependent variable)

Remarks

The N for this group was 26. Four children were not tested. They were dropped in the analysis.

Results

The results of the multiple correlations are presented in Tables 13 through 17. In general for the four years and for the total score summed over the four years the hypothesis was not sustained.

First year: no R reaches significance.

Second year: only the scores of the test, Motor Impulse Control, can be predicted at the .05 level.

Third year: three tests, Motor Impulse Control, Task Competence, and Kindergarten Prognosis, are predicted at the .05 level.

Total score: only Task Competence can be predicted at the .05 level.

Discussion

As was to be expected from the presentation of the material in the discussion of hypothesis II, Table 5, the Rs are higher for the last two years, ie., the responses of the mothers are correlated higher with the scores when these

Table 13. Multiple Correlations. Independent Variables are System Size, Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses About Child's First Year. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Direction	Pos.	.23	.47
Curiosity Box	Direction	Pos.	.42	.24
Dog and Bone	Disagreement	Neg.	.35	.35
Reflectivity EC-MFF	System Size	Neg.	.32	.40
Field Independence EC-EFT	Instability	Pos.	.45	.20
Motor Impulse Control	System Size	Neg.	.48	.16
Incidental Learning	System Size	Neg.	.35	.36
Intentional Learning	System Size	Neg.	.42	.25
Persistence	System Size	Neg.	.45	.21
Resistence to Distraction	System Size	Neg.	.40	.27
Task Competence	System Size	Neg.	.47	.17
Social Competence	Direction	Pos.	.35	.36
Kindergarten Prognosis	System Size	Neg.	.31	.41
Verbal Curiosity	Instability	Pos.	.36	.34
Fantasy Related Behavior	System Size	Neg.	.38	.31

Table 14. Multiple Correlations. Independent Variables are System Size, Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses about Child's Second Year. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Disagreement	Pos.	.31	.40
Curiosity Box	Disagreement	Neg.	.30	.42
Dog and Bone	Instability	Neg.	.18	.47
Reflectivity EC-MFF	System Size	Neg.	.16	.47
Field Independence EC-EFT	Instability	Neg.	.40	.28
Motor Impulse Control	Disagreement	Pos.	.55	.08
Incidental Learning	Direction	Pos.	.33	.38
Intentional Learning	Caretakers	Pos.	.20	.48
Persistence	System Size	Neg.	.50	.13
Resistence to Distraction	Direction	Pos.	.37	.32
Task Competence	System Size	Neg.	.58	.05
Social Competence	Disagreement	Neg.	.37	.32
Kindergarten Prognosis	System Size	Neg.	.49	.15
Verbal Curiosity	Instability	Pos.	.24	.46
Fantasy Related Behavior	Instability	Pos.	.41	.27

Table 15. Multiple Correlations. Independent Variables are System Size, Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses about Child's Third Year. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Direction	Pos.	.33	.38
Curiosity Box	Direction	Pos.	.39	.30
Dog and Bone	Instability	Neg.	.23	.47
Reflectivity EC-MFF	Disagreement	Pos.	.25	.46
Field Independence EC-EFT	Direction	Neg.	.43	.23
Motor Impulse Control	Disagreement	Pos.	.58	.05
Incidental Learning	Instability	Pos.	.30	.41
Intentional Learning	Direction	Neg.	.43	.23
Persistence	System Size	Neg.	.49	.15
Resistence to Distraction	Instability	Pos.	.37	.32
Task Competence	Direction	Neg.	.57	.06
Social Competence	Disagreement	Neg.	.36	.34
Kindergarten Prognosis	Direction	Neg.	.43	.23
Verbal Curiosity	Direction	Pos.	.41	.26
Fantasy Related Behavior	Instability	Pos.	.53	.10

Table 16. Multiple Correlations. Independent Variables are System Size, Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses about Child's Fourth Year. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Caretakers	Pos.	.29	.43
Curiosity Box	Caretakers	Pos.	.16	.49
Dog and Bone	Caretakers	Pos.	.30	.42
Reflectivity EC-MFF	System Size	Pos.	.44	.23
Field Independence EC-EFT	Direction	Neg.	.29	.43
Motor Impulse Control	Disagreement	Pos.	.60	.04
Incidental Learning	Instability	Pos.	.42	.25
Intentional Learning	Direction	Neg.	.43	.24
Persistence	Caretakers	Pos.	.34	.36
Resistence to Distraction	Instability	Pos.	.36	.34
Task Competence	Direction	Neg.	.68	.01
Social Competence	Instability	Pos.	.39	.29
Kindergarten Prognosis	Direction	Neg.	.61	.03
Verbal Curiosity	System Size	Neg.	.42	.24
Fantasy Related Behavior	Disagreement	Neg.	.20	.53

Table 17. Multiple Correlations. Independent Variables are Instability, Caretakers, Disagreement, and Direction, from Low-Income Mothers' Responses about Child's Four Years Totaled. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Direction	Pos.	.16	.48
Curiosity Box	Caretakers	Neg.	.27	.39
Dog and Bone	Disagreement	Neg.	.13	.50
Reflectivity EC-MFF	Direction	Neg.	.22	.44
Field Independence EC-EFT	Direction	Neg.	.32	.33
Motor Impulse Control	Disagreement	Pos.	.47	.11
Incidental Learning	Instability	Pos.	.29	.36
Intentional Learning	Caretakers	Pos.	.22	.44
Persistence	Direction	Neg.	.44	.14
Resistence to Distraction	Instability	Pos.	.21	.44
Task Competence	Direction	Neg.	.57	.03
Social Competence	Disagreement	Neg.	.40	.21
Kindergarten Prognosis	Direction	Neg.	.46	.12
Verbal Curiosity	Disagreement	Neg.	.20	.45
Fantasy Related Behavior	Instability	Pos.	.35	.28

responses refer to the later two years of the child's first four years of life. In the discussion of that hypothesis it was remarked that Banta indicated that the behaviors he was measuring should have their beginnings in the third year. It will likewise be remembered that the CATB tests of Task Competence and Kindergarten Prognosis are intercorrelated most highly.

Sociometric: Category Most-Liked (dependent variable)

Remarks

The N for these multiple correlations is 30. The Boger Sociometric is a much shorter test than the WPPSI or CATB. It was feasible to return for make-up tests when children were not immediately available. Also special pains had to be taken to include all the children's pictures so as not to bias the results.

The score on the category Most-Liked was achieved by counting the times a given child is chosen as most liked by his peers. No weighting system was used in scoring. It can be surmised that a proper weighting system would increase the possibility of higher correlations. Also the N used in the analysis is 30 although in both the Boger and the Brown, one child was missing from the tests and the actual N was 29. Thus the Rs are in the conservative direction.

Results

The results of the multiple correlations are given in Table 18. The levels of significance given for the category

Most-Liked can be halved. In Table 18 the multiple Rs for the correlations between the variables and other parts of the Sociometric and the Brown are given. They will be discussed later. Because of the difficulties cited above no firm conclusions can be given. However, the size of the Rs inclines one to the belief that under proper conditions a relationship between the variables used as predictors and the criterion would emerge.

Discussion

The variable of 'disagreement' appears most often in these correlations after the first year. It would appear logical that an atmosphere high in 'disagreement' would contribute negatively to qualities that would enable a child to be liked. It is noteworthy that 'disagreement' contributes negatively to Most-Liked and positively to Least Liked. The relationship of 'disagreement' to low scores on the Brown Self Concept is also interesting. It should likewise be noted that the low-income and middle-income children score significantly different on the Boger and the Brown, with scores in favor of the middle-income children.

It is of interest to note that in correlations between disagreement and the category Most-Liked for the total group, low-income and middle-income combined, N = 45, there were significant correlations for each of the four years. This cannot be explained by the presence of both the low-income and middle-income groups combined. The r between Most-Liked and socio-economic status was only .05. However the

Table 18. Multiple Correlations. Independent Variables are System Size, Instability, Caretakers, Disagreement, and Direction from Low-Income Mothers' Responses about Each of Child's Four Years and Four Years Totaled. Dependent Variables are Sociometric and Brown Self-Concept. N=30

Criterion	Highest Partial Corr. Coeff.	R.	Sig.*
	FIRST YEAR		
Boger Situation	Disagreement -.36	.39	.51
Boger Most Liked	Disagreement -.33	.47	.27
Boger Least Liked	System Size -.18	.37	.56
Brown Self Concept	System Size .31	.46	.28
	SECOND YEAR		
Boger Situation	Disagreement -.36	.39	.51
Boger Most Liked	Disagreement -.33	.47	.27
Boger Least Liked	System Size .18	.37	.56
Brown Self Concept	Disagreement -.16	.26	.87
	THIRD YEAR		
Boger Situation	Disagreement -.46	.50	.18
Boger Most Liked	Disagreement -.25	.41	.44
Boger Least Liked	Disagreement .26	.44	.33
Brown Self Concept	Disagreement -.41	.50	.18

Table 18. continued

Criterion	Highest Partial Corr. Coeff.	R.	Sig.*
	FOURTH YEAR		
Boger Situation	Caretakers	-.20	.32	.73
Boger Most Liked	Disagreement	-.35	.44	.33
Boger Least Liked	Instability	-.20	.26	.86
Brown Self Concept	Instability	.35	.41	.45
	TOTAL FOUR YEARS		
Boger Situation	Disagreement	-.35	.42	.27
Boger Most Liked	Caretakers	.30	.40	.32
Boger Least Liked	Disagreement	.07	.22	.84
Brown Self Concept	Disagreement	-.43	.44	.21

*Significance level is for two-tailed test.

correlations between socioeconomic status and the category Least Liked and socioeconomic status and the Brown show significant relationships.

It should be remembered that the variable 'disagreement' refers to the members of the child's social system not to the child. A further discussion of this variable will be made in Chapter V.

Hypothesis V

Introduction

Hypothesis V states that by means of the variables of 'assertion', 'playmates', and 'outside visits' the scores of the WPPSI, the CATB, and the category Most Liked on the Boger can be predicted.

As with Hypothesis IV the Ns are different for the WPPSI, the CATB, and the Boger. Each set of multiple Rs will be presented separately.

WPPSI (as dependent variable)

Remarks

The N for this multiple correlation was 27. In the analysis the three children not tested were dropped.

Results

The results of the multiple correlations are given in Tables 19 through 23.

First year: the results do not sustain the hypothesis. Only one R reaches significance. The variable of 'playmates' contributes to a significant R on the test of Vocabulary.

Second year: as with year one, the WPPSI tests predicted with a significance level beyond .05 is that of Vocabulary and Mazes.

Third year: the test of Vocabulary can be predicted at a significance level of .02. No other R reaches significance.

Fourth year: Comprehension, Vocabulary, and Similarities can be predicted at the .05 level of significance. Similarities is significant at .007.

Total score: two tests, Vocabulary and Geometric Design can be predicted at the .03 level of significance.

Discussion

In general throughout the tables the variable that appears to be the best predictor is 'playmates'. It is a consistently negative contributor to R. It appears most often as the highest partial correlation coefficient after year one.

The variables of 'assertion' and 'outside visits' are generally positive contributors to R.

It can be seen that the intercorrelations of the WPPSI, given in Appendix C, indicate that the tests of Vocabulary, Comprehension, and Similarities correlate highly. Arithmetic appears to be associated with these tests. In the fourth year, Table 21, it can be predicted with a significance level of .09.

Table 19. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits, from Low-Income Mothers' Responses about Child's First Year. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R.	Sig.
Full Scale	Playmates	Neg.	.23	.35
Verbal	Playmates	Neg.	.35	.17
Performance	Outside Visits	Neg.	.17	.43
Information	Playmates	Neg.	.41	.10
Vocabulary	Playmates	Neg.	.53	.02
Arithmetic	Playmates	Neg.	.21	.38
Similarities	Assertion	Pos.	.23	.36
Comprehension	Outside Visits	Pos.	.35	.18
Animal House	Outside Visits	Neg.	.41	.11
Picture Comprehension	Outside Visits	Pos.	.12	.47
Mazes	Playmates	Neg.	.27	.31
Geometric Design	Assertion	Pos.	.19	.41
Block Design	Assertion	Pos.	.22	.37

Table 20. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits, from Low-Income Mothers' Responses about Child's Second Year. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R.	Sig.
Full Scale	Playmates	Neg.	.31	.24
Verbal	Assertion	Pos.	.39	.13
Performance	Playmates	Neg.	.25	.33
Information	Playmates	Neg.	.44	.07
Vocabulary	Playmates	Neg.	.53	.02
Arithmetic	Playmates	Neg.	.27	.29
Comprehension	Outside Visits	Pos.	.29	.27
Animal House	Outside Visits	Neg.	.19	.40
Picture Comprehension	Playmates	Neg.	.23	.36
Mazes	Playmates	Neg.	.49	.04
Geometric Design	Playmates	Neg.	.31	.28
Block Design	Playmates	Neg.	.28	.28
Similarities	Assertion	Pos.	.35	.17

Table 21. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits, from Low-Income Mothers' Responses about Child's Third Year. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R.	Sig.
Full Scale	Playmates	Neg.	.42	.09
Verbal	Playmates	Neg.	.41	.11
Performance	Playmates	Neg.	.38	.14
Information	Playmates	Neg.	.39	.12
Vocabulary	Playmates	Neg.	.52	.02
Arithmetic	Playmates	Neg.	.35	.18
Similarities	Assertion	Pos.	.26	.32
Comprehension	Outside Visits	Pos.	.43	.08
Animal House	Playmates	Neg.	.36	.17
Picture Comprehension	Playmates	Neg.	.18	.41
Mazes	Playmates	Neg.	.35	.18
Geometric Design	Playmates	Neg.	.45	.06
Block Design	Playmates	Neg.	.23	.36

Table 22. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits, from Low-Income Mothers' Responses about Child's Fourth Year. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R.	Sig.
Full Scale	Playmates	Neg.	.36	.16
Verbal	Playmates	Neg.	.53	.02
Performance	Playmates	Neg.	.21	.39
Information	Playmates	Neg.	.38	.15
Vocabulary	Playmates	Neg.	.48	.05
Arithmetic	Playmates	Neg.	.42	.09
Similarities	Assertion	Pos.	.60	.007
Comprehension	Playmates	Neg.	.47	.05
Animal House	Playmates	Neg.	.25	.33
Picture Comprehension	Playmates	Neg.	.29	.26
Mazes	Outside Visits	Pos.	.27	.28
Geometric Design	Outside Visits	Pos.	.30	.26
Block Design	Outside Visits	Pos.	.06	.50

Table 23. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits, from Low-Income Mothers' Responses about Child's Four Years Totaled. Dependent Variables are WPPSI Scores. N=27

WPPSI Scores	Major Contributor	Direction	R.	Sig.
Full Scale	Playmates	Neg.	.36	.17
Verbal	Playmates	Neg.	.36	.17
Performance	Playmates	Neg.	.33	.20
Information	Playmates	Neg.	.37	.15
Vocabulary	Playmates	Neg.	.51	.03
Arithmetic	Playmates	Neg.	.26	.31
Similarities	Assertion	Pos.	.25	.32
Comprehension	Outside Visits	Pos.	.32	.22
Animal House	Assertion	Neg.	.22	.37
Picture Comprehension	Playmates	Neg.	.15	.45
Mazes	Playmates	Neg.	.34	.20
Geometric Design	Playmates	Neg.	.50	.03
Block Design	Playmates	Neg.	.34	.19

CATB (as dependent variable)

Remarks

The N for these multiple correlations is 26.

Results

The results for these multiple correlations are presented in Tables 24 through 28.

First year: only two Rs reach significance. These refer to the tests of Persistence and Task Competence.

Second year: three Rs reach significance. They refer to the tests of Field Independence, Persistence, and Task Competence. It is noteworthy that the variable of 'outside visits' appears in the multiple correlation as a negative contributor to R which expresses the relationship between the independent variables and Field Independence.

Third year: only one R reaches significance. This is the R that refers to Kindergarten Prognosis.

Total scores: only one R reaches significance. This R refers to Kindergarten Prognosis.

Discussion

As with the multiple correlations employing the same independent variables and the WPPSI scores as dependent variables the best predictor is 'playmates.' However, in the Rs referring to the CATB 'playmates' appears as a major contributor even in the first year. 'Assertion', as in the Rs referring to the WPPSI, appears as a positive contributor to R. Outside visits, except in the test of Field Independence appears as a positive contributor.

Table 24. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits, from Low-Income Mothers' Responses about Child's First Year. Dependent Variables are CATB Scores. N=27

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Outside Visits	Neg.	.11	.48
Curiosity Box	Assertion	Pos.	.15	.45
Dog and Bone	Outside Visits	Pos.	.37	.16
Reflectivity EC-MFF	Playmates	Neg.	.37	.17
Field Independence EC-EFT	Outside Visits	Neg.	.33	.22
Motor Impulse Control	Playmates	Neg.	.44	.08
Incidental Learning	Outside Visits	Pos.	.21	.39
Intentional Learning	Outside Visits	Pos.	.30	.25
Persistence	Playmates	Neg.	.49	.05
Resistence to Distraction	Playmates	Neg.	.36	.19
Task Competence	Playmates	Neg.	.53	.02
Social Competence	Outside Visits	Pos.	.30	.26
Kindergarten Prognosis	Playmates	Neg.	.44	.08
Verbal Curiosity	Outside Visits	Pos.	.24	.35
Fantasy Related Behavior	Playmates	Neg.	.35	.19

Table 25. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits from Low-Income Mothers' Responses about Child's Second Year. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Assertion	Pos.	.29	.27
Curiosity Box	Assertion	Pos.	.19	.41
Dog and Bone	Outside Visits	Pos.	.23	.37
Reflectivity EC-MFF	Playmates	Neg.	.24	.35
Field Independence EC-EFT	Outside Visits	Neg.	.48	.05
Motor Impulse Control	Assertion	Pos.	.38	.15
Incidental Learning	Playmates	Neg.	.21	.37
Intentional Learning	Outside Visits	Pos.	.36	.18
Persistence	Playmates	Neg.	.50	.04
Resistence to Distraction	Playmates	Neg.	.20	.40
Task Competence	Playmates	Neg.	.58	.01
Social Competence	Outside Visits	Pos.	.26	.33
Kindergarten Prognosis	Playmates	Neg.	.44	.08
Verbal Curiosity	Outside Visits	Pos.	.24	.35
Fantasy Related Behavior	Playmates	Neg.	.35	.19

Table 26. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits from Low-Income Mothers' Responses about Child's Third Year. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Assertion	Pos.	.37	.16
Curiosity Box	Playmates	Neg.	.33	.22
Dog and Bone	Playmates	Neg.	.42	.11
Reflectivity EC-MFF	Playmates	Neg.	.19	.41
Field Independence EC-EFT	Outside Visits	Neg.	.48	.05
Motor Impulse Control	Playmates	Neg.	.09	.48
Incidental Learning	Outside Visits	Pos.	.28	.30
Intentional Learning	Outside Visits	Pos.	.31	.25
Persistence	Playmates	Neg.	.33	.22
Resistence to Distraction	Outside Visits	Pos.	.14	.45
Task Competence	Playmates	Neg.	.45	.08
Social Competence	Outside Visits	Pos.	.38	.15
Kindergarten Prognosis	Playmates	Neg.	.37	.16
Verbal Curiosity	Outside Visits	Pos.	.36	.18
Fantasy Related Behavior	Outside Visits	Pos.	.39	.14

Table 27. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits from Low-Income Mothers' Responses about Child's Fourth Year. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Playmates	Neg.	.34	.21
Curiosity Box	Assertion	Pos.	.39	.19
Dog and Bone	Outside Visits	Pos.	.35	.19
Reflectivity EC-MFF	Outside Visits	Neg.	.16	.45
Field Independence EC-EFT	Playmates	Pos.	.31	.25
Motor Impulse Control	Assertion	Pos.	.32	.23
Incidental Learning	Outside Visits	Pos.	.33	.22
Intentional Learning	Outside Visits	Pos.	.34	.20
Persistence	Playmates	Neg.	.34	.20
Resistence to Distraction	Outside Visits	Pos.	.20	.40
Task Competence	Playmates	Neg.	.45	.08
Social Competence	Playmates	Neg.	.43	.09
Kindergarten Prognosis	Playmates	Neg.	.50	.04
Verbal Curiosity	Outside Visits	Pos.	.24	.24
Fantasy Related Behavior	Outside Visits	Pos.	.29	.27

Table 28. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits from Low-Income Mothers' Responses about Child's Four Years Totaled. Dependent Variables are CATB Scores. N=26

CATB Scores	Major Contributor	Direction	R.	Sig.
Task Initiation	Assertion	Pos.	.24	.36
Curiosity Box	Assertion	Pos.	.19	.42
Dog and Bone	Outside Visits	Pos.	.22	.37
Reflectivity EC-MFF	Playmates	Neg.	.23	.37
Field Independence EC-EFT	Outside Visits	Neg.	.40	.12
Motor Impulse Control	Assertion	Pos.	.20	.40
Incidental Learning	Outside Visits	Pos.	.23	.37
Intentional Learning	Outside Visits	Pos.	.31	.29
Persistence	Outside Visits	Pos.	.29	.27
Resistence to Distraction	Outside Visits	Pos.	.16	.44
Task Competence	Playmates	Neg.	.33	.21
Social Competence	Outside Visits	Pos.	.27	.31
Kindergarten Prognosis	Playmates	Neg.	.50	.04
Verbal Curiosity	Outside Visits	Pos.	.24	.35
Fantasy Related Behavior	Outside Visits	Pos.	.29	.27

Sociometric (category Most-Liked as dependent variable)

Remarks

As was mentioned before although the actual number of children tested was 29 the N used in analysis was 30. This tends to lower the Rs and the significance of the actual relationship.

Results

The results of the multiple correlations are given in Table 29.

Discussion

It is of interest to note that the variable of 'playmates' seems to contribute negatively to both the categories of Most and Least Liked on the Sociometric. It seems obvious from other data available at the E and R Center that children who are chosen Most Liked are often chosen Least Liked.

The category of Most Liked on the Boger is correlated .51 with the Brown Self Concept.

Additional Tests and Observations

In addition to the tests about which hypotheses were made there were other tests given to the children enrolled in the Lansing Experimental Project. The WPPSI, the CATB, and the ratings of test behavior were given only to the low-income children. The Sociometric, the Brown, were administered to all of the children. The Parten-Newell was made by the teachers only for the mixed experimental classes. These tests and observations not previously discussed will be briefly presented here.

Table 29. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits from Low-Income Mothers' Responses about Child's Four Years and Four Years Totaled. Dependent Variables are Scores of Sociometric and Brown Self Concept. N=30

Criterion	Highest Partial Corr. Coeff.	R.	Sig.*
	FIRST YEAR		
Boger Situation	Assertion	.03	.03	.99
Boger Most Liked	Playmates	-.19	.22	.70
Boger Least Liked	Outside Visits	-.21	.34	.35
Brown Self Concept	Playmates	.16	.21	.74
	SECOND YEAR		
Boger Situation	Assertion	.06	.06	.99
Boger Most Liked	Playmates	-.32	.36	.28
Boger Least Liked	Playmates	-.24	.33	.35
Brown Self Concept	Outside Visits	-.14	.16	.85
	THIRD YEAR		
Boger Situation	Playmates	-.26	.33	.37
Boger Most Liked	Playmates	-.15	.25	.62
Boger Least Liked	Outside Visits	-.17	.27	.54
Brown Self Concept	Outside Visits	.15	.18	.80

Table 29. continued

Criterion	Highest Partial Corr. Coeff.	R.	Sig.*
	FOURTH YEAR		
Boger Situation	Playmates	-.18	.20	.75
Boger Most Liked	Assertion	-.33	.39	.20
Boger Least Liked	Assertion	-.18	.29	.48
Brown Self Concept	Outside Visits	.12	.14	.90
	TOTAL FOUR YEARS		
Boger Situation	Outside Visits	.18	.19	.79
Boger Most Liked	Playmates	-.28	.36	.27
Boger Least Liked	Playmates	-.29	.39	.20
Brown Self Concept	Assertion	.11	.14	.90

*Significance level is for two-tailed test.

Development of Social Behavior

Introduction

These ratings of unstructured behavior were made during the month of February. This was approximately 16 weeks after the classes had begun. A copy of the definitions of behavior is found in Appendix G.

The independent variables are the same as those used in the multiple correlations using the WPPSI, the CATB, and the Sociometric as dependent variables. The two sets of independent variables are: first set...'system'size', 'caretakers', 'disagreement', and 'direction'; second set... 'assertion', 'playmates', and 'outside visits.' The results of the multiple correlations will be given followed by a brief discussion.

Results from the First Set of Independent Variables

The results of the multiple correlations are found in Table 30. The Rs in the first and fourth years of life appear to be significant. These significance levels are for two-tailed tests.

Discussion

Reference will be made to these observations in Chapter V. In general the predictions are best with regard to the first and fourth years of life.

Results of the Second Set of Independent Variables

The results of the multiple correlations are found in

Table 30. Multiple Correlations. Independent Variables are System-Size, Instability, Caretakers, Disagreement, and Direction. Dependent Variables are Teachers' Ratings on Development of Social Behavior. N=31

Dependent Variable	Highest Partial Corr. Coeff.	R.	Sig.
	FIRST YEAR		
Unoccupied Behavior	System Size	.29	.43 .36
Solitary Play	Direction	.27	.46 .26
Onlooker Behavior	Caretakers	.65	.68 .004
Parallel Play	Caretakers	.45	.55 .08
Associative Play	Instability	.47	.58 .05
Cooperative Play	Direction	.41	.62 .02
	SECOND YEAR		
Unoccupied Behavior	Instability	-.24	.31 .73
Solitary Play	Direction	-.20	.50 .17
Onlooker Behavior	Caretakers	.44	.50 .17
Parallel Play	Disagreement	.34	.50 .16
Associative Play	System Size	-.25	.48 .21
Cooperative Play	Direction	.38	.50 .17
	THIRD YEAR		
Unoccupied Behavior	Disagreement	.26	.48 .21
Solitary Play	Instability	-.31	.55 .08
Onlooker Behavior	Caretakers	.32	.45 .28
Parallel Play	Direction	-.38	.47 .23
Associative Play	System Size	-.29	.44 .32
Cooperative Play	Disagreement	-.31	.48 .21

Table 30. continued

Dependent Variable	Highest Partial Corr. Coeff.	R.	Sig.
	FOURTH YEAR		
Unoccupied Behavior	System Size	.28	.44 .33
Solitary Play	Caretakers	-.36	.56 .07
Onlooker Behavior	Caretakers	.67	.68 .005
Parallel Play	Direction	-.43	.49 .20
Associative Play	Caretakers	.50	.57 .05
Cooperative Play	Direction	.41	.52 .12
	TOTAL SCORE		
Unoccupied Behavior	Disagreement	.51	.58 .02
Solitary Play	Instability	-.28	.55 .04
Onlooker Behavior	Caretakers	.45	.46 .15
Parallel Play	Instability	-.25	.28 .68
Associative Play	Caretakers	.23	.44 .20
Cooperative Play	Instability	-.08	.15 .95

Table 31. The Rs for the third and fourth years are higher, in general, than for the first and second years.

Discussion

Reference will be made to these observations in Chapter V.

Inventory of Factors Affecting Test Performance

Introduction

These ratings are based on the Beller Scale. A copy of this scale is found in Appendix H. In the multiple correlations using the sets of independent variables described above the dependent variable is a score which is the summation of the scores achieved by the children on the first ten ratings on the scale. These ratings were made immediately after the child was tested.

Results

The results of the testers' ratings are given in Table 32, for the first set of independent variables, and in Table 33, for the second set of independent variables. As is evident from the tables, the test behavior on the WPPSI situation is not predictable, while the test behavior in the CATB situation is predictable from the first set of variables for each of the four years and from the second set of independent variables for the first years.

Table 31. Multiple Correlations. Independent Variables are Assertion, Playmates, and Outside Visits. Dependent Variables are Teachers' Ratings on Development of Social Behavior. N=31

Dependent Variable	Highest Partial Corr. Coeff.	R.	Sig.
	FIRST YEAR		
Unoccupied Behavior	Outside Visits	.31	.40 .18
Solitary Play	Outside Visits	-.28	.36 .26
Onlooker Behavior	Outside Visits	.30	.30 .40
Parallel Play	Assertion	-.19	.31 .65
Associative Play	Playmates	-.19	.23 .65
Cooperative Play	Playmates	.28	.39 .19
	SECOND YEAR		
Unoccupied Behavior	Assertion	-.29	.47 .06
Solitary Play	Outside Visits	-.27	.40 .17
Onlooker Behavior	Outside Visits	.37	.38 .22
Parallel Play	Playmates	-.25	.33 .34
Associative Play	Assertion	.23	.36 .28
Cooperative Play	Playmates	.13	.23 .68
	THIRD YEAR		
Unoccupied Behavior	Playmates	.65	.67 .001
Solitary Play	Outside Visits	-.43	.53 .02
Onlooker Behavior	Outside Visits	.26	.28 .51
Parallel Play	Outside Visits	.15	.19 .77
Associative Play	Assertion	-.09	.09 .96
Cooperative Play	Outside Visits	.38	.51 .04

Table 31. continued

Dependent Variable	Highest Partial Corr. Coeff.	R.	Sig.
	FOURTH YEAR		
Unoccupied Behavior	Playmates	.67	.68 .001
Solitary Play	Outside Visits	-.50	.59 .007
Onlooker Behavior	Outside Visits	.34	.37 .25
Parallel Play	Playmates	-.08	.14 .89
Associative Play	Outside Visits	.39	.47 .07
Cooperative Play	Assertion	.16	.17 .82
	TOTAL SCORE		
Unoccupied Behavior	Playmates	.47	.48 .05
Solitary Play	Outside Visits	-.35	.53 .02
Onlooker Behavior	Outside Visits	.37	.50 .04
Parallel Play	Playmates	-.13	.17 .84
Associative Play	Outside Visits	.29	.42 .13
Cooperative Play	Playmates	.18	.23 .66

Table 32. Multiple Correlations. Independent Variables are System-Size, Instability, Caretakers, Disagreement, and Direction from Low-Income Mothers' Responses about Child's Four Years and Four Years Totaled. Dependent Variables are Testers' Ratings of Factors Detrimental to Test Performance.

Criterion	Partial Correlation Coefficient		R.	Sig.
WPPSI Test[a] Behavior I	Disagreement	-.29	.44	.41
WPPSI Test Behavior II	Instability	-.30	.38	.60
WPPSI Test Behavior III	Instability	-.30	.38	.60
WPPSI Test Behavior IV	Caretakers	-.28	.37	.64
WPPSI Test Behavior T	Direction	.25	.34	.56
CATB Test[b] Behavior I	System Size	.42	.63	.04
CATB Test Behavior II	System Size	.58	.74	.004
CATB Test Behavior III	Disagreement	-.58	.77	.001
CATB Test Behavior IV	Caretakers	-.60	.69	.01
CATB Test Behavior T	Direction	.68	.70	.005

[a] N=27

[b] N=26

Table 33. Multiple Correlations. Independent Variables are Assertion, Playmates and Outside Visits. Dependent Variables are Factors Detrimental to Test Behavior.

Criterion	Partial Correlation Coefficient		R.	Sig.
WPPSI Test[a] Behavior I	Playmates	.40	.45	.14
WPPSI Test Behavior II	Assertion	-.46	.50	.07
WPPSI Test Behavior III	Assertion	-.35	.42	.18
WPPSI Test Behavior IV	Playmates	.19	.26	.65
WPPSI Test Behavior T	Playmates	.36	.23	.40
CATB Test[b] Behavior I	Playmates	.79	.79	.0005
CATB Test Behavior II	Playmates	.70	.71	.001
CATB Test Behavior III	Playmates	.35	.38	.29
CATB Test Behavior IV	Playmates	.19	.26	.65
CATB Test Behavior T	Outside Visits	-.35	.36	.36

[a] N=27

[b] N=26

Discussion

It will be remembered that the WPPSI tests are highly structured in the sense that definite instructions are given for the performance of certain tasks. The CATB tests, on the other hand, are relatively unstructured; the child is 'observed' rather than 'tested.'

Sociometric

The Rs resulting from the multiple correlations between the sets of independent variables given above and the categories of the Sociometric of play-situation and least-liked are given in Tables 18 and 29, already given. Inspection of these Rs indicates that no R reaches significance. Some discussion of these dependent variables has taken place. Further discussion will take place in Chapter V.

Brown IDS Self Concept

The Rs resulting from the multiple correlations between the sets of independent variables given above and the Brown Self-Concept are given in Tables 18 and 29. No R reaches significance at the .05 level. Some tendencies have been discussed. Further discussion is reserved for Chapter V.

Summary

In Chapter IV the results of the analysis of the data were presented. First, the data from the social-system interview for low-income mothers was presented and discussed.

Next the five hypotheses were each discussed with the

results of the tests. Finally, the analysis of the additional tests and observation was presented.

V

DISCUSSION

Introduction

It is possible to distinguish several ways of approaching the discussion of the material presented in the first four chapters of this study. It would seem helpful to delineate two points of view and to indicate the approach taken in the following discussion.

First, one could look upon the theory, the hypotheses, and their modes of testing from the position of "pure" research. From this point of view, some of the questions to be asked would be: Does the theory provide a logically consistent set of axioms or concepts? Does the theory allow for the operationalizing of its concepts in a testable form? Has the method of testing the hypotheses proved workable? Have the results been analyzed in accordance with the assumptions of statistics used in the analysis?

From the viewpoint of research, the answer to the above questions can be only a qualified 'yes.' In Chapter II the theory was presented. It was not presented in enough detail to make a final judgment about the logic of the relationships between the concepts. There are certain presumptions in its favor. A final answer could come, perhaps, only with further research. With regard to the operationalizing of the concepts in the chapter on results and analysis (Chapter IV), it was noted that two modes of operationalizing the concepts were not particularly fortunate. The variables of 'playmates' and

'instability' appeared in the testing to have exactly contrary results to those predicted. "Instability' appeared to be a consistently favorable factor in predicting desirable behaviors. 'Playmates' appeared as a consistently negative factor. The fault here seems to lie in the operationalizing of the concepts. 'Instability' would appear to be closely related to what Bertalanffy calls "equifinality" which is the ability of the system to achieve goals in different ways and to readjust after disturbances. Although 'instability' appears to be logically related to hierarchical order, it would perhaps best have been connected with equifinality. 'Playmates' was posited as a positive factor, yet appeared in the correlations as consistently related to negative behaviors. 'Playmates' was thought to be an operationalizing of the concept of spontaneous activity; one thinks of play in this fashion. However, from the results of the study one might better assume that what was measured was the hindering of spontaneous activity.

Were the assumptions underlying the statistics used in the analysis met? As McNemar (1962) notes, they seldom are. In the case of this study, it does not appear that the results of the analysis can be accepted without some qualification. It will be remembered in the section on limitations (Chapter I) that the sample offered for the present study was not random. Therefore this first violation will have to be kept in mind in interpreting any results. Ideally, the sample should have been much larger, say 100; and it should

have been randomly chosen from the Head Start population. The results from the viewpoint of adequate research can only be tentative guides for further research with a larger and more random population. In this case the statistic employed would more adequately reflect true parameters of the population of Head Start children.

The study had, however, quite practical aims. The theory was chosen with the teacher in mind, and assumptions were made as to what philosophical assumptions of the theory a teacher could comfortably accept. It is on this basis as well as on its internal consistency, that the theory should be judged. Secondly, the hypothesis were kept on a level that a teacher on three visits to a home could practically test. Thus, more in-depth or 'clinical' interviewing was avoided. The results of the study, while still qualified as to the statistical relationships between variables, can be fleshed out with practical experience in the actual giving of the interview. Finally, from the teacher's standpoint the results of the study must yield suggestions for the planning of educational experiences.

It is this latter essentially practically oriented viewpoint which will be adopted in the further discussion of the results of this study. Below is a schema illustrating three possible ways of interpreting the data gathered for the study:

1. Variables of Social System Interview	1. Intervening variables: personality factors, sets, patterns, etc.	1. Classroom behavior
2. Stimuli: variables of Social System Interview	2. Inferred variables about which nothing can be said.	2. Response: Classroom behavior
3. Variables of Social System Interview which have concomitant emotional, cognitive, personality factors. "We are our behavior."		3. Classroom behavior

It is the third method of thinking about this study that is adopted in the following discussion. It might be considered a phenomenological approach to the child.

The Teacher and the Social-System Interview

It was crucial to the worth of this study to be able to find some relationship between the questions and answers from the social-system interview to classroom behavior. It is this relationship that will enable a teacher to find meaning in a child's behavior and help her to plan for further experiences. What were the relationships found between the mothers' responses and the child's behavior? To answer this question, each variable will be presented in turn, and the relationships or lack of them will be indicated.

Following a discussion of the various concepts implications for the teacher's visits to the children's homes will be made.

The teacher's role in the classroom will be discussed and implications for curriculum will be indicated.

Concepts

Sex

This variable showed slight relationship to the other variables of the social-system interview except to the variable of 'assertion.' In the second year the girls appear to be considerably more assertive than the boys. This would appear in line with what is known about the maturation rate of boys and girls. Assertion, it will be remembered, refers to the degree to which a child acted to obtain given goals in the nine areas of activity investigated. In the tests and behaviors observed in the classroom, assertion seemed to have both positive and negative effects. Where it appears on the multiple correlations, it appears as a positive factor on the WPPSI and CATB. These correlations are generally low. It appears again as a factor in the Sociometric and have negative relationships with both the Most-Liked and Least-Liked categories. It appears most often in what appears to be a negative relationship.

It will be remembered that assertion was not looked upon with favor by either low or middle-income mothers. Thus a teacher might relate the behavior of some of her girl students to the presence of a kind of assertiveness and might speculate as to the effects of restraint and disapproval on this characteristic. It might also help her to understand the fact,

often observed, that children do not always act at school in the same manner they do at home.

Father-Absence

This variable, like 'sex,' was not investigated as to its relationship to the tests and behaviors in the classroom. In some preliminary analysis it appears to have a positive relationship to task competence and social competence on the CATB. That is, the longer the father was absent from the home the better the children appeared to be rated on these tests. In the Lansing sample father absence was negatively associated with the less desirable aspects of the home. Those variables such as 'caretakers', 'disagreement', 'direction', and 'playmates' are generally negatively associated with 'father-absence', while the characteristic of 'instability' was positively associated with 'father-absence.' This is in part a reflection of family size in the third and fourth years since older siblings and these characteristics are most highly associated in the last two years.

The above might direct the teacher's attention to other parts of the social-system interview. She will be able to determine, as it was possible to do in the Lansing study, whether this father absence means man absences from the child's life. It will probably be possible in the course of the interview to determine whether the absence of the natural father really means that a male model was missing from the child's life. It might be stated that in most instances there

was a male model for the boy in his social environment. It has been noted by social workers that this male is often more considerate of the child than is his own father. In the guidelines of the OEO for teacher selection (Appendix A), it is mentioned that the presence of a male model in the classroom might be necessary. It is possible for the teacher to determine in a given case if this is so. It might be comparatively easy for the teacher to determine the presence or absence of a male model since she does not have to inquire directly about the relationship of the mother to men in the child's social-system. In any event, the teacher may well have some of her ideas about father-absent homes modified by the results of her interview.

Older Siblings

It is probably in the case of older siblings that the merit of asking about each year of the child's life is demonstrated. 'Older siblings' has the least relationship to the other variables in the first year. Even in the instance of 'caretakers' there is a correlation of only .13. 'Older siblings' appears to become a significant variable only in the third and fourth years of the child; and even then there is variation.

In preliminary analysis 'older siblings' had no relationship with the scores on the WPPSI. It will be remembered that the significance levels for the Rs on the WPPSI multiple correlations were most significant in the first year, that is,

the responses of the mothers regarding this period of the child's life were most highly correlated with the WPPSI.

On the CATB scores, however the case is different. The variable of 'older siblings' is highly correlated with the variables of 'playmates' in the last two years as well as with the variables of 'disagreement', 'direction', and 'system-size', all of which correlate negatively with the CATB scores.

From the social-system interview it will be possible for the teacher in a given case to determine just to what extent throughout his pre-school life a child was affected by his older siblings. Among large families in the Lansing sample, it was seen that the children often form alliances; and although there are large numbers of siblings present in the home, the interaction of the child is confined for the most part to one or two of the older siblings. The teacher might notice that these children in the classroom tend to form alliances, to restrict their classroom social-system.

These are only some of the observations that can be made about the variable of 'older siblings.' They do indicate that certain generalizations can be made; but the variations also indicate that the generalizations must be verified in the individual case.

System-Size

'System size' correlates positively with all other variables including 'instability.' Thus a large social system indicates for the child both good and bad features.

Where 'system size' appears in the multiple correlations, it generally has a negative relationship to desirable behavior. This negative relationship is more prevalent in the first two years. The variable of 'system size' cannot be attributed, as has been pointed out, to the presence of older siblings alone. There are indications that members of the child's social system, other than the mother, care for the child to a large extent during the first years of life. Thus he is subjected to many favorable and many unfavorable events in his first years. The child suffers from an excess of both good and bad experiences or stimuli. The fact that the size of the social-system correlates positively with factors which are positively correlated with the desirable behaviors on the tests, inclines one to believe that although the large social system gives the child more of what he needs, it also gives a great deal of what he does not need.

Instability

The most surprising results of the study concerned the variable of 'instability.' As has been pointed out, 'instability' does seem to be partly a result of family moves initiated by the mother. The mothers' responses on the number of individuals entering and leaving the child's social system during the first year is positively related to intelligence. The reason for associating 'instability' with 'system-size', 'disagreement', 'direction', and 'caretakers' is that all these variables were presumed to be factors detrimental to the child's development. What at first sight might appear to

be detrimental is probably a result of the mother's attempts to achieve some degree of harmony in the environment.

Although 'system-size' and 'instability' are positively related, the correlations of 'instability' with the other variables are consistently low except for the correlation with 'disagreement' during the first year. This relationship drops to .24 during the fourth year and is non-existent during the second and third years. 'Instability' indicates that although the child might have had numerous interactions with many people, he did not have these interactions concurrently, but successively. It has been stated before that the characteristic of open-systems theory which might best fit this phenomena is that of "equifinality," since the social-system seems to be in a process of constant adjustment in order to maintain a steady state. The concept of interaction with the environment might well fit here. The exchange of "material" with the environment might well be better applied to people than to things in order to describe the mature system. It does not seem at all detrimental, rather the opposite, for the child to be in contact with many persons successively.

'Unstable' social-systems appear to be so during all the four years. The correlations between the four years are significantly high. It will be remembered that it was one of the few variables in which the middle-income mothers scored higher than the low-income mothers during the second and third years.

Using the raw data in connection with the statistics it is possible to form a picture of what has been somewhat inaccurately called the 'unstable social-system.' Children in such social-systems do have a stable, central source of control and direction: this is the mother in our sample. It will be remembered that many of the mothers in the low-income group were ADC mothers. The mother controls the social-system. She is the decision-maker with regard to the members of the social-system of the child. They come and go as a result of her decisions, and, their interaction with the child is under her control. She does not relinquish her responsibility to others, especially during the first two years of the child's life. Thus the element of 'hierarchical order' is present in the child's social-system.

Caretakers

This variable indicates the number and extent of caretaking duties assumed by others than the mother. Adding a score for the mother would merely be adding a constant which would not alter the correlations.

This variable is positively related to all the other variables, but it shows the highest relationship to 'direction' and 'outside visits.' It will be recalled that 'direction' was most often negatively related to desirable behavior and that 'outside visits' was sometimes negatively and sometimes positively related.

Although the low-income mothers scored consistently higher than the middle-income mothers, the differences were

not significant statistically. Thus it does not seem to be the number of caretakers so much as the other variables with which it is associated that contribute to low scores on desirable behavior.

'Caretakers' in the first year is negatively related to the WPPSI score for 'animal house.' 'Caretakers' appears again in the teachers' ratings of unstructured behavior where it appears significantly correlated with 'onlooker behavior.' It also appears significantly related to factors related to CATB test behavior in the fourth year. Analysis of the elements that go into the full score on items relating to test behavior reveals that these were items 2 and 8. That is, those children with many caretakers were judged not to have a realistic sense of competence and they failed to respond to encouragement and support.

A given teacher than might decide that if a child had been subjected to many caretakers at the same time, she might allow the child his mistakes and refrain from attempting to encourage him. This teacher might find that attempts at encouragement had the opposite effect than that intended. There is a significant correlation between items 2 and 8 on Task Initiation and Curiosity Box, the first tests on the WPPSI. After that the correlations go down. This prompts one to suspect that encouragement of children who have had large numbers of caretakers might lead to less achievement rather than more.

The above may appear as pure speculation; however, it seems the merit of the social-system interview that it encourages the teacher to ask just such questions and to seek such relationships. By observations in the classroom she is in a position to give answers to her own questions.

Disagreement

'Disagreement' is most highly correlated with 'assertion', 'playmates', and 'direction.' It is least associated with 'instability' and 'outside visits.' The high correlation between 'instability' and 'disagreement' has been noted for the first year. It has been noted also that 'disagreement' has been negatively associated with 'father-absence.'

'Assertion' is highly correlated with 'disagreement' among caretakers. While 'disagreement' and 'caretakers' are associated .31 and .30 during the first two years, 'disagreement' and 'assertion' are related .53 and .73. The correlations in the last two years between 'disagreement' and 'assertion' are .51 and .84. This might indicate that the child is manipulating his caretakers.

'Disagreement' is one variable on which the low-income mothers' responses score consistently and significantly different from the middle-income mothers.

What is the relationship of 'disagreement' to the test and observation scores? During the first year it is positively related to the WPPSI scores. It is related positively to the full-scale score beyond the .05 level of

significance. The relationship between 'instability' and 'disagreement' for the first year has been pointed out. During the second year this relationship begins to disappear and 'disagreement' during the third and fourth years is negatively associated with the WPPSI scores.

In the correlations between 'disagreement' and the CATB scores it will be seen that although most often negatively related, it has a positive relationship with Motor Impulse Control'; and this correlation is significant during the second and third years.

'Disagreement' appears in the WPPSI scores as both a positive and negative contributor to the Rs. This is likewise true of the CATB scores.

On the Boger Sociometric, 'disagreement' is positively related to Least-Liked and negatively related to Most-Liked. It is related negatively also to the Brown Self-Concept.

'Disagreement' appears as positively contributing to Unoccupied Behavior on the teachers' ratings of unstructured behavior. 'Disagreement' appears as significantly but negatively related to factors rated detrimental to test behavior.

Direction

'Direction', as one might suspect, is most highly related to 'caretakers.' It is also related to 'assertion', 'playmates', and 'outside visits.' 'Direction', as it was defined, means the numbers of individuals giving directions to or about

the child, even though the director might not have physically cared for the child.

'Direction' is significantly related to the Mazes test in a negative fashion. It is also negatively related to Task Competence, Kindergarten Prognosis and Field Independence on the CATB tests. 'Caretakers', the variable to which 'direction' is the most closely related, bears some relationship to these same tests, but not nearly so high a relationship as 'direction.' Perhaps 'direction' is the variable that more clearly and directly indicates a fragmentation of the child's social system. It appears in the multiple correlations as a consistently negative contributor to R. Where it does appear as a positive contributor, its contribution is small.

'Direction', however, seems to have positive relationships with cooperative play.

'Direction' is the largest contributor to CATB test behavior in a positive manner: that is, the more sources of direction, the more detrimental will be the child's behavior in the testing situation.

Overall, the variable of 'direction' appears to have negative effects on the child's behavior.

Playmates

This variable, which is defined as the number and extent to which others older than the child, excluding the mother, watched over the child and played with him, appears to be very consistently a negative contributor to all test behaviors

except the ratings of factors detrimental to test behavior, where it is a positive contributor. 'Playmates' is a variable on which the low-income mothers consistently score higher than the middle-income mothers.

It will be remembered that 'playmates' during the first two years is not highly correlated with older siblings. It will also be recalled that the raw data indicates that in larger families it is quite common for children to limit their interaction to selected members of the family. It cannot be said that this variable is only a reflection of the size of the immediate family; rather it appears to be a pattern of certain low-income families.

Outside Visits

This variable is related to 'system-size' in the second year, to 'instability' during the second and fourth years, to 'caretakers' throughout the four years, to 'disagreement' not at all, to 'direction' during the four years, to 'assertion' throughout the four years, and to 'playmates' in all except the third year.

As has been mentioned, the low-income mothers appear to allow their children to be taken from the house by others during the first and second year more than do the middle-income mothers, while the two groups are just about equal in the numbers of outside visits during the second two years.

Where 'outside visits' appears in the multiple Rs on the WPPSI and CATB, it appears generally during the first two years as a negative contributor and during the last two years

as a positive contributor. Where it appears on the teacher ratings of unstructured behavior, it generally appears as a positive contributor to desirable behavior. 'Outside visits' appears only once during the ratings of test behavior. There it appears in a negative relationship to the factors detrimental to test behavior on the total score.

The Teacher as Interviewer

So far the discussion has summarized what relationships might be expected by a teacher between the variables pointed out by the social-system interview and the child's behavior in a Head Start setting. A further and more important question not answered by this interview would be the question of what might the teacher do with this information, or what effect might it have on her planning for the children. It is hoped that the knowledge of the wide variations in the social-environment of the children, the favorable and unfavorable factors, might give some hint as to what might be planned for the individual child. This social-interview was designed to be used in action-research, not by researchers, but by teachers; therefore, its real value or lack of value can only be tested in the field by teachers.

Experience with the interview in Lansing indicates that the teacher will receive a great deal of information by which interpretation for a given child can be made. In fact, during the interviews the interviewer was compelled for lack of time often to proceed with the questions when it was apparent that

the mother wished to talk about some incident regarding the child.

In giving the interview it was the purpose of the interviewer not to let information not specifically asked influence the scores. Such important factors as the high verbal ability of the mother or her lack of it, her apparent concern for the child or lack of concern, does not, it is hoped, appear in the data analyzed; that is, it does not appear in an overt form.

The experience in giving the social-system interview leads to the conviction that a teacher can obtain relevant information about a child's early development from the mother's recollections. Experience in giving the interview indicates the willingness and the ability of the mothers to communicate with teachers about the child in an open and suprisingly verbal fashion. It was mentioned in the section on the development of the instrument that mothers' recollections are very concrete. They take pleasure in recounting the history of the child when the questions are such as they can answer.

It was quite common for the mother's to refer to the interviewer as their child's 'teacher.' This is a relationship which they know and accept. The teacher has an advantage in approaching parents in such a relationship.

The teacher will, of course, not be restricted in her use of the interview by consideration of time or that of allowing her subjective impressions influence the data.

It is also felt that the interview might be helpful in teacher training. It can be assumed that for many young teachers the first visits to the homes of low-income families might be somwhat traumatic. It could be all the more painful if the teacher really did not know why she was there or what sort of information she might want from the mother. Were her interests focused on the child and if this were understood by the mother, her visit might be more profitable to the mother as well as to herself and the child.

Curriculum

If it can be assumed that the Head Start experience is to be the supplying of experiences low-income children have missed, the results of the social-system interview will have meaning for curriculum planners and administrators. Certain variables stand out as being detrimental to desirable behavior on the part of the children. These behaviors must be interpreted as taking place in a given environment. The Head Start environment might be planned in such a way that children will, without coercions, experience what was lacking in the social-system in which they passed their first four years.

Thus, 'instability' (an unfortunate word) seems to be a positively contributing experience. This might imply in the Head Start class some flexibility on the part of scheduling. Certainly those social-systems in which constant readjustments were being made was a beneficial experience for the child. It would seem that rigidity on the part of the curriculum planners might not be.

However, 'instability' did not mean that the child was being directed by more than one individual at a time, rather the opposite. In those social-systems which were high on instability, it appears that the mother was the only or almost the only source of direction. This concept when applied to the Head Start class would imply that there would be at any given time only one individual in charge of the child. This is not always the case.

Also, since 'disagreement' among caretakers seems to be detrimental, it might be well to inquire whether teacher, aides, and mothers are really in agreement about what is the proper care of the children. On the social-system interview the question as to disagreement did not ask about violent conflict, but any sort of disagreement. It has been observed that in some classrooms the teacher and the aide are not really in agreement about the best treatment of a child.

It would appear that if a pre-school program were to afford the children beneficial experiences which had been denied many of them during the previous four years and avoid experiences which are detrimental both the competence of the teacher should be encouraged and her position in the classroom strengthened. The teacher must be keenly aware of the great variations in the backgrounds of the children enrolled in Head Start programs. Generalizations about these children are hazardous. There are even indications in the study that factors which are disadvantageous to low-income are likewise disadvantageous to middle-income children. It appears that

many low-income children come to pre-school with a background of experiences more helpful to learning than many middle-income children. The teacher could hardly expect that a uniform curriculum or implementation can fit such diverse needs.

It is also essential that the teacher's position in the perception of the children be central. She must clearly represent a stable source of direction and control in the social-system of the classroom. Her position must be reinforced by all adults who come in contact with her and the children. If 'hierarchical order' is essential to the social environment previous to Head Start experience it seems to be necessary to the child in the pre-school and most important to the child who has lacked the experience of an ordered environment. Briefly, it appears that the ideal pre-school environment would be created by a highly competent teacher administering a very flexible curriculum whose position is reinforced by administrators and auxiliaries.

Another suggestion that might be made as a result of the experience of the social-system interview is to question the value of completely unstructured play periods with all the children involved. This activity probably most resembles activity reflected in the variable of 'playmates.' This does not mean that play is not important; perhaps play is the most important activity of the Head Start classes since it can reasonably be asked whether those children who lived in social-systems which were high on playmates really learned to

play at all. What might be suggested is that small groups of children have their play time together.

Curriculum planners and administrators might see the results of the social-system interview, especially when these results are coupled with the observations of teachers, as being indicators of the types of activities most helpful to the children.

It was stated in the section on Need for the Study that the teacher would be one of the principal planners of educational experiences. It seems that of necessity this will be true. The results of the social-system interview reveal wide variations in the backgrounds of these children. It might not be possible to state categorically just what experiences could be common to all. The finding of consistent differences between the means of low-income and middle-income groups doesn't suffice to explain the variations with the low-income groups.

Administrators, if they wish to supply experiences lacking to the low-income children, must leave a great deal of the planning to the individual teacher, and must supply facilities with which to implement the plans.

There is the danger that the teacher will find herself merely continuing the same experiences that the children have had before entrance into Head Start. In the assumption underlying the theory used in this study, there is reference to 'functional autonomy' and 'intrinsic motivation.' It would be expected from these principles that children from a

given background would attempt to recreate that background in the Head Start setting. They do not merely react to the stimuli present in the environment. The teacher without a proper knowledge of the backgrounds of individual children and the means to implement her knowledge will find herself being manipulated by the children and reacting to them.

This in fact is the meaning of the ability of the social-system interview to predict unstructured situations. The child does what he knows. He will reconstruct what he knows best...which very often is chaos.

Further Research

As has been indicated in the section above on Discussion, the instrument was designed to be used in action-research by teachers. Whatever its merits or lack of merits as an instrument of research, or whatever might be the value of the theory on which it was constructed, it is felt that the true test of its merits will come only when it is used by teachers.

Therefore, it is proposed to instruct teachers in its use and to attempt to determine its utility in the field. This study has been an attempt to show the relevance of some concepts to children's behavior in the classroom. It was not carried out under the most fortunate of circumstances but it is felt that the results justify an attempt at action research.

Summary

In this chapter the results of the study were discussed. First the orientation of the discussion was indicated. Next, the relationship of the results to the teacher, for whom the instrument was designed, were indicated. Finally it was pointed out the use that administrators might have for the study in planning for and with the teacher for the benefit of Head Start children.

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APPENDIX A

Office of Economic Opportunity:

Guidelines for Admittance to Head Start

Guidelines for Home Visits by Staff and Teacher

Guidelines for the Selection of Teachers

Head Start, Child Development Programs, A Manual of Policies and Instructions, Community Action Program, Washington, D. C. Office of Economic Opportunity, September, 1967.

Guidelines for Admittance

C. Index of Poverty-----The Poverty Line

OEO has established a "poverty line' for determining eligibility of children for Head Start. The chart below shows, by household size and levels of gross income those families which are considered to fall below the poverty line.

OEO Poverty Guidelines for FY 1968

Family Size	Non-Farm	Farm
1	$1,600	$1,000
2	2,000	1,400
3	2,500	1,700
4	3,200	2,200
5	3,800	2,600
6	4,200	3,000
7	4,700	3,300
8	5,300	3,700
9	5,800	4,000
10	6,300	4,400
11	6,800	4,700
12	7,300	5,100
13	7,800	5,400

Children from a family that is on welfare are considered eligible even though the family income may exceed the poverty line.

Guidelines for Home Visits by Staff and Teachers

Staff, parents and children will benefit from home visits. Grantees shall not require that parents permit home visits as a condition of the child's participation in Head Start. However, every effort must be made to explain the advantages of visits to parents.

OEO requires that each grantee make home visits a part of its program. Teachers should visit parents of summer children a minimum of once, but in full year programs there must be at least three visits, if the parents have consented to such home visits. In those rare cases where a double shift has been approved for teachers it may be necessary to use other types of personnel to make home visits. Personnel

such as aides and health and social workers may also make home visits with or independent of, the teaching staff. (p. 12)

Further Guidelines for Teachers

Duties - The teacher in a child development class plays a very broad role. In addition to directing classroom activities, the teacher is concerned with the child's health and the ways in which parents can both help the child and themselves. The teacher should also be involved in all the other services which may contribute to the developing of the child's full potential.

Qualifications - Indeally, teachers should have a combination of education and experience, holding a college degree with a major in Early Childhood Education, Nursery or Kindergarten Education. The related areas of Psychology, Home Economics, Sociology, Anthropology, and Social Work would enhance a teacher's qualifications. Actual work experience could be in nursery school teaching, private or cooperative nursery teaching, day care center teaching, pediatric nursing, social case work, and other relevant experiences with pre-school disadvantaged children and their families.

The preceding does not mean however, that only certified or formally trained persons should be considered. Since a male authority figure is missing in many poverty households, a man with limited training may be more desirable than a woman having all the requisite education. Similarly, a non-certified bilingual teacher is obviously preferable to a certified teacher who cannot communicate with the children enrolled in the center.

It is important that teachers selected have these characteristics of personality, training and experience that will assure the children the best available. Unusual circumstances or needs should not be used to condone hiring of lesser qualified persons when better candidates are available.

The recruitment and selection committee should be alert to the personality characteristics which are needed to be successful in working with young children, and consider these minimum qualifications when other education and experience qualifications cannot be met. Warm, out going people who enjoy young children and interact with them as individuals of value can become excellent teachers. A combination of warmth, respect and ability to be firm without being inflexible is important. (p. 16)

APPENDIX B

Social-System Interview

CHILD SOCIAL-SYSTEM INVENTORY

Form A-1

First Year

1. We would like to know who was in ..... family when he/she was born. Can you name those who made up the family at his/her birth. (1.a of Form A-II)

2. Did any of these persons leave the home before ..... was a year old? Can you name them? (1.b of Form A-II)

3. Did others come to live in the home before ..... was a year old? Can you name them? (1.b of Form A-II)

4. Did ..... have a regular baby-sitter during his/her first year? Can you name this person? (2.a of Form A-II)

5. Did relatives or friends visit the home regularly? Did they visit at least once a week? Can you name them? (2.b of Form A-II)

6. Did ..... live with another group of people before he/she was a year old? (with or without mother) Yes? No? If answer is 'yes' use a new Form-II. Ask questions 1 through 5. Rephrase 1: We would like to know who was in the other group of people with whom ..... lived? (This will require an additional set of 'activities' questions.)

Second Year

1. We would like to know whowas in ..... family between his/her first and second birthday? Can you name those who lived with him/her during this time? (If persons are the same as for year one circle '2' of completed Form A-II. If persons are not the same use an additional Form A-II.)

2. Did any of these persons leave the home between his/her first and second birthday? Can you name them? (1.b of Form A-II)

3. Did others come to live in the home between his/her first and second birthday? (1.b of Form A-II)

4. Did ..... have a baby-sitter during his second year? Can you name his/her baby-sitter? (2.a of Form A-II)

5. Did relatives or friends visit the home regularly? Did they visit at least once a week? (2.b of Form A-II)

6. Did ..... live with more than one group of persons during the year between his/her first and second birthday? (with or without mother) Yes? No? If answer is 'yes' use a new Form A-II. Ask questions 1 through 5. Rephrase question 1: We would like to know who was in the other group of people with whom ..... lived? (This will require an additional set of activities questions.)

Third Year

1. We would like to know who was in ..... family between his/her second and third birthday. Can you name those who lived with him/her during this time? (If persons are the same as those of first and second years circle '3' of completed Form A-II. If persons are not the same use an additional Form A-II.)

2. Did any of these persons leave the home between ..... second and third birthdays? Can you name them? (2.a of Form A-II)

3. Did others come to live in the home between his/her third year? Can you name them? (2.a of Form A-II)

4. Did ..... have a baby-sitter during his/her third year? Can you name his/her baby-sitter? (2.b of Form A-II)

5. Did relatives or friends visit the home regularly? Did they visit at least one a week? Can you name them? (2.b of Form A-II)

6. Did ..... live with more than one group of persons during the year between his/her second and third birthdays? (with or without mother) Yes? No? If 'yes' use a new Form A-II. Ask questions 1 through 5. Rephrase question 1: We would like the names of those who made up this group. Can you name them?

Fourth Year

1. Was ..... four years old when he first went to Head Start? If answer is 'yes' ask: We would like to know who was in ..... between his/her third and fourth birthday? If 'no' ask: We would like to know who was in ..... family between his/her third birthday and when he/she started Head Start? (If persons are the same as for the previous year or years circle '4' of completed Form A-II. If persons are not the same as before use additional Form A-II.)

2. Did any of these persons leave the home during this year? Can you name them? (1.b of Form A-II)

3. Did others come to live in the home during his/her fourth year? Can you name them? (1.b of Form A-II)

4. Did ..... have a baby-sitter during his fourth year? Can you name the baby-sitter(s)? (2.a of Form A-II)

5. Did relatives or friends visit the home regularly? Did they visit at least once a week? Can you name them? (2.b of Form A-II)

6. Did ..... live with more than one group of persons during this year? (with or without mother) Yes? No? If answer is 'yes' use a new Form A-II. Use a new set of activities questions. Rephrase questions 1 through 5.

Form B-1

1. Eating:

   a. Did .....(enumerate members of child's social-system)... help feed .....?
   How many helped to feed him/her?
   Did they help feed him/her .....Sometimes? Quite often? Regularly?

   b. Did .....(enumerate members of child's social-system)... disagree about his eating? What he was to eat? how? when?
   How many disagreed?
   Did they disagree.....Sometimes? Quite often? Regularly?

   c. Did .....(enumerate members of child's social-system)... try to get him/her to eat the way he/she should?
   How many tried?
   Did they try.....Sometimes? Quite often? Regularly?

   d. Did ..... try to get.....(enumerate members of child's social-system)..... to feed him/her when he/she wanted; or, what he/she wanted/ or, in the way he/she wanted?
   How many did he/she try this with?

2. Play:

   a. Did .....(members of social-system)..... play with .....? or, watch him/her while he/she played?
   How many played with or took care of him/her while he/she played?

Did they play with or watch him/her....Sometimes? Quite often? Regularly?

b. Did .....(members of social-system)..... disagree about his/her playing? with whome he/she played? how he/she played? where or when?
How many disagreed?
Did they disagree.....Sometimes? Quite often? Regularly?

c. Did .....(members of social-system)..... try to get him/her to play the way he/she should?
How many used to try to do this?
Did they try to get him/her to play the way he/she should.....Sometimes? Quite often? Regularly?

d. Did ..... try to get.....(members of social-system)..... to play with him/her when? where? or, how he/she wanted?
How many did he/she try this with?
Did he/she try this.....Sometimes? Quite often? Regularly?

3. Clothing:

a. Did .....(members of social-system)..... help to dress .....?
How many helped?
Did they help.....Sometimes? Quite often? Regularly?

b. Did .....(members of social-system)..... disagree about dressing .....?
How many disagreed?
Did they disagree.....Sometimes? Quite often? Regularly?

c. Did .....(members of social-system)..... try to get him/her to dress the way he/she should? When he/she should?
How many tried to do this?
Did they try this with him/her.....Sometimes? Quite often? Regularly?

d. Did ..... try to get.....(members of social-system)..... to dress him/her the way he/she wanted?

4. Sleep and naptime:

a. Did .....(members of social-system)..... help to get ..... ready for bed or get him/her to bed for naps?
How many used to help?
Did they help.....Sometimes? Quite often? Regularly?

b. Did they disagree about when, where or how .....
was to go to bed or take naps?
How many disagreed?
Did they disagree.....Sometimes? Quite often?
Regularly?

c. Did .....(members of social-system)..... try to get
him/her to go to sleep at night or take a nap?
How many tried to get him/her to go to sleep or take
a nap?
Did they try to do this.....Sometimes? Quite often?
Regularly?

d. Did ..... try to get his/her way about sleeping
or napping with .....(members of social-system)...?
How many did he/she try this with?
Did he/she try this....Sometimes? Quite often?
Regularly?

5. Discipline:

a. Did .....(members of social-system).... have to
punish.....?
How many had to punish him/her?
Did they have to punish him/her.....Sometimes? Quite
often? Regularly?

b. Did .....(members of social-system).... disagree about
punishment for him/her?
How many disagreed?
Did they disagree.....Sometimes? Quite often?
Regularly?

c. Did .....(members of social-system)..... have to threaten
him/her to get him/her to obey?
How many had to do this?
Did they have to do this.....Sometimes? Quite often?
Regularly?

d. Was ..... able to get out of being punished by
.....(members of social-system).....? Did he/she try?
How many did he/she try this with?
Did he/she try this with them.....Sometimes? Quite
often? Regularly?

6. Diapers (potty training):

a. Did .....(members of social-system)..... help change
..... when he/she was dirty; or help potty-
train him/her?
How many helped with this?
Did they help.....Sometimes? Quite often? Regularly?

b. Did .....(members of social-system)..... disagree about changing ..... or about potty-training him/her? Or, about helping him/her to the bathroom?
How many disagreed about this?
Did they disagree .....Sometimes? Quite Often? Regularly?

c. Did .....(members of social-system)..... try to get him/her to stay clean? ...go to the bathroom?
How many tried to do this?
Did they try to do this.....Sometimes? Quite often? Regularly?

d. Did ..... try to get his/her way about being changed or potty-trained? ...about going to the bathroom? Who did he try this with?
How many did he/she try this with?
Did he/she try this.....Sometimes? Quite often? Regularly?

7. Crying:

a. Did .....(members of social-system)..... help ..... when he/she was crying?
How many paid attention to his/her cries?
Did they do this.....Sometimes? Quite often? Regularly?

b. Did .....(members of social-system)..... feel differently about his/her crying?
How many disagreed?
Did they disagree.....Sometimes? Quite often? Regularly?

c. Did .....(members of social-system)..... try to stop his/her crying?
How many tried to do this?
Did they try this.....Sometimes? Quite often? Regularly?

d. Did ..... try to get his way with .....(members of social-system)..... by crying and begging?
How many did he try this with?
Did he/she try this.....Sometimes? Quite often? Regularly?

8. Outside Visits:

a. Did .....(members of social-system)..... take him for walks, or to the store or to visits to other homes?
How many did this?
Did they do this.....Sometimes? Quite often? Regularly?

b. Did .....(members of social-system)..... disagree about his/her going outside or on trips or to other homes?
How many disagreed about this?
Did they disagree about this.....Sometimes? Quite often? Regularly?

c. Did .....(members of social-system)..... try to get him/her to stay in or go out?
How many tried this?
Did they try this.....Sometimes? Quite often? Regularly?

d. Did ..... try to get his/her way about going out with .....(members of social-system).....?
How many did he/she try this with?
Did he/she try this.....Sometimes? Quite often? Regularly?

9. Illness:

a. Did .....(members of social-system)..... help to take care of ..... when he/she was sick?
How many helped out with him/her?
Did they help out.....Sometimes? Quite often? Regularly?

b. Did .....(members of social-system)..... disagree about what to do when ..... was sick? Or whether he/she was sick?
How many disagreed?
Did they disagree.....Sometimes? Quite often? Regularly?

c. When ..... was sick did .....(members of social-system)..... try to get him/her to do what was good for him/her?
How many tried to do this?
Did they try to do this.....Sometimes? Quite often? Regularly?

d. When ..... was sick did he/she try to get ..... (members of social-system) to do what he/she wanted?
How many did he/she try this with?
How often did he/she try this with them.....Sometimes? Quite often? Regularly?

Child.....No.....Class.....Center.....

Form A-II

Year: 1, 2, 3, 4 Social-system: 1, 2, 3, 4

	Person	Age	Sex	Relationship to Child
1.a.	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
b.	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
2.a.	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
b.	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....
	.....	...	...	.....

Child.....No.....Class.....Center.....

Form B-II

Year: 1, 2, 3, 4 Social-system: 1, 2, 3, 4

1.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number...Sometimes...Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number...Sometimes...Quite often...Regularly...

2.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number... Sometimes..Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number...Sometimes...Quite often...Regularly...

3.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number...Sometimes...Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number...Sometimes...Quite often...Regularly...

4.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number...Sometimes...Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number...Sometimes...Quite often...Regularly...

5.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number...Sometimes...Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number...Sometimes...Quite often...Regularly...

6.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number...Sometimes...Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number...Sometimes...Quite often...Regularly...

7.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number...Sometimes...Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number...Sometimes...Quite often...Regularly...

8.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number...Sometimes...Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number...Sometimes...Quite often...Regularly...

9.a Yes...No...Number...Sometimes...Quite often...Regularly...

b Yes...No...Number...Sometimes...Quite often...Regularly...

c Yes...No...Number...Sometimes...Quite often...Regularly...

d Yes...No...Number... Sometimes..Quite often...Regularly...

APPENDIX C

Wechsler Preschool and Primary Scale of Intelligence

The following are very brief descriptions of test materials and procedures of the WPPSI.

Animal House: matching color to color. Materials are twenty-eight colored cylinders.

Vocabulary: the child is asked the meaning of twenty-two common words.

Picture Completion: the child is asked to name the parts missing in a picture.

Arithmetic: comparisons of length and size. Some sums are asked for.

Mazes: the child is asked to trace a path through a maze. Materials are an accordian-fold sheet printed with mazes and a red pencil.

Geometric Design: the child is asked to reproduce some designs.

Similarities: the child is asked to complete sentences.

Block Design: the child is asked to match printed designs with different colored blocks.

Comprehension: the child is asked to define certain words and describe use of some objects.

Sentences: (this is a supplementary test which was not used in this study). A child is asked to repeat sentences read to him.

Verbal, Performance, and Full Scale scores are derived.

The following table is reproduced from the WPPSI manual, page 8. The number of new test items introduced in the WPPSI and the number retained from the WISC are as follows:

Test	Number of Items		
	New	From WISC	Total
Verbal:			
Information	11	12[a]	23
Vocabulary	8	14	22
Arithmetic	14	6[a]	20
Similarities	9	7[a]	16
Comprehension	9	6[a]	15
Sentences (Supplementary Test)	13	0	13
Performance	20	0	20
Picture Completion	11	12	23
Mazes	13	7	10
Geometric Design	10	0	10
Block Design	4	3	10[b]

[a]Minor changes were made in the wording of several items.

[b]Block Design contains 4 new designs, 3 designs from the WISC, and 3 from the Wechsler Adult Intelligence Scale (WAIS). Two designs, 1 from the WISC and 1 from the WAIS, were rotated 90 degrees from their original positions.

The following intercorrelations were taken from the WPPSI Manual, page 27.

Test	Info	Voca	Arit	Simi	Comp	Sent	Anim	PicC	Maze	Geom	Bloc	Verb	Perf	Full
Vocabulary	.61													
Arithmetic	.56	.43												
Similarities	.55	.55	.50											
Comprehension	.61	.53	.52	.58										
Sentences	.54	.47	.47	.58	.63									
Animal House	.39	.40	.48	.37	.36	.38								
Picture Completion	.57	.52	.41	.40	.44	.35	.35							
Mazes	.23	.15	.27	.22	.18	.25	.32	.32						
Geometric Design	.34	.29	.43	.33	.35	.35	.32	.36	.42					
Block Design	.40	.27	.39	.37	.25	.38	.35	.43	.36	.38				
Verbal Score	.73	.65	.61	.67	.69	.68	.50	.59	.26	.44	.42			
Performance Score	.55	.47	.57	.48	.46	.49	.46	.50	.49	.51	.54	.64		
Full Scale Score	.71	.62	.66	.64	.63	.65	.54	.62	.39	.52	.52			
Mean	10.0	10.1	10.1	10.0	9.9	10.1	10.0	10.0	10.2	9.9	10.1	50.2	50.1	100.3
SD	3.0	3.1	3.0	3.1	3.0	3.1	3.0	3.0	2.9	2.9	2.9	12.1	10.2	20.2
Correlations of tests with Verbal, Performance, and Full Scale Scores before correction for contamination.														
Verbal Score	.83	.78	.75	.80	---	---	---	---	---	---	---	---	---	
Performance Score							.67	.71	.69	.71	.72	---	---	
Full Scale Score	.78	.71	.74	.72	.72	---	.64	.71	.51	.62	.92	.89	---	

The following reliability coefficients are from the WPPSI manual, page 22.

Reliability Coefficients and Standard Erros of Measurement of the Tests and IQs by Age Group
N = 200 for Each Age Group

Test	4		4 1/2		5	
	r	SE	r	SE	r	SE
Information	.84	1.25	.81	1.31	.77	1.42
Vocabulary	.82	1.28	.84	1.22	.78	1.38
Arithmetic	.81	1.35	.78	1.38	.84	1.14
Similarities	.85	1.19	.82	1.30	.83	1.21
Comprehension	.78	1.43	.83	1.23	.78	1.32
Sentences	.88	1.04	.87	1.12	.83	1.29
Animal House	.62	1.87	.71	1.60	.79	1.37
Picture Completion	.85	1.14	.84	1.19	.81	1.23
Mazes	.85	1.17	.82	1.24	.88	1.03
Geometric Design	.80	1.39	.82	1.24	.82	1.31
Block Design	.76	1.53	.82	1.35	.83	1.23
Verbal IQ	.94	3.68	.94	3.63	.93	3.61
Performance IQ	.91	4.35	.92	4.02	.94	3.79
Full Scale IQ	.96	3.12	.96	2.99	.96	2.88

The following Coefficients of Correlation were taken from the WPPSI manual, page 34.

Coefficients of Correlation of Scaled Scores and IQ's on the WPPSI with IQ's on Three Other Intelligence Tests, for 98 Children Between 5 and 6 Years of Age

Test	WPPSI Mean	WPPSI SD	Standfor Binet (Form L-M) r	Peabody Picture (Form A) r	Pictorial Intelligence r
Information	7.9	2.6	.63	.53	.46
Vocabulary	8.2	2.3	.53	.40	.22
Arithmetic	8.4	2.8	.60	.46	.56
Similarities	8.4	3.0	.56	.37	.31
Comprehension	8.0	2.3	.58	.45	.45
Sentences	7.9	2.8	.39	.35	.29
Animal House	8.3	3.0	.37	.23	.45
Picture Completion	9.3	2.5	.32	.43	.34
Mazes	9.3	2.8	.41	.30	.41
Geometric Design	9.6	2.8	.52	.32	.52
Block Design	8.3	3.0	.41	.35	.44
Verbal IQ	88.5	12.5	.76	.57	.53
Performance IQ	92.7	14.0	.56	.44	.60
Full Scale IQ	89.6	12.8	.75	.58	.64
Mean			91.3	88.1	89.4
SD			13.4	15.4	14.2

APPENDIX D

Cincinnati Autonomy Test Battery

Brief Description of Test Battery

Task Initiation:

> Before the child enters the room, small, smoothly sanded, softly colored wooden figures are arranged on the testing table as shown in Fig. 1. (omitted in the manual) When the child is brought in, he is seated in front of the miniature figures. The tester takes her seat on the other side of the table, starts her stop-watch, and busies herself with paper-work--deriving age of child from birth date, writing name and date on the test protocol, etc. Nothing is said to the child about the figures before him. The tester waits one minute for the child to inspect the figures, pick them up, or begin talking fantasy with the figures. If no initiative occurs within this minute, the tester puts the toys away and begins the next test. If the child does begin to play, the tester observes for an over-all two-minute period in preparation for rating task initiation behavior. (p. 18)

Curiosity Box:

This is a box painted in bright colors and to which is affixed a number of inviting objects.

> The tester presents the box in an inviting way, and takes an observation position to the left and behind the child. The observation period is five minutes, unless the child does not explore or manipulate the box within the first three minutes. The termination procedure is as follows: if the child does not touch the box during the first two minutes, the tester manipulates the chain lock and bolt on the front side of the box. If the child does not touch the box for one minute after the prompt, the Curiosity Box is removed. (p. 19)

Dog and Bone:

> The Dog and Bone test invites the child to play a game of "getting the dog to his house" by various routes. The child is shown two paths the dog might take to get to his bone; then he is asked to find another way for the dog to get to his bone. If the child repeats a pathway used in the two demonstrations, or if he repeats one of his own previous pathways, he is given no credit. Only novel responses are scored. The autonomous child should be able to find a number of ways to do this simple task. He should be responsive to alternatives and be able to generate new ones, rather than perseverate in fixed ways. (p. 22)

Reflectivity EC-MFF:

> We have re-designed the test (Kagan's test of 1964) for use with lower class children, ages three and four, and refer to the test as the Early Childhood Matching Familiar Figures test (EC-MFF) to distinguish it from Kagan's test which was designed for later childhood. In addition, the EC-MFF materials were designed to assess social-motivational components in reflectivity. Half the figures to be matched are social in character (matching a test photograph or line drawing of a face with its counterpart embedded in an array of other faces); the other half of the figures are non-social or geometric designs (matching a test geometric figure like a complex star or matching a non-social object like a shovel or cup).
>
> Since the matching of stimuli is difficult for some three to six year old children, we have developed some very simple training pictures in order to help the child understand what is expected of him without relying heavily on verbal instructions. (p. 26)

Field Independence (EC-EFT):

> The figure to be located in the embedded context of EC-EFT stimuli is in the shape of a cone, as shown in Fig. 8 (not shown in the manual). Three training pictures are used to assess comprehension and readiness to perform the task. The first training picture is identical with the cut-out cone figure; the second training picture is only slightly embedded by line drawing of dripping ice cream and a cross-hatching on the cone; the third training picture has still more lines on it and is placed in the lower left corner of the page. Fourteen test pictures, embedding the "cone", for example, as sun setting between mountains, a lamp base, a cowboy's face and scarf and a complex geometric design, are used to assess field independence. (p. 29)

Motor Impulse Control:

> At the start of the Draw-a-Line-Slowly test the tester gives the child a crayon. The tester takes a crayon of a different color and places an 8 and 1/2 inch by 11 inch paper on the table before the child. The testes says, "I;m going to draw a line real fast." As the tester says "real fast," she draws a line very quickly (toward the child, from top to bottom of the page). The tester then goes on to say, "Now you draw a line real fast right here," (showing the child where to begin the line, pointing to the top of the page).

> The purpose of the fast line is to give meaning to the words "fast" and "slow", by getting the child to make a response, equivalent to the meaning of the words in their context. (p. 33)

The procedures and instructions for drawing a slow line are similar.

Incidental and Intentional Learning:

Postman's (1964) review of theory and data on short term memory and incidental learning, makes several points that help in understanding the operations we have invented for studying these features of learning in very young children. He makes the point that both intentional and incidental learning "are concerned with basic capacities and dispositions which the learner brings to the experimental situation and which determine the initial reception and immediate storage of information" (p. 145). It is these dispositions brought to the situation in both kinds of learning that interest us from the point of view of autonomy. Many types of problem solving demand a rather broad attention span, a receptivity to many incidental features of the components of the problem. The stimulus array in any given problem situation may conceal the critical, but incidental, elements necessary to the problem. Thus it becomes important that the child develop receptivity to incidental cues. The autonomous child should be able to function both as an "intentional learner" and as an "incidental learner."

Postman contends that these two kinds of learning are not qualitatively different but that they simply define the extremes of a dimension; incidental learning is just like other learning except that the instructions or the subjects' set do not prepare them for the test of performance. Postman cites McGeoch to support the view that the two kinds of learning do not constitute a dichotomy. McGeoch's ideas are worth noting: "...much of the learning which goes on with no overt instructions is, nonetheless, influenced by implicit instructions and sets...certainly it cannot be said with any conclusiveness that there are experiments in which implicit sets have not operated; but, more than this, probability is on the side of the hypothesis that all of the results (in incidental learning) have been determined by set" (1924, p. 304). This may be interpreted to mean that set is involved in all learning. There is also the further implication that set itself is learned. It is this latter implication that concerns us in relation to autonomy. If sets can be acquired, expression of autonomous behavior may be amenable to educational

intervention. Part of educations' effects manifest themselves in the kinds of set individuals take toward the world, and more specifically, toward problem-solving situations.

In the Find-the-Color-Green test, the tester places the closed notebook with the stimulus pictures in it on the testing table, along with a small piece of paper. The tester says, "I'm going to teach you something about this color green." She makes a mark with a green crayon on the small piece of paper. The green matches the green which appears on the stimulus materials. The tester, while opening the notebook, then says, "We're going to look at some things in this book." The child is shown the first page. Tester says, "Find the color green on this page." The child points to the part of the picture which is colored green, as shown in Fig. 9 (not in manual). The tester helps the child do this if there appears to be confusion about what is expected.

The tester then proceeds in the same way, saying, "Find the color green on this page," as each page is turned. When all pages have been turned, the free recall training portion of the test begins. This is important because a free recall response is fairly demanding on the three and four year old children in terms of the cognitive difficulty implicit in producing labels of pictures not immediately present. (pp. 35-37)

A brief training period is given. After which:

At this point, intentional recall is tested. Again the recall is preceded by training. Using the labels the child used on the three training pictures, the tester says to the child, "One of the pictures you saw with green on it in this book was this (table). You saw this (table). You saw this (house) and this (apple)." The tester then closes the book and asks, "What else did you see with green on it in this book?" No prompts are given in this portion of the test. After each response, the tester says, "What else did you see?" The same termination procedures used in incidental learning are used in this recall test. The same recording procedures are used, this time in the right column of the record form, designated "post-familiarization recall." (p. 38)

The incidental recall score is the total number of correct responses corresponding to the ten test pictures. Similarly, the intentional learning score is the total number of correct responses made during the post-familiarization recall procedure. (p. 39)

Persistence and Resistence to Distraction: (The Replacement Puzzle Test)

> The Replacement Puzzle, shown in Fig. 10 (not given in manual) is an adaptation of a test developed by Keister (1943). Our emphasis is on how involved the child becomes in attaining a solution during a period when no distractions are present other than those inherent in the situation--furniture, tester, testing equipment. The puzzle can be solved in only one way. The pieces are constructed so that a solution is very improbably in a two-minute period. During these two minutes the child is observed for indications of task-oriented behavior carried out in an independent and persistent fashion. At the two minute mark, the tester introduces four toy blocks with the words, "you may play with these, or you may finish putting the pieces back in the flat." For the next minute the child's persistence is observed, this time with the distractor blocks present.
>
> Our concern here, as elsewhere in the test battery, are in terms of the structures and dispositions within the child. Some children respond to, and some children ignore the distracting materials. Thus the stimulus cannot account for either attention or distractibility in the present setting, since stimulus factors are held constant for all the children. In a sense we are concerned with what one might call "Persistibility-and-Distractibility," which are complementary tendencies and abilities that have developed within the child. (pp. 40-41.

Task Competence, Social Competence, and Kindergarten Prognosis: Post-test Ratings

> Task competence and social competence scales theoretically correspond to the distinction between task roles and social roles in problem-solving groups (Bales, 1958). The assumptions is of course that children may differ in their competence in handling the demands of these two kinds of roles early in their development. Bales, in his studies of group problem solving, has found that persons who become "task specialist" are not likely to become "social-emotional specialists."
>
> Doing well on tasks, and doing well in social interaction can thus be viewed as two unrelated skills. The degree of relationship between social and task competence, however, is a matter of theoretical contention. As White (1960) has pointed out, competence "...applies to interactions with people as well as to dealings with inanimate environment." (p. 104) White says that

"Sense of social competence may well be the more important of the two..." (p. 104).

The interrelation of social skills and task skills is reinforced in the epigenetic theory of Erikson (1950). The resolution of the problem of basic trust vs. basic mistrust preceded the child's management of more task-related achievements implied in his next three stages involving autonomy, initiative, and industry. Developmentally there is a mutual facilitation; autonomy, initiative, and industry have their basis in the solution of social problems of the child such as separation, anxiety, loss, and "confidence." Erickson, added a footnote to his Chapter 7, "Eight Ages of Man," in his revised and enlarged edition of Childhood and Society, in which he pointed out that "...some writers are so intent on making an achievement scale out of these stages that they blithely omit all the 'negative' senses (basic mistrust, etc.) which are and remain the dynamic counterpart of the 'positive' ones throughout life." (pp. 272-3). If one examines the content of the 'negative' senses of each stage, it is readily apparent that these are heavily weighted with problems of social competence; shame and doubt, guilt, and inferiority. The social strengths of the "ages of man" are progressing toward a stage of "integrity," not isolated skills and strengths. If the child is bogged down in his social emotional coping, this will inevitably be reflected in his task competence. Thus we feel it necessary to assess the relationship between these two aspects of autonomous functioning, task competence and social competence.

The rating scales, shown in Fig. 15(not in manual) were adapted for operationalizing these theoretical concernts. They originally appeared in the Stanford-Binet Record Booklet, Form L-M (1960). Thus the assessment of task and social competence can be made in the context of the Binet and CATB settings for comparison purposes.

In additon, we have included a "Kindergarten Prognosis" scale, intended as an estimate of the child's ability to cope with a conventional kindergarten situation. This scale should be though of in relation to a kindergarten where classes are large, programs are structured, and children are encouraged to conform. This rating is designed to get at the tester's opinion of the child's chances for success in a typical kindergarten on an all-around basis, rather than on the basis of separate skills. Any elaboration of the specific factors underlying this prediction can be recorded in the "comment" section at the bottom of the page. (pp. 44-46)

Banta recommends that the ratings be done immediately after the child has been tested.

Curiosity, Verbalization and Fantasy-Relation Verbalization:

In the course of testing children with the Curiosity Box, we have been impressed with the fact that many children augmented their sensori-motor exploratory experiences with talk of their own. We have very little theory to guide us in this area of spontaneous verbalization, but it appeared that many children showed good signs of self-directed and self-sustaining exploration, particularly when they supplemented thier visual, tactual, and manipulatory behavior with spontaneous curiosity verbalization. Sometimes they supplemented their explorations with fantasy-related comments.

These observations are given some support in Werner's (1948) emphasis on development in terms of hierarchic integration; accordingly, the more the verbal domain is coordinated in a supplementary way with sensori-motor behavior, the greater the opportunity for organized self-regulation. Piaget (1936, 1937) similarly, describes the sensori-motor period in terms of circular reactions which progressively facilitate the coordination of reflexes, then facilitate the coordination of means-ends sequences in exploratory behavior.

Development leads to coordination of verbal behavior with sensori-motor exploration. Since sensori-motor activity obviously precedes verbal skills and conceptual development, it is tempting to say that the correlation between exploratory activity and verbalizations is due primarily to sensori-motor factors. However, it might well be that, once curiosity verbalization emerges in development, it becomes directive, rather than simply supplementary to ongoing sensori-motor exploration. This possibility awaits systematic empirical investigations.

Because of these informal observations and because of these theoretical considerations, we have derived scores based on the children's behavior while exploring the Curiosity Box. Curiosity Verbalization and Fantasy-Related scores are taken from the observations record shown in Fig. 4 (not shown in manual). The last four columns are divided into "box-related" and "other," and each of these is further subdivided into "questions and/or comments" and "fantasy." Observation of many testing sessions has suggested that Curiosity Verbalization is best indicated by the occurrence of behavior classified as box-related questions and/or comments, in the first of the four observations columns. Here, the children talk about the material they are exploring: "How does

this work?" "Who made this?" "The light doesn't go off," or "There's something in there," are questions or comments frequently observed in this category of Curiosity Verbalization.

In Fantasy-Related Verbalization, children sing or hum, talk about Bat-Man "flying in there," or they may talk about themselves: "Have you ever been to the Bahamas?" "What's your name?" or "What are you writing there?" Thus our category of "Fantasy" is much broader than most definitions which typically include some reference to symbols, images, wish fulfillment, and the like. Our decision is to go ahead on a trial basis, examining the interrelations of this with other variables, pending fuller evaluation of this variable as more data becomes available. (pp. 47-48)

Banta prefaces his remarks on results and discussion with the words:

These findings are reported as products of "research in progress." They should be viewed as tentative. It is hoped that other investigators will soon take up the challenge to correct our current appraisals of reliability, validity, and the meaningfulness of the present approach to autonomous functioning in young children. (p. 49)

Product-Moment Correlations Among Fourteen CATB Variables

	1 Task Init	2 Cur Box	3 Dog Bone	4 EC-EFT	5 Imp Cont	6 Int Learn	7 Inc Learn	8 Persist	9 Resist Distract	10 Task Comp	11 Soc Comp	12 Kind Prog	13 Cur Verb
1. Curiosity: Task Initiation	--												
2. Curiosity: Curiosity Box	39**	--											
3. Innovative Behavior: Dog and Bone Test	06	11	--										
4. Field Independence: EC-EFT	13	04	21	--									
5. Impulse Control: Draw-a-Line-Slowly	-16	-01	23*	07	--								
6. Intentional Learning	-22*	16	33**	07	31**	--							
7. Incidental Learning	-03	-01	11	09	12	45**	--						
8. Persistence	-12	-03	06	28*	28*	15	-18	--					
9. Resistence to Distraction	-11	-20	-18	25*	27*	-04	-09	07	--				
10. Task Competence Ratings	24*	-05	10	52**	25*	27*	19	45**	51**	--			
11. Social Competence Ratings	02	37**	26*	27*	17	22*	25*	-06	00	44**	--		
12. Kindergarten Prognosis Rating	-13	22*	18	31**	31**	27*	33**	26*	23*	71**	70**	--	
13. Curiosity Verbalization	52**	48**	-01	14	05	-06	06	-20	-14	-01	53**	23*	--
14. Fantasy Related Verbalization	34**	31**	10	10	-03	-07	-03	-14	-16	-06	38**	08	55**

Note: Decimal points have been omitted. N's are based on all available data. Eighty-four children were included in the study, but due to the fact that not all test scores were available for every child, N's varied from 79 to 84.

*Significant beyond the .05 level. **Significant beyond the .01 level.

Summary of CATB Reliability Coefficients

Test	Test-retest reliability coefficients		Internal consistency reliability coefficients		Inter-rater reliability coefficients	
	N	r	N	r	N	r
Innovative Behavior						
Dog and Bone Test	33	.73**[a]	33	.76**[c]	33	.996**
	32	.82**[b]	48	.94**[c]		
Curiosity						
Curiosity Box	Not available		83	.91**[d]	--	--
Task Initiation	33	.76**[a]	--[f]	--[f]	33	.96**
Puzzle Boards	Not available		27	.77**[d]	--	--
Impulse Control						
Draw-a-line-slowly	33	.43*[b]	32	.72,.66,.69**[e]	30	.90**
	33	.41*[a]	74	.55,.47,.80**[e]		
Field Independence						
EC-EFT	Not available		34	.48**[c]	--	--
	Not available		84	.59**[c]	--	--
Intentional Learning						
Picture Recall	32	.60**[b]	118	.40**[c]	--	--
Incidental Learning						
Find-the-color-green	32	.27[b]	118	.16[c]	--	--
Reflectivity						
EC-MFF	Not available		62	.37**[c]	--	--
Persistence						
Replacement Puzzle	Not available		84	.33**[d]	--	--

Test	Test-retest reliability coefficients		Internal consistency reliability coefficients		Inter-rater reliability coefficients	
	N	r	N	r	N	r
Resistence to Distraction Puzzle plus Distractor Blocks (narrative ratings)	33	-.07[b]	--	--	49	.98**
Task Competence Post-test Ratings	34	.40*[b]	63	.82**[c]	--	--
Social Competence Post-test Ratings	34	.68**[b]	63	.66**[c]	--	--
Kindergarten Prognosis Post-test Ratings	34	.47**[b]	--	--	--	--

[a]One-month test-retest interval.

[b]Two-month test-retest interval.

[c]Odd items vs. even items.

[d]Odd-numbered time intervals vs. even-numbered time intervals.

[e]Correlations among the three lines drawn. Correlations presented in following order: line 1 vs. line 2, line 1 vs. line 3, and line 2 vs. line 3.

[f]"--" means not applicable; for example, task initiation scoring is based on ratings of narrative recordings written out by the tester--since there is only one rating, no internal consistency r's are possible.

*Significant beyond the .05 level. **Significant beyond the .01 level.

CATB Means, Standard Deviations, and Ranges*

Variable	$\bar{X}$	σ	N	Possible Range	Obtained Range
1. Task Initiation	1.58	.98	83	1-4	1-4
2. Curiosity Box	13.83	10.22	84	0-50	0-32
3. Innovative Behavior	4.80	3.80	84	0-30	0-22
4. EC-EFT	8.36	2.88	84	0-14	1-13
5. Impulse Control	.69	.39	84	>0	.10-2.51
6. Intentional Learn.	2.81	1.75	84	0-10	0-7
7. Inc. Learning	1.48	1.30	84	0-10	0-5
8. Persistence	20.70	4.02	84	0-24	10-24
9. Resistence to Distraction	10.73	5.28	80	0-18	3-18
10. Task Competence	12.17	2.57	84	4-20	4-17
11. Social Competence	11.96	2.46	84	4-20	4-18
12. Kindergarten Prog.	3.00	.66	84	1-5	1-4
13. Curiosity Verb.	1.88	3.05	84	0-10	0-10
14. Fantasy-Related Verb.	.51	1.16	84	0-30	0-6
15. Reflectivity	4.20	1.89	71	0-8	1-8

*Data on variables one through fourteen are computed from the 1967 study in an all-Negro community. Data on variable fifteen were based on the 1966 study in a Negro ghetto and Negro public housing area.

Table 4. Pearson Product-Moment Correlations between Fourteen CATB Variables and Stanford-Binet Scores (Form L-M)[a]

Test	r
Social Competence Ratings	.37**
Field Independence:EC-EFT	.33**
Kindergarten Prognosis Rating	.31**
Innovative Behavior: Dog and Bone Test	.31**
Impulse Control: Draw-a-Line-Slowly	.24*
Intentional Learning	.23*
Curiosity Verbalization	.23*
Task-Related Verbalization	.22
Curiosity: Curiosity Box	.20
Incidental Learning	.19
Task Competence Ratings	.17
Curiosity: Task Initiation	.04
Persistence	.02
Resistence to Distraction	-.10

*Significant beyond the .05 level.

**Significant beyond the .01 level.

[a]All N's = 76 with the exception of Task Initiation (N = 75) and Resistence to Distraction (N = 72); the former was due to an error in recording, the latter was due to the fact that four children solved the puzzle and therefore could not be presented with the distractor blocks.

APPENDIX E

The Play-Situation Picture-Board Sociometric

PLAY SITUATION -- PICTURE BOARD

SOCIOMETRIC

Record Form

Child's Name_____ Child's Code No._____

Head Start Center_____ Date_____

Play Situation		Voluntary Response or "Urged" Response (Check one)	
1st card selected____	1st response____	_____	_____
2nd card selected____	1st response____	_____	_____
3rd card selected____	1st response____	_____	_____
4th card selected____	1st response____	_____	_____
5th card selected____	1st response____	_____	_____

S's responses to "Who would you like to play with most of all?"

1st response____	_____	_____
2nd response____	_____	_____
3rd response____	_____	_____

S's responses to "Who would you not want to play with?"

1st response____	_____	_____
2nd response____	_____	_____
3rd response____	_____	_____

Summary of Reliability and Validity:

The Play-Situation Picture-Board Sociometric

Reliability

Analysis - Test-retest reliabilities over three weeks were calculated in four preschool classes last fall and in two classes this spring. The test used was the Kolmogorov-Smirnov one-sample test, which compares the children's similarity of choices over the three weeks with the results that would be obtained if the choices were made randomly. The results are summarized in the following tables:

	Test A: Picture Situation	Test B: Best Liked	Test C: Least Liked
Lansing Genesee St. Fall (N=14)	$D = .418$, $P \leq .01$	$D = .404$, $P \leq .05$	$D = .056$, N.S.
Lansing Allen St. Fall (N=15)	$D = .355$, $P \leq .05$	$D = .363$, $P \leq .05$	$D = .496$, $P \leq .01$
Lab Preschool Holt Fall (N=17)	$D = .250$, $P \leq .20$	$D = .206$, $P \leq .20$	$D = .088$, N.S.
Lab Preschool McCarty Fall (N=11)	$D = .307$, $P \leq .20$	$D = .397$, $P \leq .05$	$D = .033$, N.S.
Lansing Genesee St. Spring (N=15)	$D = .186$, N.S.	D not calc. N.S.	$D = .362$, $P \leq .05$
Lansing Allen St. Spring (N=16)	D not calc. N.S.	D not calc. N.S.	D not calc. N.S.

Results - The clearest trend to be observed here is that the beginning Head Start children tend to be consistent in their choices of friends over a three-week period, but middle-class children report different friendships on the two occasions. At the end of the year, the Head Strat children's responses are very much like the middle class children's responses in that they report different friends from one testing occasion to the next. Conclusion to be drawn from this: Story and Weber suggest that if the Head Start program is seeking to bring middle-class values to lower-class children, perhaps the Head Start children are being taught, and are learning, to like many children and to play with all. The children holding this value would have a larger group of playmate-friends and might select some on one testing and others on the next.

Suggestions - Perhaps the three-week period is contributing to the problem. Retest should be done over a two-day span to eliminate the effects of changing friendships over three weeks. Also: how to account for the influence of the "you should like all the children and play with them all" syndrome?

Would suggest that reliability checks over two or three days be done this summer in Head Start classes.

Validity

Analysis - Concurrent validity was examined using as the standard of comparison the Head Start teacher's ranking of the children's popularity--the extent to which they are liked--with the other children. Rankings by teachers were correlated with rankings on number of times chosen by the other children. The results are shown in the following table:

	A Picture Situation	B Best Liked	C Least Liked
Lansing: Allen Street	.41	.14	-.43
Lansing: Genessee St.	.37	.48	-.78
Pigeon:	.68	.73	-.43
Detroit:	.32	.11	.00

Appendix to Sociometric Reliability Report

1. On first chosen peer, the children are showing fairly good stability: (These are binomial probabilities of getting this result by chance alone)

	Test A	Test B	Test C
Allen	.07	NS	NS
Genessee	.07	.07	.07

2. On choices of the five pictures, it is clear that the children are choosing purposefully -- are not choosing at random. The Kolmolgorov-Smirnov test was run for the children's similarity of picture choices over a 3-week period. For the two Head Start classes on which the data was analyzed, the results were significant at $P \leq .01$, indicating that the choices of pictures were not due to chance. The children apparently do attend to the task and are making meaningful pictures selections. The mean numbers of "matches" (i.e., the number of same pictures chosen on 2 separate occasions) were 2.25 and 2.20.

3. On first chosen picture, the children are showing some consistency in choice of favorite activity, although here the results for the two schools are very different. $P \leq .002$ and .165 (binomial) in the two Head Start classes.

APPENDIX F

Brown IDS Self Concept Referene Test

Scoring Sheet for Brown--IDS Self Concept Referene Test

Example of question format: 1. Now tell me, is Johnny Gallagher happy or is he sad?

2. Does Johnny Gallagher's mother think Johnny Gallagher is happy or sad?

Item	Self Score*	Mother Score	Teacher Score	Peer Score
1. Happy-sad	1, 0	1, 0	1, 0	1, 0
2. Clean-dirty	1, 0	1, 0	1, 0	1, 0
3. Good looking-ugly	1, 0	1, 0	1, 0	1, 0
4. Likes to play with other kids-doesn't like to play with other kids	1, 0	1, 0	1, 0	1, 0
5. Likes to have own things-likes to have other kids things	1, 0	1, 0	1, 0	1, 0
6. Good-bad	1, 0	1, 0	1, 0	1, 0
7. Likes to talk a lot-doesn't like to talk a lot	1, 0	1, 0	1, 0	1, 0
8. Smart-stupid	1, 0	1, 0	1, 0	1, 0
9. Scared of a lot of things-not scared of a lot of things	1, 0	1, 0	1, 0	1, 0
10. Scared of a lot of people-not scared of a lot of people	1, 0	1, 0	1, 0	1, 0
11. Likes the way clothes look-doesn't like the way clothes look	1, 0	1, 0	1, 0	1, 0
12. Strong-weak	1, 0	1, 0	1, 0	1, 0
13. Healthy-sick	1, 0	1, 0	1, 0	1, 0
14. Likes the way (my) face looks-doesn't like the way (my) face looks	1, 0	1, 0	1, 0	1, 0

*Note: Score values parallel order in which adjectives are presented.

The following technique of assessing self-concept among young children was developed by Bert H. Brown of the Institute for Developmental Studies, New York Medical College, Department of Psychiatry. As far as can be ascertained the only information available on this test is contained in the manual. Studies of reliability have been made at the E and R Center, Michigan State University. The reports of these studies are contained in the Appendix.

Materials

Materials are a polaroid picture of the child taken recently against a neutral background. No instructions are given to the child as to how he is to stand or as to facial expression. With the newly-taken picture the questions on the scoring-sheet (following page) are asked.

Technique

The technique is described by Brown:

> Let us assume that in the case of the young child a great number of significant others (referents) can be identified. However, for operational purposes we shall assume that the following three referents are normally highly salient, and strongly influence the ways in which children perceive themselves:
>
> 1. the child's mother,
> 2. the child's teacher,
> 3. the child's peers (classmates)
>
> The questions which we want to ask of children are:
>
> 1. How do you suppose your mother perceives you?
> 2. How do you suppose your classmates perceive you?
> 3. How do you suppose your teacher perceives you?

Reliability (from the manual)

		N
Negro	.71	38
White	.76	36

Reliability: Brown IDS Self Concept

Subjects

The subjects were children from two Lansing Head Start classes. Total N = 29

Ages:	Range	SD	Mean
	42 mos.-60 mos.	4.98 mos.	51.10 mos.

Interval between tests: 1 month

Racial Composition: 12 Negro
11 Caucasian
6 Mexican American

Statistic: Pearson r

Reliability Coefficients between test-retest:

	Self Scores	Mother Scores	Teacher Scores	Peer Scores
r =	.954	.981	.515	.995
	P .005*	P .005*	P .01*	P .005*

* Levels of significance are for two-tailed test.

APPENDIX G

PARTEN NEWELL

Development of Social Behavior

PARTEN - NEWELL

Unoccupied Behavior:	The child apparently is not playing at all, at least not in the usual sense, but occupies himself with watching anything which happens to be of momentary interest. When there is nothing exciting taking place, he plays with his own body, gets on and off chairs, just stands around, follows the teacher or sits in one spot glancing around the room.
Solitary Play:	The child plays alone and independently with toys that are different from those used by the children within speaking distance and makes no effort to get close to or speak to the other children. His interest is centered upon his own activity, and he pursues it without reference to what others are doing.
Onlooker Behavior:	The child spends most of his time watching the others play. He often talks to the playing children, asks questions or gives suggestions, but does not enter into the play himself. He stands or sits within speaking distance of the group so he can see and hear all that is taking place. Thus, he differs from the unoccupied child, who notices anything that happens to be exciting and is not especially interested in groups of children.
Parallel Play:	The child plays independently, but the activity he chooses naturally brings him among other children. He plays with toys which are like those which the children around him are using, but he plays with toys as he sees fit, and does not try to influence the activity of the children near him. Thus, he plays beside, rather than with other children.
Associative Play:	The child plays with other children. They are borrowing and lending of play materials, following one another with trains and wagons; mild attempts to control which children may or may not play in the group. All engage in similar, if not identical activity.

There is no division of labor and no organization of activity. Each child acts as he wishes, does not subordinate his interest to the group.

Cooperative Play: The child plays within a group that is organized for the purpose of making some material product; of striving to attain some competitive goal; of dramatizing situations of adult or group life, or of playing formal games. There is a marked sense of belonging or not belonging to the group. The control of group situation is in the hands of one or two members, who direct the activity of others. The goal as well as the method of attaining it necessitates a division of labor, the taking of different roles by various group members, and the organization of activity so that the efforts of one child are supplemented by those of another.

APPENDIX H

Inventory of Factors Affecting Test Performance

INVENTORY OF FACTORS AFFECTING TEST PERFORMANCE*

This inventory focusses on the need to identify factors which adversely affect the test performance. If a factor does not adversely affect performance, place a check in the box below the factor. If performance is adversely affected, note the degree to which the factor is detrimental to test performance and circle the style in which this factor expresses itself.

Factor: X _____ Style

1	2	3	4	5	
mildly detrimental		moderately detrimental		seriously detrimental	A B C

Factor	Degree	Style
Response to test		
1. Gives the test the attention it requires / /	1 2 3 4 5	A. easily distracted B. overly absorbed in one or more tasks so that transitions are difficult C. vaguely inattentive and uninvolved
2. Realistic sense of competence / /	1 2 3 4 5	A. distrusts or anxious about own abilities B. overly confident C. lacking in concern with competence
3. Adequate response time / /	1 2 3 4 5	A. impuslive--responds without adequate delay B. slow to respond--much urging needed
4. Is matter of fact about tasks or enjoys them / /	1 2 3 4 5	A. dislikes tasks, antagonistic B. fearful, guarded C. apathetic--lacking pleasure or displeasure
5. Adequately persistent in the face of difficulty / /	1 2 3 4 5	A. gives up easily B. can't give up C. behavior unmodified in the face of difficulty

*Adapted from Stanford-Binet and UCLA scales

Factor	Degree	Style
Response to test		
6. Reacts to failure realistically / /	1 2 3 4 5	A. withdraws B. becomes hostile C. denies, seems indifferent to failure
Response to examiner		
7. Feels socially at ease / /	1 2 3 4 5	A. belligerent, rebellious B. shy, reticent, reserved C. unresponsive-apathetic
8. Responds to normal amount of encouragement and support / /	1 2 3 4 5	A. needs constant praise and encouragement B. acts overly independent C. indifferent to praise or encouragement
Generalized responses		
9. Normal activity level / /	1 2 3 4 5	A. hyperactive B. hypoactive
10. Normal verbal expression / /	1 2 3 4 5	A. verbose B. taciturn
11. (for bilingual or multi-lingual children) English usage adequate / /	1 2 3 4 5	A. English usage inadequate
Test conditions		
12. Adequate	1 2 3 4 5	Specify nature of inadequacy or interference, e.g., room noisy, child sick, etc. _____