THE INTERRELATIONSHIP BETWEEN SOCIAL-EMOTIONAL BEHAVIOR AND INFORMATION-ACHIEVEMENT OF HEAD START CHILDREN

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ABSTRACT

THE INTERRELATIONSHIP BETWEEN SOCIAL-EMOTIONAL BEHAVIOR AND INFORMATION-ACHIEVEMENT OF HEAD START CHILDREN

by Marjorie Heath Noble

The major theoretical position underlying this study was founded on the increasing recognition by social scientists of the need for a process conception of the human being which recognizes the "whole" person instead of a simple partite breakdown of the person into his component systems. In applying this conception to the study of children in the schools, concern with the implications of the fact that "persons" go to school, and not simply equipment for learning, becomes paramount. The awareness that every mental function is imbedded in a personal life implies that studies of cognitive functioning should include reference to the individual's personality.

With the advent of Project Head Start there developed an increasing interest in studying the disadvantaged child in the school, as it has been found that children who have known only poverty tend to be unsuccessful in school. Head Start, then, offers fertile ground for exploring the interrelationship between social-emotional behavior and cognitive learning in children coming from deprived backgrounds.

The present study, in affiliation with the national

Head Start evaluation program, attempted to explore this interrelationship among 133 Head Start Children representing a wide range of community types and ethnic groups in the middle west.

Two instruments were employed in the study. The Preschool Inventory was constructed by Caldwell and Soule to give a measure of achievement in areas regarded as necessary for success in school and yields four subscores. The Operation Head Start Behavior Inventory was designed by Ziegler for use by Head Start to evaluate the behavior of nursery school children and yields four subscores according to Cline's factor analysis.

The Preschool Inventory was administered to each child during the first and last months of attendance in Head Start. The Behavior Inventory was completed for each child by the teacher during the first month of the program. All of the gains in the subscores and total on the Preschool Inventory were correlated with the four subscores on the Behavior Inventory.

The general hypothesis was: There are positive relationships between positive aspects of teachers' ratings of social-emotional behavior and gains in information-achievement; and negative relationships between negative aspects of teachers' ratings of social-emotional behavior and gains in information-achievement of children enrolled in Head Start.

Although some significant relationships were found among the variables, the results did not yield as substantially

significant relationships as hypothesized. Further explorations and implications of these results were discussed. It was concluded that there may be substantial relationships between the variables as hypothesized, but that these relationships were concealed in the present study by the difficulty in accurately measuring a subtle variable as social-emotional behavior and by the diversities and intricacies of the classroom setting in which the investigation was conducted.

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By

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CHAPTER I

THE PROBLEM AND ITS JUSTIFICATION

The "Whole Person" Concept

The assumptions underlying research in the social sciences are being challenged by an increased interest in what Maslow calls "Third Force Psychology" (1962). Bugental describes the parameters that are being challenged. Among these are "the model of man as a composite of part functions; the model of a science taken over from physics; and the criterion of statistical frequency as a demonstration of truth" (1963).

Allport states that the biologist, physiologist and biochemist tend to retreat into a pattern of "deliberately avoiding the phenomena both of total organization and of consciousness, and thus reduce the person to something less than a complete system for study" (1955, p. 6). From this scientific model that Allport describes the "so-called 'behavior sciences' ablate an aspect of personal conduct from the integral nexus of personality, and relate this aspect to some outer frame of reference" (Allport, 1955, p. 5). This is to say that a picture is provided of the political man in relation to a political system, or of the economic man in relation to the economic system, but not of the whole

man in relation to his own individual system.

Social scientists, then, have often operated on the basis that the total human being could be sufficiently understood in terms of a catalogue of his component parts. More recently, the need for a "process conception of the human being," a conception which recognizes the whole person, is being recognized (Bugental, 1963). The behavioral scientist especially cannot be satisfied with segments of persons related to outer ordinates. "He must consider the system as a whole, and show how part systems are related to one another" (Allport, 1955, p. 6).

In the study of children, for example, it should be realized that the child is not simply a composite of his intellect, language, emotions, social behavior, and motor skills; but rather, is a unique human being comprised of complex interrelationships between all of these factors, and possessing an individuality which cannot be categorized (Allport, 1943). A cursory review of the educational and child development research shows, however, that the primary concern has traditionally been to study the child in terms of his component parts and behaviors. Even in the major child development textbooks this emphasis upon the child in components is maintained. In Breckenridge and Murphy's text (1963), for example, the chapter headings include such topics as Physical Needs, Psychological Needs, Motor Development, Intellectual Development, and Adult-Child Relationships. The student of child development is therefore channeled into

thinking of the child in terms of the sum total of separate entities.

Sigel, referring to understanding the "whole" child, says "A starting point for now may be a tripartite breakdown of biological, psychological, and exogenous environmental systems" (1956, p. 244). He further describes delineation in these three basic systems. In diagnosing and analyzing children's behaviors and actions as separate entities in this way, however, there exists the very real danger of losing sight of the importance of the value and individual worth of the child as he exists in his own right as a "whole person." This method of study inevitably leads to the use of comparisons, standards, and common symbols from which it is difficult to deviate (Bugental, 1963).

In the educational realm, teachers too often have viewed the child in terms of external measures of IQ and experts' categorizing of behavior (Moustakas, 1956). However, it is being realized more clearly than before that this categorizing and labeling is not enough. Increasingly, "we are more concerned with the implications of the fact that 'persons' go to school, not just an equipment for learning, not just memories, minds or intellects" (Jones, 1966, p. 322). A number of researchers are coming to emphasize the <u>person</u> in the educational process. For example, Allport asserts the important role of ego involvement or what might be called "personal stake" in learning, judgment, attitudes and belief (1943).

In applying his perceptual theory to education, Bills states that "to teach a person we must understand him, and this is most easily accomplished by trying to see him and his world as he sees them" (1955, p. 36). Traditionally, education has started with problems; those problems which teachers perceive to be important and usually those which are designed for the future-need satisfaction of pupils. This procedure can lead to difficulty as Snygg and Combs (1949) point out. They assert that problem behavior in schools is most often the result of this kind of instruction where teachers attempt to teach, for future-need satisfaction, children who are in need of immediate-need satisfaction. For example, "To start teaching with such a problem as number combinations because they will be needed in the future to solve arithmetic problems, and after that, life's problems, is to divorce learning from the purposes of people" (Bills, 1955, p. 36).

This is to say, therefore, that in education one must not lose sight of the fact that a child is an emotional as well as a cognitive being, one being interdependent upon the other. The child comes to school with an emotionalism which is entwined with his values and beliefs about reality. Any learning that this child acquires will be colored by all of these factors.

Recent Research

Empirically the interdependence of social and emotional behavior and achievement in children has been demonstrated for several years. In reviewing the literature from 1933 to 1963, Taylor (1964) concluded that overachievers, as opposed to underachievers, are characterized by well-controlled (rather than "free-floating") anxiety, high self-esteem, acceptance of authority, good relations with peers, either independence or little conflict about dependency, academically-oriented (rather than socially-oriented) interests and activities, and realistic goals.

While Crandall, in her own review of the literature concerning achievement as it relates to other factors (1967), agreed with most of Taylor's conclusions, she acknowledged several studies which have found that the achieving child has a number of less desirable behavior characteristics and relationships with important persons in his life. These findings will be addressed first.

A longitudinal study (Sontag, Baker, & Nelson, 1958), based on ratings of children's behavior in nursery and elementary school as well as in the home, showed that both boys and girls whose IQs increased during the preschool years were independent of adults and competitive with peers. In addition, the girls were less "feminine" in their behavior. During the elementary school years, boys with increasing IQs were also more aggressive and anxious than boys with declining IQs.

In spite of the fact that independence was found to be related to achievement in one study (Crandall, Preston and Rabsom, 1960), the same investigators (1958) found in a similar sample of children, who displayed more achievement efforts in nursery school, a compliance to the requests and demands of the adult staff. Haggard in a longitudinal study (1957) has also reported that compliance to adult pressures and values was found among children at the elementary school age who were high academic achievers. In the later grades strong antagonistic attitudes toward adults were found among the achievers and they became more aggressive and destructive.

In discussing the findings, contrary to those of Taylor, in her overview of the literature, Crandall states,

> It would appear then that achieving children, in contrast to peers who perform less well, do not need to depend upon adults but are somewhat compliant and conforming to their demands. . . . While achieving children of preschool and early elementary age are somewhat aggressive and competitive, their social relationships are generally good. . . . By later elementary school or junior high age, aggression and competition have become accentuated, relationships with siblings, peers, and adults show some disruption, and children are less creative, more anxious, and less able to resist the temptation to cheat . . . these attributes become increasingly pronounced at later ages. Does this mean that the effort to achieve 'produces' the less desirable personality attributes? Or does it mean that only if children have acquired such personality constellation will they then be able to achieve in our highly competitive, post-Sputnik educational system? Cause and effect relations cannot be determined from these data, but it is obvious that our 'education for excellence' is accompanied by certain psychological costs. (1967)

The relationships between positive behaviors and achievement gain as well as between negative behaviors and

negative achievement, however, have been demonstrated repeatedly in recent years at varying levels of development. The research yielding these relationships will now be addressed.

First, at the university level several studies have been recently carried out concerning academic success as it relates to social and/or emotional behavior. Wilson, Sodiquist and Zemke (1967) hypothesized that academic underachievement is a manifestation of emotional illness. The investigators found that in most of the 14 underachievers studied, underachievement proved to be one manifestation of rather significant underlying emotional disturbances. In another study the results of 532 examinations of students, who were interviewed by the Mental Health Services and who exhibited problems in this area, were compared with the remaining 1968 students who did not exhibit problems in mental health. The results confirmed the existence of significant correlations between emotional disturbances and the ability to mobilize sufficient intellectual resources to meet the demands of university work (Frighi, Pichini, Biette, 1966). Lastly, in comparing social maturity with academic success in college students, it was found that the socially immature students were more disruptive of classroom proceedings, whereas socially mature students contributed more to classroom discussion. The socially immature students also had a higher absentee rate and underachieved in academic performance (Kipnis, 1968).

At the high school level investigators have studied

the relationships between these variables especially to aid in the understanding of the factors involved in producing a "school drop out" as opposed to a university candidate. Crites and Semler (1967), for instance, followed up their study of 483 fifth graders seven years later in the twelfth grade, in order to collect cross sectional and longitudinal data on the interrelationships of adjustment, educational achievement, and vocational maturity as dimensions of development in adolescence. It was found that early adjustment was related not only to later adjustment but also to later educational achievement and vocational maturity. The current adjustment correlated even higher with these variables.

In the elementary school the importance of the relationship between social and emotional adjustment and achievement is also being recognized and researched. Using a sample of 1,500 boys and girls, grades one through six, Young (1965) identified clusters of significant relationships between academic achievement measurements, emotional stability, and motor performance measures. Implications for curriculum planning and development were deducted. In another study, Koppitz (1966) studied the relationship of emotional indicators as demonstrated on the Human Figure Drawings with learning problems in 110 children age five to ten. Several emotional indicators were positively related to school achievement. Koppitz also discovered six emotional signs which could be used to predict learning

problems in school beginners.

Several studies of elementary school children have investigated the relation between anxiety, a negative emotion, and test performance, a measure of achievement and intelligence (Cowen, Zax, Klein, Izzo, & Trost, 1965; Feldhusen & Klausmeier, 1962; Hill & Sarason, 1966; Keller & Rowley, 1962; McCandless & Castaneda, 1956; Reese, 1961; Ruebush, 1960; Saxena, 1965). Among early elementary school children the findings generally show that more anxious children tend to perform more poorly on achievement and intelligence tests, although the relations are weak and vary greatly from one investigation to the next. Both cross-sectional and longitudinal studies indicate that anxiety increases with age and the relation between high anxiety and poor test performance is stronger and more frequent in the studies of fifth and sixth grade students (Crandall, 1967). However, Haggard (1957) found, as did Feldhusen and Klausmeir, that gifted achieving children were more anxious than their nonachieving peers. According to Crandall, it may be that the achieving children were characterized by only moderate amounts of anxiety or that some anxiety has a facilitating effect upon the academic performance of bright children.

Finally, in considering the relationship between social and emotional adjustment and behavior in the elementary school age child, a report on equality of educational opportunity (Coleman, Cambell, Hobson, McPartland,

Mood, Weinfeld & York, 1966) deserves mention. The report covering nationwide assessment of children of elementary and high school ages, demonstrated that self-concept, relative to intellectual and academic ability, was highly related to academic performance among white children. As to minority groups, however, a sense of being in control of one's own successes and failures was the factor most strongly associated with achievement. These two orientations were more highly related to achievement than any of the many other environmental, family, school or teacher variables studied.

Even at the preschool level several studies have revealed a relationship between achievement and social-emotional adjustment (Bruner, 1961; Deutsch, 1964; Hunt, 1961; Hunt, 1963). Researchers and educators are recognizing the importance of this relationship in children before they reach the primary grades. A group of researchers under the direction of Martin Deutsch (1964) have studied preschool age children in this vein and have found that concept formation, auditory and visual discrimination, language acquisition and IQ scores related to such factors as race, social class, nursery school or kindergarten attendance, and father's presence or absence from the home. One of the elements common to all these factors was the social and physical stimulus deprivation or enrichment concomitant to the child's status on each dimension. In another study cited previously, Crandall, Preston and Rabson (1960), using a

sample of three to five year old children, found that independence was a consistent characteristic of children who showed increases in IQ scores.

It would appear from the literature cited, that implications for future success academically and vocationally are inherent in the interdependence of achievement and social-emotional adjustment. It becomes necessary to consider the "whole" child in the school, taking into account all facets of his behavior as they interrelate with his learning. This consideration leads to an increasing awareness that "every mental function is imbedded in a personal life," and since "each personality is a law unto itself," studies of cognitive functioning and achievement should include reference to the individual's personality (Allport, 1937).

Project Head Start and the Deprived Child

It has been found that children who have known only poverty tend to be unsuccessful in school (Bereiter, 1966). In fact, "economically deprived families produce three to five times as many children with intellectual subnormalities, social and emotional disturbances, and/or school achievement problems than their more economically advantaged counterparts" (Hodges & Spicker, 1967, p. 263). Authorities report that severely disadvantaged children at the preschool level, when compared to middle-class preschoolers, are more likely to exhibit deficits in general intelligence, language development, fine motor coordination, time concepts, self concept,

and motivation. Upon school entrance it is further hypothesized that these deficits will produce subsequent scholastic achievement failure culminating in early school drop out.

The negative effects of psychosocial deprivation on intellectual development are well documented in the literature (Kennedy, 1963; Jensen, 1966). In general, the mean IQ of children from socioeconomically deprived areas is approximately ten points below that of middle-class children. Furthermore, these poverty areas, which generally contain ten percent of the community's school age population, often contribute to fifty percent of the children enrolled in special education programs for the educable mentally retarded. It is important to point out, however, that "this symptom of intellectual subnormality merely represents manifest capacity (intellectual functioning at the present time). It is quite possible, and highly probable, that the optimum intellectual potential (basic capacity) of these children is considerably higher than their present intellectual functioning" (Hodges & Spicker, 1967, p. 264). If, therefore, the home environment of the disadvantaged child provides inadequate stimuli for optimum intellectual development, but the potential for average intellectual functioning exists, it would seem advantageous to research the interrelationship between this child's intellectual development and his social-emotional behavior which has been contributed to by his psychosocial deprivation.

Project Head Start, which was conceived in 1965 to

help children who are among the economically and culturally deprived, offers fertile ground for exploring this interrelationship. The Head Start program is attempting to reverse the course of intellectual, social, and physical retardation of the deprived child (Ausubel, 1963). Local communities with aid from the federal government are attempting "to give pre-school children from economically and culturally disadvantaged backgrounds and their families the education, medical care and social services they so desperately need" ("Project Head Start and How You Can Help," 1965). Since the advent of this program, investigators in the fields of child development and education have become increasingly interested in studying the behavior of the culturally deprived child as it interrelates with his cognitive functioning in the schools.

Hess, using two groups of Head Start Children, attempted to determine "the degree to which certain behavioral measures interact with intelligence, whether in a linear or curvilinear fashion, to help one predict academic achievement in Head Start children to a greater degree than would be possible were intelligence test performance alone used as the predictor variable" (1966, p. 28). It was found that on tests or ratings which profess to objectively measure achievement, scores of high IQ children seem to be significantly more affected by differences in level of aggression, verbal-social participation, independence, and achievement-oriented behavior than do scores of low IQ children. This

suggests that handicaps in those performance areas assessed by intelligence tests cannot be effectively mediated through the adoption of optimal behavior patterns. It was also seen, however, that behavior patterns of low IQ children appear to facilitate or impede general adjustment to the school environment, as measured by teachers' report card ratings, more than do behavior patterns of high IQ children.

Hayweiser (1967) and Rosenthal (1966) in studying lower income level preschool c hildren have demonstrated that teachers' perceptions of children's social adaptedness is significantly and positively correlated with intelligence.

Researchers in child development in education, therefore, are beginning to make important strides in disclosing the intricacies of cognition as it relates to the total child, and some important differences among children coming from deprived backgrounds and middle-class children in these areas of relationship are beginning to be recognized. There is a need, however, for much more research in this area.

Head Start's Research and Evaluation Office is conducting a national, comprehensive study of the impact of Head Start upon children. A major component of this study is an analysis of the gains exhibited by Head Start children in cognitive and in social-emotional behavior. In the 1966-1967 evaluation, two independent instruments were used. The Preschool Inventory, developed by Caldwell and Soule, was designed "to give a measure of achievement in areas regarded as necessary for success in school" (undated, p. 1).

The Operation Head Start Behavior Inventory, designed by Ziegler to be used by Head Start, was constructed to assess those social and emotional behaviors of nursery school children "which are relatively independent of intelligence" (undated, p. 1). Using these instruments as entirely separate entities in the analysis of Head Start programs embodies the implicit assumption that achievement and social-emotional behavior are independent, a position contrary to the position on which the present study was based.

In evaluating the Head Start program, researchers should not, as has been demonstrated, be concerned solely with a child's gains in cognitive functioning and with his behavior improvement independently, but rather with the child as a "whole person." "Cognition does not function independently as an inborn disposition conditions a profile effect, because it is colored and codetermined by interests and traits of character, by habits and external influences" (Stern, 1938). If Head Start's impact on children is to be assessed, these interrelationships of variables must be examined.

Purpose of the Present Study

In the present study the child was recognized and examined as a "whole" entity. It was the purpose of this study to (1) identify the social-emotional and information-achievement characteristics of children enrolled in Head Start, and (2) to explore the interrelationships found to be existing between social-emotional behavior, as assessed

by the teacher at the outset of the school year, and the gains exhibited over the school year in information-achievement.

The major hypothesis of this study was: There are positive relationships between positive aspects of teachers' rating of social-emotional behavior and gains in information-achievement; and negative relationships between negative aspects of teachers' rating of social-emotional behavior and gains in information-achievement of children enrolled in Head Start.

CHAPTER II

PROCEDURES

Population and Sample

Population

The Michigan State University Head Start Evaluation and Research Center was responsible for gathering data on Head Start programs within the geographic area of Minnesota and Wisconsin, Michigan and western Ohio. The population for the present study includes all children enrolled in full year Head Start programs in this region. Represented in this area are a wide range of community types and ethnic groups, from farm and non-farm rural areas to the most densely populated urban ghettos. Head Start in this area serves Whites, Negroes, and a few Indians and Spanish-Americans, all English-speaking.

Procedures for Sample Selection

The sample selection was carried out in such a way that the community and ethnic group diversity represented in the population would be reflected in the sample. Selection of the sample was also constrained by the necessity of including only those Head Start programs which were operational early in the fall, 1966, so that pre-testing could be completed early in the year.

The sample was gathered in most cases by first writing or calling the Community Action Program (CAP) director in a locality which had received funds, or was in the process of requesting funds, for a full-year Head Start program. If the CAP director exhibited an interest in participating in the national evaluation program, the Evaluation and Research (E&R) Center Director met with him, and his Head Start program director summoned some of his teachers to a meeting with the E&R Center's Director or Evaluation Coordinator, who outlined to the teachers the philosophy and procedures of the evaluation. The teachers were entirely free to decline participation. This option was made very clear to the teachers and to other school personnel who might have wanted to require teacher participation. Every effort was made to establish with the teachers a relationship based on mutual respect and honesty.

The Stratified-random Sample

The sample of classes was thus stratified in that the variability in community type and children's ethnic group was represented in the sample. The selection of only those classes whose teachers were interested in the program was a constraining element. This might have been criticized as a contributor to bias, but it was felt that the bias that might result from the teachers' interest and permission would be far less harmful to the study than would be the influence of a hostile, resistant teacher upon data collection, and

particularly the testing of children.

Within the stratified-sampled classrooms, children were selected at random to be included in the study. The original E&R Center sample included 161 children from 17 classes in five communities; attrition during the year reduced the sample size at the conclusion of the E&R study to 136 and of the present study to 133. At the outset of the study, the children ranged in age from 3 to 5 years, 5 months (Hervey, 1967); the mean age of the children was 52.42 months (4 1/3 years) with a standard deviation of 6.61 months. In the national evaluation half of this sample was administered the Stanford Binet at the outset of the present study. The mean intelligence quotient was found to be 91.71 with a standard deviation of 13.97. The distribution of the sample by sex, race, and urbanicity appears in Table 1.

Instruments

Preschool Inventory

Caldwell and Soule in the introduction to the Preschool Inventory manual describe the instrument in this way:

> The Preschool Inventory is a brief assessment procedure designed for individual use with children in the three-to-six age range. It was developed to give a measure of achievement in areas regarded as necessary for success in school. It is by no means culture free; in fact, one aim of the instrument is to permit educators to highlight the degree of disadvantage which a child from a deprived background has at the time of entering school in order to help eliminate any observed deficits. Another goal in the development of the procedure was to make available an instrument that was sensitive to experience and could thus be used to demonstrate changes associated with educational intervention (undated, p. 1).

Table 1

Distribution of the Sample by Sex, Race, and Urbanicity

Urbanicity	Race			
	Negro	White	Mexican-American	Indian
Urban Industrialized Inner City, ppn = 1,700,000	23 females 22 males	6 females 3 males	3 females 2 males	-- --
Medium Size Cities, ppn = 82,000-107,000	12 females 12 males	2 females 2 males	-- --	-- 2 males
Urban Fringe Community, ppn = 26,000	-- --	11 females 10 males	-- --	-- --
Rural ppn = 500-1,000	-- --	9 females 11 males	-- --	1 female 2 males

Total N = 133

The instrument yields four subscores or factors which emerged from a factor analysis carried out by Caldwell and Soule. They include:

Factor A. Personal-social Responsiveness

This factor appears to involve knowledge about the child's own personal world (name, address, and parts of body) and his ability to establish rapport with, and respond to the communications of another person (carrying out simple and complicated verbal instructions given by an adult). Perhaps more than any other factor, it represents the type of eminently practical ability which the Inventory was originally designed to assess.

Factor B. Associative Vocabulary

This factor requires the ability to demonstrate awareness of the connotation of a word by carrying out some action or by associating to certain intrinsic qualities of the underlying verbal concept. Item units having high loadings (in the factor analysis) include simple labeling of geometric figures, supplying verbal or gestural labels for certain functions, actions, events, and time sequences, and being able to describe verbally the essential characteristic of certain social roles. Many of the specific deficits frequently attributed to culturally deprived children cluster in this factor.

Factor C_1. Concept Activation, Numerical
C_2. Concept Activation, Sensory

This factor accounted for the greatest amount of common variance. The concepts involved seem to represent two major categories: ordinal or numerical relations, and sensory attributes such as forms, color, size, shape, and motion. The activation involves either being able to call on established concepts, to describe or compare attributes (relating shapes to objects, color-names to objects or events) or to execute motorically some kind of spatial concept (reproduction of geometric designs). High scores on this factor involve being able to label quantities ("How many" questions), to make judgements of more or less, to recognize seriated positions (first, last, middle) and to be aware of certain sensory attributes (shape, size, motion, color), and to be able to execute certain visual-motor configurations

> (geometric forms). As this factor accounted for the greatest amount of common variance in the initial version of the instrument, and as it appeared to be composed of two subfactors (numerical and sensory concepts), it was given double representation on the standardization version of the instrument. (Caldwell and Soule, undated, pp. 2-3).

The instrument takes approximately fifteen minutes to administer to most children. On the original standardization sample of 171 children, correlation between the score earned on the complete version and the shortened version (version utilized in the present study) is .98. Split-half reliability of the shortened version, corrected by the Spearman-Brown formula, is .95 (Caldwell and Soule, undated).

Hess (1966) conducted a study in which the result of Caldwell's preliminary form of the inventory was compared with standard intelligence measures. In his analysis of the relation of several cognitive measures to each other, Hess concluded that "if one wishes to measure the most important aspect of cognitive status in pre-school children, one should measure intelligence (or achievement/information) using either a Stanford Binet, the Preschool Inventory, or, if time and facilities are lacking, a Draw-a-Man IQ" (1966, p. 6). The Stanford Binet was found to be highly significantly correlated with the Preschool Inventory (.733) (Hess, 1966, p. 12).

Operation Head Start Behavior Inventory

The Behavior Inventory was constructed by Ziegler at Yale University for use by Head Start to evaluate the

behavior of nursery school children. The original Behavior Inventory was designed "specifically for use by the nursery school teacher to aid in the assessment of nine particular areas of behavioral adjustment of her children" (Ziegler, undated, p. 1). The selection and categorization of the 50 items into nine areas or dimensions, was done on an a priori basis. Each item is rated on a 4-point scale from "very much like" to "not at all like." A copy of the Behavior Inventory appears in Appendix B.

Hess (1966) conducted a factor analysis of the Behavior Inventory using 769 subjects and determined from the fifty items, five summary scores: aggression, verbal-social participation, lethargy, independence, and achievement. The number of items on the instrument was reduced to 23. Hess then compared teachers' ratings on the instrument with observers' ratings in his entire sample and concluded that "this instrument is reliable and can with confidence be used in future studies" (1966, p. 37).

Another factor analysis of the Behavior Inventory, using a sample of approximately 2000 Head Start children, yielded four factors with a total variance among the four factors of 47.55% (Cline, undated). Because of the larger number of subjects on which it was based, this four factor structure was used in the present study. Cline named his four factors: (1) Jack Armstrong (The All-American Boy); (2) Donald Duck (Irrepressible, excitable, uncontrolled); (3) Casper Milquetoast (Frightened and withdrawn); (4) Young

Horatio Alger (Perseverance and hard work will win out).

Although Cline included items for each factor which loaded as low as .328, for the purposes of this study only the items which loaded at .50 and above were used. The items comprising the four factors appear in Appendix B.

Data Collection

The Preschool Inventory was administered to each of the children in the sample during the first month of attendance in Head Start, and again by the same examiner in most cases during the children's last month in the program. Caldwell's directions for administration and scoring provided the only available directions; the machine scoring answer sheet (see Appendix A) was used for recording the children's performance. The Preschool Inventory examiners were experienced preschool or early elementary teachers or psychologists having special experience with young children, and were selected for their flexibility and ability to interact well with young children. The examiners were thoroughly familiarized with the test by first studying it and giving a practice test or two, and then administering it under the supervision of the Evaluation Coordinator in a laboratory equipped with one-way glass for observations.

The Operation Head Start Behavior Inventory was administered for all children in the sample at the same time as the pre-testing on the Preschool Inventory. The Inventory was completed for each child by the head teacher. Since

no directions were available for standardized administration of the instrument, the teacher was asked to respond to each item by recording her impression of the child's behavior from her classroom interaction with the child.

Hypotheses

The general hypothesis of this study was: There are positive relationships between positive aspects of teachers' rating of social-emotional behavior and gains in information-achievement; and negative relationships between negative aspects of teachers' rating of social-emotional behavior and gains in information-achievement of children enrolled in Head Start. More specifically it was hypothesized that the "Casper Milquetoast" and the "Donald Duck" personalities would correlate negatively with gains in all of the Preschool Inventory subscores and the Preschool Inventory totals. These negative relationships were hypothesized, in that the frightened and withdrawn kind of child as well as the irrepressible, excitable, uncontrolled kind of child both seem to possess characteristics which would hinder gains in the cognitive kinds of tasks which were regarded as necessary for success in school.

It was further hypothesized that the "Jack Armstrong" and the "Young Horatio Alger" personalities would correlate positively with gains in all of the Preschool Inventory subscores and the Preschool Inventory totals. These positive relationships were hypothesized because the "all-American

boy" kind of child as well as the child who perseveres and works hard seem to possess those characteristics which would foster gains in the cognitive kinds of tasks regarded as necessary for success in school.

Analysis

This study focused on the Preschool Inventory gain scores for each child and their interrelationship with the scores on the Behavior Inventory. Gains in scores from the pre and post test administration were calculated for four subscores and total on the Preschool Inventory for each child. The four subscores on the teachers' ratings of the Behavior Inventory were calculated also for each child.

Pearson Product-Moment correlations among these scores were calculated and examined for the purpose of exploring the interrelationships hypothesized. Only those correlations that were significantly different from zero were interpreted.

CHAPTER III

RESULTS

Data

The data for the analysis consisted of three sets of scores for each subject, the Preschool Inventory scores both pre and post and the pre Behavior Inventory scores.

Preschool Inventory: Scores composed of:

A. Personal-social Responsiveness
B. Associative Vocabulary
C_1. Concept Activation - Numerical
C_2. Concept Activation - Sensory
Total

Behavior Inventory: Scores represent the following behavior types:

Jack Armstrong
Donald Duck
Casper Milquetoast
Young Horatio Alger

Hypotheses

1. The "Jack Armstrong" subscores on the Behavior Inventory will be positively related to gains in the four Preschool Inventory subscores and the total score.

2. The "Donald Duck" subscores on the Behavior Inventory will be negatively related to gains in the four Preschool Inventory subscores and the total score.

3. The "Casper Milquetoast" subscores on the Behavior Inventory will be negatively related to gains in the four

Preschool Inventory subscores and the total score.

4. The "Young Horatio Alger" subscores on the Behavior Inventory will be positively related to gains in the four Preschool Inventory subscores and the total score.

Results

Table 2 presents the correlation coefficients bearing directly upon these hypotheses. These results did not totally support hypotheses one, two, three or four. Although some significant relationships were discovered, they were not substantial enough to strongly affirm the hypotheses. There were a total of nine correlation coefficients found to be significant out of a possible twenty; six at the .05 level, one at the .01 level and two at the .001 level of significance. All of these nine significant correlations were in the directions hypothesized.

Summary of Findings

The results in Table 2 can be considered from two different viewpoints. One is to examine each of the Behavior Inventory subscores separately in relation to all of the gains in the Preschool Inventory subscores and total score. The other is to examine the gains in each of the Preschool Inventory subscores separately in relation to all of the Behavior Inventory subscores. The results are summarized in terms of these respective viewpoints:

I A. The "Jack Armstrong" subscore of the Behavior Inventory correlated negatively with gains in Personal-Social Responsiveness as hypothesized, but did not

Table 2

Correlation Coefficients Between Behavior Inventory Subscores and Gains in Preschool Inventory Subscores and Total

Behavior Inventory Subscores	Preschool Inventory Gain Scores				
	Personal-Social Responsiveness	Associative Vocabulary	Concept Activation-Numerical	Concept Activation-Sensory	Total
Jack Armstrong	.16*	.13	-.05	.10	.15
Donald Duck	-.15*	.12	-.11	-.22**	-.13
Casper Milquetoast	-.16*	-.17*	.03	-.09	-.16*
Young Horatio Alger	.20*	.13	.08	.25***	.26***

* $P \leq .05$

** $P \leq .01$

*** $P \leq .001$

correlate significantly with gains in Associative Vocabulary, Concept Activation-Numerical, Concept Activation-Sensory and total score on the Preschool Inventory in the directions hypothesized.

B. The "Donald Duck" subscore on the Behavior Inventory correlated negatively with gains in Personal-Social Responsiveness, and Concept Activation-Sensory as hypothesized, but did not correlate significantly with gains in Associative Vocabulary, Concept Activation-Numerical, and total score in the directions hypothesized.

C. The "Casper Milquetoast" subscore on the Behavior Inventory correlated negatively with gains in Personal-Social Responsiveness, Associative Vocabulary, and total score as hypothesized, but did not correlate significantly with gains in Concept Activation-Sensory in the directions hypothesized.

D. The "Young Horatio Alger" subscore on the Behavior Inventory correlated positively with gains in Personal-Social Responsiveness, Concept Activation-Sensory, and total score as hypothesized, but did not correlate significantly with gains in Associative Vocabulary and Concept Activation-Numerical in the directions hypothesized.

II A. Gains in Personal-Social Responsiveness on the Preschool Inventory correlated significantly with all four subscores on the Behavior Inventory in the directions hypothesized.

B. Gains in Associative Vocabulary correlated negatively with the "Casper Milquetoast" subscore as hypothesized, but did not correlate with the "Jack Armstrong," "Donald Duck," or "Young Horatio Alger" subscores on the Behavior Inventory in the directions hypothesized.

C. Gains in Concept Activation-Numerical did not correlate significantly with any of the four subscores on the Behavior Inventory in the directions hypothesized.

D. Gains in Concept Activation-Sensory correlated negatively with the "Donald Duck" subscore and positively with the "Young Horatio Alger" subscore as hypothesized, but did not correlate significantly with the "Jack Armstrong" or "Casper Milquetoast" subscores on the Behavior Inventory in the directions hypothesized.

E. Gains on the Preschool Inventory total score correlated negatively with the "Casper Milquetoast" subscore and positively with the "Young Horatio Alger" subscore on the Behavior Inventory as hypothesized, but did not correlate significantly with the "Donald Duck" subscore on the Behavior Inventory in the directions hypothesized.

CHAPTER IV

DISCUSSION AND CONCLUSIONS

Discussion of Results

The Correlation Coefficients

Interestingly, all of the four Behavior Inventory factor structures were significantly correlated with gains in personal-social responsiveness on the Preschool Inventory. This was the only subfactor on the Preschool Inventory which seemed to be directly related to all four behavior types. If we look at the kinds of questions included in the personal-social responsiveness category, this relationship can easily be understood.

As was discussed previously, personal-social responsiveness involved the child's knowledge of his own personal world and his ability to establish rapport and respond to the communications of an adult (Caldwell and Soule, undated). It would appear, then, that the social-emotional state of a "Casper Milquetoast" (i.e. fearful and withdrawn) had a negative effect on his ability to communicate with an adult and played a part in preventing him from being able to improve in responding to questions about himself.

Likewise, a "Donald Duck," being very excitable and irrepressible, seemed to have had difficulty in controlling

his emotionalism enough to be able to improve in his communications with adults and in his ability to answer questions about his own world.

On the contrary, a "Jack Armstrong," who is well rounded and well adjusted, seemed to have the emotional stability required to enable him to quickly establish good rapport with others. His communications with adults were thereby improved and he was better equipped and more willing to answer questions about himself and his world.

Similarly, the emotional state of a "Young Horatio Alger," who perseveres at his tasks and who is compelled to work hard, appeared to positively affect his personal-social responsiveness. His desire to work hard and do well seemed to yield improvement in his ability to respond to adults and to communicate knowledge of his own world.

All of the factors in the Behavior Inventory factor structure, with the exception of "Casper Milquetoast," were not found to be significantly related to gains in the associative vocabulary subfactor on the Preschool Inventory. A small but nevertheless significant negative correlation was found to exist between the frightened, withdrawn child and his gains in associative vocabulary. This would seem to indicate that the child's shy, frightened, withdrawing nature hinders him in being able to verbalize or demonstrate his awareness of the connotation of words and verbal concepts. This is not to say that the child has not cognitively incorporated these concepts; he may or may not have. It does

say that he has been unable to improve in his desire and ability to verbalize or act out his knowledge of these concepts and that his withdrawing social-emotional behavior contributes to this inability.

None of the correlation coefficients between the four factor structures on the Behavior Inventory and the "Concept Activation, Numerical" factor on the Preschool Inventory were significant. It would appear, therefore, that the acquisition of numerical concepts is not directly related to the child's social-emotional behavior. Whether the child is well adjusted, withdrawn, hyperactive, or industrious does not seem to positively or negatively contribute to his being able to call on established numerical concepts in the form of labelling quantities, making judgments of more or less, and recognizing seriated positions. These results raise the question of whether learning in numerical areas of cognition is ever related to behavior or whether the non-existent relationship found is unique to the present study.

Questions which could be explored in further research might include: (1) Are behavior and gains in numerical concept activation unrelated? (2) If in fact, a relationship does not exist, what are the unique factors occurring in the acquisition of numerical concepts, but not occurring in the acquisition of other kinds of cognitive tasks, which make numerical concept activation unrelated to behavior? (3) Why do children of varying behavior types, all other variables being controlled, have an equal chance of gaining

cognitively in numerical concepts?

Gain in the "Concept Activation, Sensory" subscore on the Preschool Inventory was found to be more negatively related than gain in any other subscore to the "Donald Duck" factor structure on the Behavior Inventory. Gain in this Preschool Inventory subscore was also found to be more positively related than any other subscore to the "Young Horatio Alger" factor structure on the Behavior Inventory.

In order to gain in sensory concept activation, the child must have improved in his awareness of certain sensory attributes such as shape, size, motion and color, and in his execution of certain visual-motor configurations such as geometric forms. It would appear that the child who is hyperactive and uncontrolled has significant difficulty in growing in sensory awareness. Logically, this difficulty could occur because this child is too preoccupied in being overly active and irrepressibly excited to take the time to notice and incorporate sensory attributes. Implications for teaching might be drawn from this finding. The teacher of young children might do well to concentrate on introducing pleasant and satisfactory kinds of sensory experiences to her overly active children to help bridge the gap in this area that these children seem to exhibit.

The industrious, hard working child, on the other hand, apparently is prone to be very conscious of sensory attributes and therefore exhibits significant gains in his knowledge of sensory concepts over a period of time.

The Preschool Inventory total scores were negatively related to the "Casper Milquetoast" factor structure on the Behavior Inventory and positively related to the "Young Horatio Alger" factor structure on the Behavior Inventory. It would appear that the frightened, withdrawn child did not make positive strides in cognitive development throughout the school year due, in part at least, to his social-emotional behavior. The child who is quiet and exhibits withdrawing tendencies is apparently least likely to gain in areas necessary for success in school. It is felt that this finding discloses important implications for teachers.

Even more than the hyperactive, uncontrolled child who is most often singled out in a classroom for his "bad" behavior and consequently his poor school work, the child who is often times inconspicuous in the classroom (i.e. the quiet, frightened, and withdrawn child) also needs singling out as a potential slow learner due to his disturbed emotional state. Too often the little "Casper Milquetoasts" in the classroom are left to their own withdrawn world, getting further and further behind cognitively as well as emotionally because they cause few outward discipline problems for the teacher (Moustakas, 1966). The sensitive teacher should therefore be aware of and give special attention to the "Casper Milquetoasts" as well as the "Donald Ducks," "Jack Armstrongs," or "Young Horatio Algers."

The most significant correlation found in this study was that between the Preschool Inventory total and "Young

Horatio Alger." It would appear that "Young Horatio Alger's" perseverance and hard work did "win out," as he exhibited significant positive gains in the cognitive areas regarded as necessary for success in school.

Further Discussion

The results presented and discussed above indicate that the variables measured by the two instruments are not as substantially related as hypothesized. In summary, the testing of hypothesis one, concerning the relationship of "Jack Armstrong" to gains on the Preschool Inventory, yielded only one positive relationship out of the five hypothesized; the testing of hypothesis two, concerning the relationship of "Donald Duck" to gains on the Preschool Inventory, yielded only two negative relationships out of the five hypothesized; the testing of hypothesis three, concerning the relationship of "Casper Milquetoast" to gains on the Preschool Inventory, yielded three negative relationships out of the five hypothesized; and finally, the testing of hypothesis four, concerning the relationship of "Young Horatio Alger" to gains on the Preschool Inventory, yielded three positive relationships out of the five hypothesized. Upon examination of these results, two possible interpretations could be applied. The first, in the tradition of hard core scientific research, would be to accept the relationships found at face value and as a result assume that since the general hypothesis was not substantially supported in the present study, there is

no substantial relationship between social-emotional behavior and gains in information-achievement. On the other hand, the data obtained and the instruments used in this study could be analyzed further in light of the possibility that the hypothesized relationship might exist even though it was not strongly supported by the empirical evidence in this study.

The assertion that emotional behavior does play an important role in cognitive learning is becoming a widely accepted theory (see chapter one). In order to examine this role it was necessary to use the best instruments available which measured the variables in question. Because this study was done in affiliation with the National Head Start evaluation program, instruments were chosen which were especially constructed for evaluation of Head Start programs. It was felt after careful analysis of these instruments (see chapter two) that they were the best instruments available to measure the pending variables.

After completion of this study, however, serious questions were raised concerning the usefulness of the Behavior Inventory in assessing areas of behavioral adjustment in nursery school children. These questions include:

(1) Was teacher "A" rating the childrens' behavior from the same frame of reference as teacher "B"?

It has already been stated that since no directions were available for standardized administration of the instrument, the teacher was asked to respond to each item by

recording her impression of the child's behavior from her classroom interaction with the child (Hervey, 1966). Because no standardized directions were utilized for evaluating behavior, teachers may very likely have assigned different meanings to the frequency of behaviors in defining "very much like" and the other categories. This lack of a consistent viewpoint would have a definite bearing on the categorizing of behavior types among children from different classrooms and, in the final analysis, have a bearing on the relationships hypothesized and explored.

(2) Does the teacher's viewpoint of the child's social-emotional behavior within the first month of school actually reflect a valid picture of the child as he exists in his own right?

The problem of "first impressions" is one we all are confronted with in our dealings with people. We have all experienced judging people falsely on the basis of their outward appearances and actions until we actually become better acquainted with them and are better able to understand their modes of thinking and basic beliefs. It would seem that this very simple experience could apply to teacher-pupil relationships also. Even though preschool teachers in general are well trained in the complexities of child development and behavior, each child is a very unique and complex individual in his own right. Is it possible for even a teacher within the course of one month to fully understand the complexities of a classroom full of individual personalities so that she can accurately assess their social-

emotional status? If some inaccurate judgments in fact were made in assessing the social-emotional behavior of the children in the sample, these would have had a bearing on the relationships found among the variables in question.

(3) Are the four behavior types measured by the Behavior Inventory purely positive or purely negative?

In analyzing the items which comprised the "young Horatio Alger" subscore on the Behavior Inventory, for instance, the question could be raised as to whether all of these items are entirely indicative of positive personality traits. If a child possesses the characteristics of "sticks with a job until finished," "tries to figure out things for himself," and "is methodical and careful in tasks," he could possibly be leaning toward possessing rather compulsive and restrictive characteristics, as well as being a good worker. If in fact the "young Horatio Alger" subscore does incorporate negative characteristics, then it is not surprising that the relationship found between this subscore and gains in achievement was not more substantial. Other similar ambiguities might exist within the other three subscores.

The three questions cited, then, may have been cause for partially invalidating the data gathered on the social-emotional behavior variable. This data would in turn contaminate the relationships found between this variable and the information-achievement variable to some extent. In summary, it would appear that the Behavior Inventory seems to be teacher-specific and therefore most useful when children

are compared on judgments made by a common rater which was not the case in the present study.

Conclusions

The possibility of interpreting the results of this study literally seems to be implausible in view of the apparent inconsistencies in the data collected and, consequently, the relationships found. It therefore becomes essential to conclude the present investigation with an interpretation of the results other than a literal one. Because some significant relationships were found between the variables that cannot be overlooked, and because the majority of the theoretical and empirical evidence which has been presented support the hypothesized relationship, the possibility that a substantial relationship does exist between behavior and gains in information-achievement should not be ignored. In order for this conclusion to be an acceptable one in the present study, however, it cannot be in direct conflict with the results found. The attempt to resolve this conflict will be discussed further.

As has been mentioned, the fact that some significant relationships were found in the direction hypothesized lends support to the hypotheses. However, the fact that these relationships were not more substantial and that all of the hypotheses were not supported by significant relationships among the variables, might be clarified upon further examination.

First, some of the empirical evidence presented in chapter one did lend credence to the possibility that some negative behavior traits such as aggressiveness are positively related to achievement gains. This discrepancy in the available empirical evidence could offer a partial explanation as to why these relationships were not more substantial and of why all of the hypotheses were not supported.

Second, if we in fact refer back to a major theoretical principle upon which this study was based--that "cognition does not function independently as an inborn disposition but conditions a profile effect, because it is colored and codetermined by interests and traits of character, by habits and external influences" (Stern, 1938, p. 235)--the subtlety of the influence of behavior alone on cognition in the presence of many other influences becomes manifest. This manifestation can be accounted for in two ways: First, the social-emotional variable itself, as has been demonstrated, is a difficult construct to measure in view of the fact that the definition and observation of various behaviors is difficult to standardize. The construct, therefore, seems to be a subtle one. Secondly, because this study was conducted in the natural setting of many different classrooms, the diversity of the numerous factors which could influence the cognitive development of each child in the sample throughout the year would be difficult to control. It is apparent that such factors as teacher attitudes, peer influence, intelligence, motivation, interests, experiences, health, family

influences, classroom equipment, classroom environment, as well as social-emotional behavior could all be functioning influences on the child's performance in the classroom. If the facilities had been available to assess these variables, some of them could have been accounted for in the analysis. However, because this study was done in affiliation with the national Head Start evaluation program and utilized the data collected for that evaluation, many of these variables were not included.

If the present study were to be replicated, it is suggested that the intelligence variable be considered. The question might be raised that degree of intelligence may be directly related to the amount of potential a child has for cognitive gain within the time span of less than a year. If this relationship does exist, the children falling into the lower IQ bracket in the present study would not have been able to gain cognitively as quickly as the children falling into the higher IQ bracket. Possibly, then, if intelligence were controlled by dividing the sample into IQ groupings, more substantial relationships might be discovered between the variables hypothesized in this study.[1]

The influence of social-emotional behavior upon gains in achievement could then be a substantial one. However, because of the subtle nature of the variable itself in

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[1]An investigation of this question is presently being carried out by Norman L. Story at Michigan State University.

addition to the prevalence of other mitigating factors in the classroom, the influence of social-emotional behavior on achievement gains may have been subdued in the present study.

It would seem, therefore, that the multiformity of the factors in the classroom setting is likely to conceal any relationship between information achievement and a subtle and elusive variable such as social-emotional behavior. It is very possible that had the hypothesis been tested under laboratory conditions where the extraneous factors could be controlled and the behaviors standardized, that a substantial relationship between the variables might be found. This possibility is made very probable in light of the established theoretical and empirical evidence.

Since the present investigation was not conducted in the sterile conditions of the laboratory, to conclude that there are substantial relationships among the variables hypothesized, is to expand the face value of the results found in this study by emphasizing the value of theoretical evidence and related research. To conclude that there is not a substantial relationship between social-emotional behavior and gains in information-achievement is to place inordinate emphasis on the results of the present study to the detriment of sound theoretical assertion. Since the present study, as has been demonstrated, considerably reflected the social scientists' continuing problem of (1) accurately measuring subtle variables and (2) generalizing

from laboratory to field, the possibility of substantial, functional relationships as hypothesized between social-emotional behavior and gains in information-achievement cannot be abandoned.

Accordingly, it is concluded that because the theory and the available evidence seem to substantiate the general hypothesis--that there will be significant positive relationships between positive social-emotional behavior and gains in information-achievement, and significant negative relationships between negative social-emotional behavior and gains in information-achievement--there may very likely be relationships between these variables as hypothesized, though the results of this study were not supportive. It is felt that the relationships hypothesized were concealed in the present study by the subtlety and elusiveness of the social-emotional behavior construct causing difficulty in accurately measuring that variable, and by the diversities and intricacies of the classroom settings in which the investigation was conducted.

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APPENDIX A

Preschool Inventory Machine Scoring Answer Sheet

SIDE 1

PRESCHOOL INVENTORY

CHILD'S NAME _____ BIRTH DATE _____ DATE _____

INSTRUCTIONS

1. USE A NO. 2 PENCIL
2. SPECIFIC DIRECTIONS FOR ADMINISTRATING WILL BE FOUND IN PRESCHOOL INVENTORY MANUAL

CHILD'S IDENTIFICATION NUMBER

0	1	2	3	4		5	6	7	8	9
0	1	2	3	4		5	6	7	8	9
0	1	2	3	4		5	6	7	8	9
0	1	2	3	4		5	6	7	8	9
0	1	2	3	4		5	6	7	8	9
0	1	2	3	4		5	6	7	8	9

SEX MALE FEMALE

AGE IN MONTHS

	0	1	2	3	4		5	6	7	8	9
	0	1	2	3	4		5	6	7	8	9

TEST I

	R	W
1. WHAT IS YOUR FIRST NAME?		
2. WHAT IS YOUR LAST NAME?		
3. HOW OLD ARE YOU?		
4. WHEN IS YOUR BIRTHDAY?		
5. SHOW ME YOUR EYE		
6. SHOW ME YOUR NECK		
7. SHOW ME YOUR SHOULDER		
8. SHOW ME YOUR HEEL		
9. WHAT CALL (EAR)		
10. WHAT CALL (FINGER)		
11. WHAT CALL (KNEE)		
12. WHAT CALL (ELBOW)		
13. RAISE YOUR HAND		
14. WIGGLE		
15. HELLO VERY LOUDLY		
16. HELLO VERY SOFTLY		
17. FACE DOOR		
18. JUMP		
19. RED CAR ON BLACK BOX		
20. BLUE CAR UNDER GREEN BOX		
21. YELLOW CAR ON LITTLE BOX		
22. ONE CAR IN MIDDLE-SIZE BOX		
23. ALL CARS ONE SIDE, ALL BOXES OTHER SIDE		
24. 3 CARS IN BIG BOX		
25. 2 CARS BEHIND BOX IN MIDDLE		
26. GIVE EVERYTHING TO ME		

TEST II

	R	W
27. (CHECKERS) CAR THAT PULLS TRAIN		
28. (CHECKERS) LAST CAR ON TRAIN		
29. WHICH WAY DOES SAW GO?		
30. WHICH WAY ELEVATOR?		
31. WHICH WAY FERRIS WHEEL?		
32. WHICH WAY PHONOGRAPH RECORD?		
33. WHICH WAY WATER FALL?		
34. WHEN BREAKFAST?		
35. TIME OF YEAR HOTTEST?		
36. TIME OF YEAR COLDEST?		
37. TIME OF YEAR NOW?		
38. WHERE FIND LION?		
39. WHERE BUY GAS?		
40. WHO GO TO IF SICK?		
41. WHERE FIND BOAT?		
42. WHAT DO TO READ SOMETHING?		

	2	1	0	
43. WHAT DOES DENTIST DO?				_____
44. WHAT DOES POLICEMAN DO?				_____
45. WHAT DOES TEACHER DO?				_____
46. WHAT DOES FATHER DO?				_____
47. WHAT DOES MOTHER DO?				_____

SIDE 2

DO NOT WRITE IN THIS AREA	CHILD'S IDENTIFICATION NUMBER
	0 1 2 3 4 [ ] 5 6 7 8 9
	0 1 2 3 4 [ ] 5 6 7 8 9
	0 1 2 3 4 [ ] 5 6 7 8 9
	0 1 2 3 4 [ ] 5 6 7 8 9
	0 1 2 3 4 [ ] 5 6 7 8 9
	0 1 2 3 4 [ ] 5 6 7 8 9

TEST III

	R	W
48. HOW MANY EYES?		
49. HOW MANY NOSES?		
50. HOW MANY HANDS?		
51. HOW MANY TOES?		
52. HOW MANY WHEELS - CAR?		
53. HOW MANY WHEELS - BICYCLE?		
54. HOW MANY WHEELS - TRICYCLE?		
55. HOW MANY WHEELS-WHEELBARROW?		
56. HOW MANY WHEELS - ROW BOAT?		
57. COUNT (TO 5)		
58. HOW MANY CORNERS, PAPER		
59. 2 & 8 CHECKERS, WHICH MORE		
60. 6 & 6 CHECKERS, WHICH MORE		
61. 2 & 8 CHECKERS, WHICH FEWER		
62. POINT TO MIDDLE ONE		
63. POINT TO FIRST ONE		
64. POINT TO LAST ONE		
65. POINT TO SECOND ONE		
66. POINT TO NEXT-TO-LAST		

TEST IV

	R	W
67. DRAW A LINE		
68. DRAW A CIRCLE		
69. DRAW A SQUARE		
70. DRAW A TRIANGLE		
71. WHICH MOST LIKE WHEEL		
72. WHICH MOST LIKE TENT		
73. WHICH MOST LIKE STICK		
74. BIGGER, BALL OR BICYCLE		
75. BIGGER, TREE OR FLOWER		
76. SLOWER, CAR OR BICYCLE		
77. HEAVIER, BRICK OR SHOE		
78. HEAVIER, FEATHER OR FORK		
79. WHAT COLOR IS: (RED CRAYON)		
80. WHAT COLOR IS: (BLACK CRAYON)		
81. SAME COLOR AS THE SKY		
82. SAME COLOR AS THE NIGHT		
83. COLOR CIRCLE YELLOW		
84. COLOR SQUARE PURPLE		
85. COLOR TRIANGLE ORANGE		

EXAMINER'S NAME _____

OTHER: _____

_____

_____

A.	
B.	0 1 2 3 4 5 6 7 8 9
C.	0 1 2 3 4 5 6 7 8 9
D.	0 1 2 3 4 5 6 7 8 9
E.	0 1 2 3 4 5 6 7 8 9

IBM H9357C

APPENDIX B

Behavior Inventory and

Behavior Inventory Four Factor Structure

CAP-HS Form 37
(6-10-66)

OFFICE OF ECONOMIC OPPORTUNITY
PROJECT HEAD START

BEHAVIOR INVENTORY
SUMMER

Child's name	School

Grant No.	Child No.	Other	Examiner's Identification	Date

Present week of center's operation

INSTRUCTIONS

Please indicate as accurately as possible how this child behaves by marking one of the four responses to each question. Base your response to every item on your personal observation and experience with the child.

	Very much like	Somewhat like	Very little like	Not at all like
	1	2	3	4
1. Is usually carefree; rarely becomes frightened or apprehensive				
2. Is sympathetic, considerate, and thoughtful toward others				
3. Is easily distracted by things going on around him				
4. Is very suggestible; lets other children boss him around				
5. Talks eagerly to adults about his own experiences and what he thinks				
6. Is unduly upset or discouraged if he makes a mistake or does not perform well				
7. Often keeps aloof from others because he is uninterested, suspicious, or bashful				
8. Defends or praises his own efforts				
9. Is confident that he can do what is expected of him				
10. Is jealous; quick to notice and react negatively to kindness and attention bestowed upon other children				
11. Is methodical and careful in the tasks that he undertakes				
12. Is rarely able to influence other children by his activities or interests				
13. Tries to figure out things for himself before asking adults or other children for help				
14. Greatly prefers the habitual and familiar to the novel and the unfamiliar				
15. Appears to trust in his own abilities				
16. Has little respect for the rights of other children; refuses to wait his turn, usurps toys other children are playing with, etc.				
17. Seems disinterested in the general quality of his performance				
18. Responds to frustration or disappointment by becoming aggressive or enraged				
19. Is excessive in seeking the attention of adults				
20. Sticks with a job until it is finished				
21. Goes about his activities with a minimum of assistance from others				
22. Is constricted, inhibited, or timid; needs to be urged before engaging in activities				
23. Is even-tempered, imperturbable; is rarely annoyed or cross				
24. Is reluctant to talk to adults; responds verbally only when urged				
25. Works earnestly at his classwork or play; does not take it lightly				
26. Is often quarrelsome with classmates for minor reasons				

Please continue on reverse side

	Very much like	Some-what like	Very little like	Not at all like
	1	2	3	4
27. Does not need attention or approval from adults to sustain him in his work or play				
28. When faced with a difficult task, he either does not attempt it or gives up very quickly				
29. Does not like to be interrupted when engaged in demanding activities, e.g., puzzles, painting, constructing things				
30. Welcomes changes and new situations; is venturesome, explores, and generally enjoys novelty				
31. Calmly settles difficulties that arise without appeal to adults or others				
32. Is reluctant to use imagination; tends not to enjoy "make-believe" games				
33. Likes to talk with or socialize with the teacher				
34. Often will not engage in activities unless strongly encouraged				
35. Is eager to inform other children of the experiences he has had				
36. Emotional response is customarily very strong; over-responds to usual classroom problems, frustrations, and difficulties				
37. Is uncooperative in group activities				
38. Is usually polite to adults; says "Please," "Thank you," etc.				
39. Asks many questions for information about things, persons, etc. (*Emphasis here should be on questions prompted by genuine curiosity rather than bids for attention.*)				
40. Usually does what adults ask him to do				
41. Requires the company of other children; finds it difficult to work or play by himself				
42. Responds to frustration or disappointment by becoming sullen, withdrawn, or sulky				
43. Demonstrates imaginativeness and creativity in his use of toys and play materials				
44. Insists on maintaining his rights, e.g., will not yield his place at painting, or at the carpentry bench, etc.; insists on getting his turn on the slide or in group games, etc.				
45. Is wanted as a playmate by other children				
46. Is lethargic or apathetic; has little energy or drive				
47. Has a tendency to discontinue activities after exerting a minimum of effort				
48. Is generally a happy child				
49. Approaches new tasks timidly and without assurance; shrinks from trying new things				
50. What he does is often imitated by other children				

DO NOT MARK IN THIS SPACE

Behavior Inventory Four Factor Structure

Marvin G. Cline

NATIONAL EVALUATION: YEAR ROUND HEAD START
1966-67
BEHAVIOR INVENTORY FOUR FACTOR STRUCTURE
(post)
TOTAL VARIANCE (Four Factors): 47.55%

FACTOR I: Jack Armstrong, The All-American Boy
Variance: 12.78%

Item No.	Loading in order	Name of Item
5	+.766	Talks eagerly to adults about his own experiences and what he thinks.
35	+.766	Is eager to inform other children of the experiences he has had.
33	+.764	Likes to talk with or socialize with the teacher.
39	+.650	Asks many questions for information about things, persons, etc.
48	+.643	Is generally a happy child.
45	+.604	Is wanted as a playmate by other children.
30	+.567	Welcomes changes and new situations; is venturesome, explores, and generally enjoys novelty.
9	+.533	Is confident that he can do what is expected of him.

FACTOR II: Donald Duck, irrepressible, excitable, uncontrolled
Variance: 12.00%

Item No.	Loading in order	Name of Item
18	+.786	Responds to frustration or disappointment by becoming aggressive or enraged.
26	+.777	Is often quarrelsome with classmates for minor reasons.
36	+.729	Emotional response is customarily very strong; over-responds to usual classroom problems, frustrations, and difficulties.
16	+.724	Has little respect for the rights of other children; refuses to wait his turn, usurps toys other children are playing with, etc.
10	+.639	Is jealous; quick to notice and react negatively to kindness and attention bestowed upon other children.
42	+.636	Responds to frustration or disappointment by becoming sullen, withdrawn, or sulky.
23	-.614	Is even tempered, imperturbable and rarely annoyed.
40	-.601	Usually does what adults ask him to do.
44	+.547	Insists on maintaining his rights, e.g., will not yield his place at painting, or at the carpentry bench, etc.; insists on getting his turn on the slide or in group games, etc.
2	-.536	Is sympathetic, considerate and thoughtful.
19	+.518	Is excessive in seeking the attention of adults.

FACTOR III: Casper Milquetoast: Frightened and Withdrawn
Variance: 11.55%

Item No.	Loading in order	Name of Item
22	+.723	Is constricted, inhibited, or timid.
49	+.704	Approaches new tasks timidly and without assurance.
7	+.653	Often keeps aloof from others.
34	+.650	Often will not engage in activities.
46	+.631	Is lethargic or apathetic.
14	+.589	Greatly prefers the habitual and familiar.
24	+.581	Is reluctant to talk to adults.
4	+.547	Is very suggestible; lets other children boss him around.
28	+.524	When faced with a difficult task, he either does not attempt it or gives up quickly.
12	+.518	Is rarely able to influence other children by his activities or interests.
32	+.502	Is reluctant to use imagination.

FACTOR IV: Young Horatio Alger: Perseverence and hard work will win out
Variance: 11.22%

Item No.	Loading in order	Name of Item
20	-.734	Sticks with a job until finished.
13	-.719	Tries to figure out things for himself.
11	-.717	Is methodical and careful in tasks.
25	-.694	Works earnestly at his classwork or play.
21	-.641	Goes about his activities with a minimum of assistance.
15	-.561	Appears to trust in own abilities.
43	-.506	Demonstrates imaginativeness and creativity in use of toys and play materials.