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A qualitative analysis of Bilalian children's error pattern on the PPVT-R

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A QUALITATIVE ANALYSIS OF BILALIAN CHILDREN'S ERROR PATTERN ON THE PPVT-R

An Abstract of a Thesis

Submitted

In Partial Fulfillment

of the Requirements for the Degree

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ABSTRACT

The purpose of this study was to analyze the errors made by four year old Bilalian (Black) children to the stimuli which comprise the Peabody Picture Vocabulary Test - Revised (PPVT-R) in order to generate possible explanations for the children's preferred ("incorrect") responses in terms of language patterns and reasoning processes. Standardized administration procedures were disregarded; testing with each of the 21 children began with Plate 10 and proceeded until six "misses" occurred within eight consecutive responses. Each error, along with the test publishers' stipulated ("correct") response and a distractor, was queried in an attempt to ascertain the reason for the child's word-picture linkage. All testing was electronically recorded. Relevant categories that emerged from the data were: experiential indicators, perceptual indicators, symbolic substitutes, stipulated responses acquired through inquiry, and invalid indicators. Findings indicate that when queried about their "errors," the children expressed logical and well-grounded reasoning ability, and that use of the PPVT-R among four year old Bilalian children as an indicator of intelligence may be doubtful.

This Study by: Carole Redfield Coffey

Entitled: A Qualitative Analysis of Bilalian Children's Error Pattern on the PPVT-R

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DEDICATION

This thesis is lovingly dedicated to my parents, Jerry and Velma Redfield, for the love, encouragement, and acceptance that they have given me throughout my lifetime and especially during the writing of this manuscript.

To my son, Gerald Alvin Coffey Jr., whose patience, love, and wisdom have been a source of strength.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	viii
LIST OF FIGURES	ix
CHAPTER	
1. INTRODUCTION	1
The Testing Controversy	2
IQ: A Measure of Intelligence or Access	5
Related Issues	8
Standardization Populations	8
Educational Placement	9
Purpose of the Study - Statement of the Problem	10
Research Questions	11
Significance of the Study	11
Limitations of the Study	12
Definition of Terms	13
Bilalian	13
Economically Exploited	14
Preferred Response	14
Stipulated Response	14
2. REVIEW OF THE LITERATURE	15
The Beginning of Intelligence Testing in America	15
Heritability of Intelligence: Empirical Base	16
IQ and Racial Characteristics	16
Transmigration Studies	17
Monozygotic (MZ) Twins	19

Page

Heritability of Intelligence: Theoretical

Explanation 21

Conclusions 22
Criticisms 23

The Cultural Deprivationist Explanation 24

Maternal Language Interaction Patterns 24
Paternal Absence 25
Unenriched Backgrouns 26

Language Studies: An Environmentalist

Explanation 28

Pygmalion in the Classroom 30
Conclusions 32
Criticisms 32

The Cultural Difference Explanation 33

Empirical Studies 34
Redefining the Social Situation 35
Conclusions 36
Criticisms 37

Summary 37

3. METHODOLOGY 39

Theoretical and Methodological Framework: A

Dual Vision 39

Quantitative Methodology 40
Qualitative Methodology 40

Methodological Framework 43

Gaining Access 43
Presentation of Self 44
The Research Site 46
Time 47
Participants 47
Test Materials 47

Page

Modification of Procedures 51
Item Analysis and the Effect Upon Derived Scores 52
Conclusions 55
Procedures 55
Data Gathering 56
The Unstructured Interview 56
Retention and Retrieval of Interview Data . . . 58
Generation of Categories 59

Categories and Their Properties 64

4. SUBSTANTIVE CATEGORIES 66

Experiential Indicators 67
Discussion 68
Summary and Interpretations 81
Perceptual Indicators 82
Discussion 83
Summary and Interpretations 93
Symbolic Substitutes 94
Discussion 94
Summary and Interpretations 102
Invalid Indicators 103
Discussion 103
Stipulated Responses Acquired Through Inquiry . 104
Discussion 104
Summary and Interpretations 113

DISCUSSION AND IMPLICATIONS 115

REFERENCES 120

APPENDIXES 131

A. Letter to Head Start Director 131

B. Letter to Parents 132

C. Follow-up Letter to Parents 133

D. Most Frequently Missed Words 134

LIST OF TABLES

Table | Page

1. Examples of Invalid Indicators 105

2. PPVT-R Error Analysis - Most Frequently Missed Words 135

LIST OF FIGURES

Figure		Page
1.	Plate 27, Stimulus word (SW), square 4	48
2.	PPVT-R, Plate 20, SW mechanic, (2)	60
3.	Example of segmented transcription	61
4.	PPVT-R, Plate 20, SW net, (2)	68
5.	PPVT-R, Plate 25, SW cage, (2)	73
6.	PPVT-R, Plate 26, SW tool, (4)	77
7.	PPVT-R, Plate 38, SW delivering, (1)	80
8.	PPVT-R, Plate 44, SW dripping, (2)	83
9.	PPVT-R, Plate 48, SW forest, (4)	86
10.	PPVT-R, Plate 32, SW envelope, (2)	88
11.	PPVT-R, Plate 21, SW tearing, (4)	91
12.	PPVT-R, Plate 34, SW pasting, (4)	95
13.	PPVT-R, Plate 19, SW accident, (2)	96
14.	PPVT-R, Plate 10, SW lamp, (4)	97
15.	PPVT-R, Plate 57, SW mechanic, (2)	100
16.	PPVT-R, Plate 52, SW vase, (3)	101
17.	PPVT-R, Plate 16, SW feather, (1)	106
18.	PPVT-R, Plate 28, SW stretching, (1)	107
19.	PPVT-R, Plate 35, SW patting, (1)	108
20.	PPVT-R, Plate 30, SW tying, (2)	109
21.	PPVT-R, Plate 37, SW sewing, (2)	111
22.	PPVT-R, Plate 67, SW disagreement, (1)	112

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CHAPTER 1

INTRODUCTION

The purpose of this study was to analyze the errors made by 4 year old Bilalian children to the stimuli which comprise the Peabody Picture Vocabulary Test - Revised (PPVT-R) in order to ascertain whether the children's explanations of their own choices could provide an insight into whether the error was a function of faulty knowledge, faulty reasoning, faulty test construction, cultural differences, cultural deprivation, socioeconomic factors or any other discernable pattern. Were children not judged to be educationally different on the basis of standardized measuring devices, there would be no need for such a study. Were judgments about native capacities for learning not similarly made, there would again be no need for such a study. However, as will be documented in this paper, such judgments are made and the consequences are of extreme importance.

In this first chapter, the reader will find an introduction to the testing controversy, an overview of the prevailing interpretations of intelligence tests as they relate to the observed performance differences between various ethnic and racial groups, a summary of test standardization problems and a review of educational placement issues. The chapter ends with a statement of the purpose of the study, its research questions, its importance, and its limitations.

The need for this study is based upon a firm belief that children are very complex and only by dealing with their multi-faceted complexity

can their behavior in a testing situation be meaningfully related to their academic, social, or personal performance. The exposition of this complexity starts with an overview of the controversy surrounding the discrepancy between the test performance of various groups and the interpretations of the meaning of those discrepancies.

The Testing Controversy

The generalized observation that there is a definite and positive relationship between the scores which students obtain on intelligence tests and their familial social status or cultural background has existed since the latter part of the nineteenth century (Eells, Davis, Havighurst, Herrick & Tyler, 1951). The observation has spawned a multitude of postulations and theories, been the product of voluminous scientific writings, and has created more hot air than Puff the Magic Dragon. Whereas the focus of the debate has changed with the passage of time, the substantive phenomena being observed--group differences--has not been altered.

The current controversy concerning standardized testing, and in particular the applicability of such tests for the Bilalian (Black) child, especially those from the economically exploited strata, has intensified in recent years (Hillard, 1977; Reschley, 1978; Samuda, 1975). Perhaps the most fundamental, but frequently ignored, issue in both current and previous debates of intelligence tests, is the use of such tests as part of a system for the allocation of social opportunities (Reschley, 1978; White, 1977). Williams (1974), Samuda (1975),

Stamples (1976), and Lawler (1978) have expressed a profound conviction that the discrepancy in performance scores between the economically exploited Bilalian child and his economically exploited Caucasian age mates has been interpreted to demonstrate the inferiority of the former child. These inferences have led to differential treatment, in school or on jobs, that has constituted a denial of opportunity.

Williams (1974) states that historically, when one group of people has wished to subjugate or exploit another group, the "superordinate" group has dehumanized the "subordinate" group by ascribing derogatory characteristics to them. Terms such as animalistic, savage, emotional, over-sexed, lazy, unscrupulous, and crazy, have been a few of those used. It was also necessary to impugn the subjects' ability to determine their own destinies. The Bilalian-Caucasian IQ controversy presents an analogous situation. When a people is labeled consistently as being of low-intellect, the rights to life can and will erode to nothing. Whereas Black (1971) asserts that the data derived from the administration of, and research with, intelligence tests may not be a cause of racist attitudes but rather a pervasive and convenient reinforcer of previously established negative attitudes towards Bilalian people, Kamin (1974) has similarly written,

> the I.Q. test in America, and the way we think about it, has been fostered by men committed to a particular social view. That view includes the belief that those on the bottom are genetically inferior victims of their own immutable defects. The consequence has been that the

> I.Q. test has served as an instrument of oppression against the poor--dressed in the trappings of science, rather than politics. (pp. 1-2).

Ladner's (1977) assertion that labels become psychologically harmful badges when attached to an individual and that the effects remain even if the label is removed at a later point in time, provides a telescopic view of the highly functional impact of the labeling process. Proponents of Ladner's position (Lawler, 1978; Mercer, 1973; Williams, 1974) suggest that the labeling process and its legitimization through the manipulation of statistical data serves to further alienate the Bilalian and legitimize the economic and political status quo. The labeled child is made to feel responsible for his/her failures. Blaming the victim results in a negative self-concept which may influence future undertakings, self-esteem, and subsequent relationships and accomplishments (Wright, 1975).

Finally, IQ test scores are powerful instruments in shaping teacher expectations (Rosenthal, 1973), educational curricula (Mercer, 1971), future opportunities (Simmons, 1980), and life experiences (Williams, 1974; Wright, 1975). In other words, the IQ test score assimilates a "gate keeping effect" which is the chief element in retarding the social mobility of the Bilalian and limiting his/her share in the opportunities proffered by society (Samuda, 1975).

> Intelligence tests are nothing but updated versions of the old signs down South that read "For Whites Only." Thus, we now have the reinforcement of racism through the prestige of science. While institutional racism

> relies on an oppressive cluster of laws, customs and practices that systematically support doctrines of superiority and supremacy; scientific racism employs a more technical discriminatory weapon, namely intelligence tests. (Williams, 1974, p. 34).

The implications of the testing controversy are indeed long-standing, complex, and multi-faceted.

IQ: A Measure of Intelligence or Access

> When you starts measuring somebody, measure him right, child, measure him right. Make sure you done taken into account what hills and valleys he come through before he got to wherever he is.
>
> - To Be Young, Gifted, and Black
>
> Lorraine Hansberry

Is IQ a measure of intelligence, or simply a predictor of the things that make for success in America? IQ is a symbolic representation for a mathematical construct (Intelligence Quotient) popularized by Terman in his 1916 revision of the Binet-Simon Scale (Sattler, 1974). The construct is derived by the calculation of one's mental age by his chronological age and multiplying by 100. In later years (Wechsler, 1944) proposed the idea of an IQ equivalent which is derived on the basis of a deviation score which was based on the idea of a deviation quotient. More recently IQ has been given life and has developed into an entity, interpreted as an innate capacity capable of being transmitted through the genes (Jensen, 1969).

Despite the use of research into, and the construction of "intelligence tests" there is neither consensus among psychologists regarding a definitive statement of what intelligence is, nor a single acceptable method of measuring it (Adler, 1979; Barnes, 1972; Williams, 1971). The complexity surrounding the lack of a unified and precise definition was readily seen at a 1921 symposium of thirteen of America's most renowned psychologists, who, when asked for a definition of intelligence gave thirteen different answers (Sattler, 1974).

Even today, educational psychologists, including Jensen, acknowledge that the conception of the phenomena labeled intelligence remains vague. Joseph (1977) classifies the definitions of intelligence according to four different descriptors: (1) biological, (2) educational, (3) faculty, and (4) empirical. Biological definitions emphasize the adjustment or adaptation of the organism to its environment. The biological definition is exemplified by the following: "Innate, general cognitive ability" (Burt, 1955). Educational definitions emphasize learning ability. Intelligence is "the ability to learn" exemplifies this position (cited in Joseph, 1977). Faculty definitions emphasize a faculty or capacity. Jensen's (1969) definitions of intelligence as a "capacity for abstract reasoning and problem solving" exemplifies this category. Empirical definitions emphasize the practical results of intelligence. Boring's "intelligence is what tests test" exemplifies this category (cited in Joseph, 1977). An enormous amount of research has been done in an effort to evaluate

the relative merit of the definitions and theoretical positions cited above (Reese & Lipsitt, 1970).

Comparison of Bilalian and Caucasian cultural life styles has generally been accomplished through psychometric (quantitative) research. However, such research comparing Bilalian and Caucasian children in terms of intelligence test scores (IQ) has never come to terms with the distinctive properties and features of Bilalian life (Cicourel, 1974).

Sociologists such as DuBois (1953) and Staples (1976) have provided extensive qualitative descriptions of the cultural knowledge and social organization that characterizes the everyday life of Bilalians. Psychometric testing procedures are devoid of such appraisals, hence the complexity and richness of the Bilalian culture has been ignored and disregarded (Baratz & Baratz, 1970; Cicourel, 1974).

The concept of intelligence on which a given test is constructed can be a basis for its validity or lack thereof (Barnes, 1972). The concept determines the kinds of behaviors tapped by the various test items. If the concept is narrowly defined it may omit behavior that is predictive of or related to performance on a given criterion. On the other hand, if behaviors not included are also related and the sample favors one group over another, then the test may well predict accurately for the one group but not for the others (Barnes, 1972).

Dreger (1960) notes that to assume that intelligence test scores derived from the academic type items used in the traditional scales

actually measure those areas of intelligence which individuals are called upon to use in real life situations is naive. Similarly, comparing the real life capacities of Bilalians and Caucasians on the basis of such instruments would be equally naive.

In summary, the distinction must be made between the symbol and the construct. Much of the research on intellectual differences between Bilalian and Caucasian children is based on differences in test scores or IQ (Deutsch, 1964; Semler & Iscoe, 1966). Thus the difference in IQ score attainments between the above-mentioned children suggests a difference in performance patterns not in innate intelligence as implied by Wechsler, Terman, and Jensen (Stodolosky & Lesser, 1967). "'Test inferiority' can not be equated with inferior cognitive ability" (Williams, 1973, p. 33).

Related Issues

Additional issues surrounding the IQ controversy are: (a) the underrepresentation of members of non-white and/or economically exploited groups within the standardization populations of intelligence tests, and (b) the disproportionate number of members of nonwhite and/or economically exploited groups within classes for the Educable Mentally Handicapped.

Standardization Populations

Samuda (1975), Williams (1975), and Lawler (1978) have reported the complete absence of Bilalian children in the standardization samples of the original versions of the Wechsler Intelligence Scales for Children (WISC), Stanford-Binet (S-B), and Peabody Picture Vocabulary

Test (PPVT). Wechsler (1944) cautioned that his adult test norms were exclusively for the Caucasian population: "We have eliminated the 'colored' [Bilalian] versus 'white' [Caucasian] factor by admitting at the outset that our norms can not be used for the 'colored' [Bilalian] populations of the United States (p. 107). Revision of the WISC failed to produce a more representative sample. Standardization of the WISC-R included only 165 nonwhite males and 165 nonwhite females. Williams (1975) questioned Wechsler's definition of nonwhites; that is, Bilalians, Native Americans, and Orientals. Mexican-Americans and Puerto Ricans were characterized as either Caucasian or nonwhite according to how the examiner perceived his/her ethnicity according to skin color. Further, the use of 330 nonwhite children to represent children of various socioeconomic levels and the cultural heritage backgrounds of 33 million minority children is suspect. Moreover, although Bilalian children were included in the restandardization of the WISC, S-B, and PPVT, their inclusion is not representative by percentage, geographical location, age, sex, or socioeconomic attainment. Further, Wright (1975) concludes that expansion of standardization samples to include students from ethnic groups having a variety of different cultural characteristics may do nothing to reverse inequities if test content remains representative of middle-class Caucasian ideals, values, and culture.

Educational Placement

The use of IQ test scores in the placement of Bilalian and children from other nonwhite and economically exploited groups, in classes for

the Educable Mentally Handicapped has recently been challenged in the courts (Diana vs. State of California, 1970; Larry P. vs. Wilson Riles, 1979). Throughout the Larry P. opinion, IQ test results were seen as the primary cause of overrepresentation of Bilalian children in Educable Mentally Handicapped classes (Oakland, 1977).

Williams (1972) found that in St. Louis during the 1968-1969 academic year, Bilalian students comprised approximately 63.6% of the school population, compared to 36.4% for Caucasian students. Of the 4,020 children in classes for the Educable Mentally Handicapped, 2,975 (76%) were Bilalian as compared to 1,045 (24%) Caucasian students. Thus, Bilalian children were being placed in classes for the Educable Mentally Handicapped about three times as frequently as their Caucasian counterparts. Scores derived from intelligence tests were the primary basis for placement. Mercer (1973) studied the social process by which a person becomes labeled as a mental retardate by the formal organizations and found about four times more Mexican-Americans and three times more Bilalians were being labeled as mentally retarded than would be expected from their percentages in the general population. Williams (1974), Samuda (1975), and Lawler (1978) contend the use of IQ test scores as a primary and/or sole variable in the educational placement of Bilalian students frequently results in and legitimizes an educational system built upon inequality.

Purpose of the Study - Statement of the Problem

The Peabody Picture Vocabulary Test - Revised (PPVT-R) is a measure of receptive language and is routinely used in the assessment

of preschool children. Dunn and Dunn (1981a) acknowledge the widespread use of the PPVT-R as a measure of receptive language and cognitive ability.

The present study examined the error response patterns of 4 year old Bilalian preschoolers on the PPVT-R. The purpose of this study was to generate an understanding of the Bilalian child's preferred responses in terms of language patterns and reasoning processes in relation to the test publishers' stipulated ("correct") answers.

Research Questions

This study addressed itself to the following questions:

1. What factors can be identified as being influential in the child's response pattern? Was the child attending to pictorial clues, remembering life experiences, and so forth?

2. Does the child, during interview, exhibit a functional or working knowledge of the concepts being queried? Does the interview elicit a taxonomy or classification system which approximates the publishers' stipulated ("correct") answers?

3. What selection patterns can be established across children and/or across "plates"?

Significance of the Study

The relationship between intelligence, language, and test performance is ambiguous. Systematic investigations of the effects of cognitive and language ability across age, sex, and/or race variables upon intelligence test performance have produced differing results

(Hardy, 1976; Hughes & Lesser, 1965; Southern & Plant, 1971). An important aspect of this problem is the common usage of standardized tests of intelligence to infer the Bilalian child's intelligence or verbal capabilities without supporting evidence that this method is adequate for the purpose (Neal, 1976; Rivers, 1978; Williams & Rivers, 1972). A need exists to describe the actual production of the testing situation rather than assume correctness or incorrectness of response patterns in order to more clearly ascertain the Bilalian child's true range of cognitive and language capabilities.

Limitations of the Study

The size and description of the sample population was a limiting factor. There were only 21 Bilalian children all of whom attended one particular Head Start site in a midwestern city of approximately 77,000 people, and whose limited economic status may be inferred from national Head Start guidelines as put forth by Royster, Larson, Ferb, Fosberg, Nauta, Nelson, and Takata (1978):

> The Head Start program was implemented in the summer of 1965 as an attempt to provide preschool educational and social services to poor and minority children. (p. 8).

Also, the limited time for data gathering and analysis necessarily limited the cross-checking of the data for saturation of the various categories. This study can only be considered a first level analysis of PPVT-R error patterns since, in the author's judgment, none of the categories were saturated. Thus, this analysis is only intended to

suggest some possible theoretical explanations of the error patterns found during testing.

An additional and consequential limitation was the author's method of inquiry. The inquiry process was frequently abrupt and incomplete. The researcher suggests that any replication of this study should attempt to fully elicit exact reasons for each child's selection of a particular stimulus picture. A need for interrogative statements which attempt to ascertain exact experiential and cognitive referents, and the visual perception bases for the child's answers is indicated by the data.

Definition of Terms

Bilalian

When a distinction need be made between racial groups, the terms "black" and "white" will not be used. The word Bilalian will refer to "black" persons. The word Caucasian will refer to "white" persons.

Bilalian is an Islamic term for people of African descent born in America, and it is used in remembrance of the African slave named Bilal, who was known for his bravery and faith. While Bilalian generally refers to Muslims of African descent born in America, it need not be used in conjunction with religion.

The author's motivation for inclusion of this referent is two-fold: first, a review of the literature accents the variegated terminology that has been assigned to people of African descent born in America. "Colored," "Negro," "Afro-American," and the like are reminders of enslavement and the lack of power that the Bilalian people

have had in determining even the most concrete aspects of their lives. Thus, the referent Bilalian embodies a direction being taken towards self-definition.

Second, although the term "black" is widely accepted as representative of the people of African descent born in America, it is this author's viewpoint that the reference to persons by "color" only serves to strengthen racial stereotypes. One need only consult a dictionary in order to perceive the negative and emotion-laden connotation associated with this term.

Quoted material employing the above-mentioned referents ("black," "Negro," and so forth) will be left intact; such terminology, however, will be followed by the more preferred term--Bilalian--in brackets.

Economically Exploited

Since concepts are terms that convey value orientations as well as perspectives of social behavior, it is important to frame concepts in terminology that is relevant to and respectful of one's social empirical reality. When a distinction need be made between socioeconomic levels, the term economically exploited will replace such euphemistic terms as "economically disadvantaged," "lower-class" and the like.

Preferred Response

Preferred response is that answer given by the child, either spontaneously or through query, by pointing or verbalization. This answer has been given no credit by the test publishers.

Stipulated Response

Stipulated response is the answer indicated by the test publishers that is necessary to receive credit.

CHAPTER 2

REVIEW OF THE LITERATURE

The observation that Bilalian children, particularly those from economically exploited groups, taken collectively, tend to score lower than their Caucasian counterparts on tests of ability is neither recent nor unique (Dobzansky, 1973; Lawler, 1978; McNeil, 1975; Mercer, 1973; Williams, 1974). Although the literature which attempts to explain the just-cited observation is voluminous, three theoretical positions appear to predominate: the heritability of intelligence explanation, the cultural deprivationist explanation, and the cultural difference explanation. A review of each explanation, with respect to definition, arguments, and criticisms follows.

The Beginning of Intelligence Testing in America

With the transatlantic migration of the Binet scales into the American psychological community in 1916, a transformation occurred in both the philosophy and the content of this test (Lawler, 1978; Kamin, 1974). Goddard and Terman, the major translators of the scales, were leaders in the eugenics movement. According to Kamin (1974), Goddard and Terman concluded that the scales provided a "fixed measure of innate intelligence. The test could thus be used to detect the genetically inferior, whose reproduction was a menace to the future of the state" (p. 6).

The Americanized Stanford-Binet was, in Terman's view, particularly useful in diagnosing "high grade" deficiency, that is, "IQ

scores" in the 70-80 range. That level of intelligence

> is very, very common among Spanish-Indian and Mexican families of the southwest and also among Negroes [Bilalians]. Their dullness seems to be racial, or at least inherent in the family stocks from which they come . . . the whole question of racial differences in mental traits will have to be taken up anew and by experimental methods. The writer predicts that when this is done there will be discovered enormously significant racial differences in general intelligence, differences which can not be wiped out by any scheme of mental culture. (Terman, 1916, pp. 91-92).

Three of the more predominant methods of ascertaining "fixed-innate intelligence" were through the study of racial characteristics, such as skin color lip thickness, the IQ scores of northern and southern born "Negroes" (Bilalians), and the study of monozygotic (MZ) twins.

Heritability of Intelligence: Empirical Base

IQ and Racial Characteristics

Shuey (1966) presents arguments on the effects of bi-racial ancestry upon the intelligence of children, and posits that other variables being equal, the achievement of higher scores on intelligence tests by bi-racial, as opposed to uni-racial, Bilalian children is suggestive of the positive effects of the former's Caucasian ancestry. Thus a positive correlation of intelligence and bi-racial ancestry would appear to support a genetic view of intelligence.

Shuey also reports a pioneer study by Strong in the attempts to correlate physical traits and intelligence among Bilalian students. One hundred and twenty-two children were divided into "dark," "medium," and "light" groups following "inspection" of their skin color. Administration of the Goddard Revision of the Binet-Simon resulted in 44.2% of the "light group" and 14.4% of the "dark group" obtaining scores in the "retarded range" (pp. 456-57). Shuey further reports that Klineberg found negligible relationships between "Negroid" (Bilalian) traits and intelligence test scores. Correlating lip thickness, nose width and amount of black skin pigment with Pintner-Patterson scores for 139 Bilalian children resulted in coefficients ranging from -.06 to -.12. These two exemplary studies can, and have been, criticized along numerous methodological considerations, such as the "inspection technique" for attaining genealogical ancestry and the lack of control of moderator variables; clearly the results do nothing to substantiate a genetic view of intelligence.

Transmigration Studies

The massive testing of recruits that accompanied World War I led to the observation that northern born Bilalian recruits tended to score higher than their southern born counterparts (Gilgen, 1979). The explanation for the superiority of the northern born Bilalians centered in the position that they had more ambition to use available educational and social opportunities because of their greater "admixture" of Caucasian blood (Shuey, 1966). Shuey concludes that these studies

neither prove nor disprove genetic theories of intelligence and have done little to enhance the literature in this area.

Boylan and O'Meara (1958) investigated the differences in performance on the Kuhlmann-Anderson and/or Primary Mental Abilities Test between northern and southern born Bilalian children. Using the student's cumulative school files, the authors tabulated test scores for 667 southern born and 1,201 northern born children. A comparison of group means revealed scores of 94.29 and 95.15 respectively. Boylan and O'Meara speculated that selective migration characteristics, such as ambition, of the southern born population may account for the similarity in attainments.

Teahan and Drews (1962) compared the test scores of 50 Bilalian children attending elementary and junior high schools in Lansing, Michigan; of this population 26 were born and educated in northern states, while the remaining 24 students were born in southern states and had lived in the North less than one year prior to testing. All students had been referred to the school psychologist for intellectual evaluation; students were judged and referred on the basis of below grade level academic progress. Administration of the WISC revealed the following full scale scores of 87.04 and 72.37 for the northern born and southern born students, respectively. A 19.55 point difference was noted between mean performance scores for the two groups, with the northern born students achieving the higher scores. Teahan and Drews indicated that their samples may not be representative of Bilalians in general, and cautioned interpretation of nonverbal scores

when "cultural deprivation" is suspected, especially with respect to the southern born Bilalian.

Monozygotic (MZ) Twins

Kamin (1974) reported that there have been only four statistically analyzed studies of separated monozygotic (MZ) twins. While numerical discrepancies exist between the IQ correlations as reported by various authors (Jensen, 1969), all studies agree that the correlation is significant. The strong correlation found in MZ studies has been used as the primary evidence supporting the postulation that IQ scores are heritable.

Burt (1972) reported a correlation of .87 for 53 pairs of MZ twins reared apart and a .92 correlation for 95 pairs of MZ twins reared together. Testing procedures and precautions taken to ensure the identical nature of these pairs was not disclosed in this article. However, despite this lack of disclosure, Burt asserted that the results obtained from these data are conclusive proof that "the concept of an innate, general, cognitive ability . . . though admittedly a sheer abstraction, is wholly consistent with empirical facts" (p. 188).

Further studies reported by Kamin (1974) and Taylor (1980) indicate the following correlations:

Table 1

I.Q. Correlations in Three Studies of Separated MZ Twins

Study	Number of Pairs	Test	Correlation
Sheilds	37	Dominoes and Mill Hill	.77
Newman	19	Stanford-Binet	.67
Juel-Nielsen	12	Wechsler-Belvue	.62

(p. 35).

In all of the studies cited in Table 1, twin pairs were sought through radio appeals asking for "identical twins brought up apart to come forward in the interests of scientific research" (Taylor, 1980, p. 79). The studies were conducted in England, Chicago, and Denmark, respectively. In all but Newman's early pioneer study, zygosity was established on the basis of blood groupings, the ability to taste PTC, color blindness, finger print patterns, and through visual inspection of such characteristics as body build, eye color, and facial features (Kamin, 1974; Taylor, 1980).

According to Taylor, to estimate the heritability of intelligence from the study of separated MZ twins, the researcher must ensure that environmental effects are held constant. The design, implementation, and resulting conclusions of the above cited studies have been questioned for the following reasons: although virtually all of the 68 twin pairs across the three studies were indeed separated in some manner

for at least some period, Taylor reports that nearly two-thirds (44 pairs) were reunited for some period prior to testing. Most of the twin pairs were reared and educated in highly similar environments. Upon inspection, Taylor found that the IQ correlation for the twins reared in similar environments is indeed high. In contrast, the IQ correlation is quite low (.50 to .60) for subsamples of those twins who were in fact reasonably separated according to the criteria of no reunions, only moderate family relatedness, and minimal similarity in social environments. In fact, "the mean intrapair I.Q. difference for reasonably separated MZ twins tends to approach that of a general population of biologically unrelated individuals reared apart" (p. 11).

Finally, much of Jensen's (1969) data are derived from the studies of Burt. However, Rose and Rose (1978) report that when the Burt studies were re-evaluated by Professor Leo Kamin and Oliver Gillie, journalist, much of the data correlations were discrepant and had been invented by Burt. Both Taylor and Kamin conclude that the heritability of IQ is not an estimatible quantity given the available methods and data. There appears to be no compelling reason to postulate the existence of any genes for intelligence.

Heritability of Intelligence: Theoretical Explanation

The review of MZ twin studies leads one to ask, what is heritability? Heritability refers to the proportion of a given trait that can be attributed to genetic factors (Deutsch, 1969; Jensen, 1969, 1973; Lawler, 1978). The theoretical construct of heritability has been used to explain the variance in IQ scores between the Bilalian and Caucasian child (Herrnstein, 1971; Jensen, 1969, 1973), When

used in the above context, heritability indicates, in the form of a number varying between 0 and 1.0, the degree that genetic make-up can account for variation in intelligence (Jensen, 1973; Samuda, 1975).

The most recent version of this argument has been detailed by Jensen (1969). Jensen (1973) contends that intelligence, as measured by standardized tests, shows substantial heritability among Caucasians from North America and Europe. Specific correlations vary according to the population under study, but a correlation in the range of .80 is generally reported in the literature (Jensen, 1969; Lawler, 1978; Samuda, 1975). Although no known methodology exists for determining IQ heritability among Bilalians, Jensen (1973) asserted that if and when techniques become available there is little reason to suspect that IQ heritability could not also be estimated for Bilalians. Even though heritability is speculative at best, Jensen contends, a priori, that the substantial heritability of IQ within the Caucasian population makes it likely that the Bilalian population's lower average "IQ" is caused by a genetic difference (Jensen, 1973; Joseph, 1977).

Conclusions

Jensen (1969) provides the reader with a comprehensive inspection of the research that afforded his conclusions. Jensen has marshalled evidence from various disciplines and researchers to support his assumptions; however, his reliance upon "twin studies," especially those researched by Burt, appears significant. The most powerful evidence for the heritability of IQ has been derived from correlational studies of identical twins separated at birth and reared in completely

separate and unrelated environments (Jensen, 1969; Kamin, 1976; Lawler, 1978; Taylor, 1980). Jensen's argument is based primarily upon the results of four such twin studies with correlations ranging from .62 through .86. The high correlations have been interpreted to evince the heritability of intelligence.

Criticisms

Various researchers (Cicourel, 1974; Deutsch, 1969; Dobzansky, 1973; Kamin, 1976; Lawler, 1978; Taylor, 1980) have criticized both Jensen's a priori form of circular reasoning and the twin studies that he has presented. First, Jensen's conclusions that the differences in standardized test scores is caused by genetic differences is based upon speculative assumptions and measurement techniques of the future (Samuda, 1975). Second, Thomas and Stillen (1972) found that Jensen has refused to acknowledge the differences in access to social opportunities that have characterized Bilalian life in America. Jensen presented the assumption that a flagrant and absolutely central fact of U. S. history can be treated as negligible in explaining differences in IQ scores (Lawler, 1978). Third, Kamin (1976), Lawler (1978), and Taylor (1980) presented evidence of unresolved procedural ambiguities in the sampling, reunion, upbringing, and reporting of the data from the studies on twins. Finally, there is no built-in correlation between IQ test scores and intelligence. The difference in and distinction between both are critical. One must distinguish between a concept and its measurement. However, Jensen uses the terms interchangeably, as if the former was synonymous with and translatable into the latter.

The Cultural Deprivationist Explanation

The cultural deprivationist explanation hypothesizes that the observed differences in IQ scores between Bilalian and Caucasian children is attributable to a combination of environmental effects (Cole & Bruner, 1971; Deutsch, 1967; Williams, 1972). Childrearing patterns and maternal linguistic behavior (Hess & Shipman, 1965); paternal absence (Deutsch, 1964); and unenriched backgrounds (Semler & Iscoe, 1963; Southern & Plant, 1971) are among the factors most commonly cited in the literature.

Maternal Language Interaction Patterns

Hess and Shipman (1965) investigated the effects of maternal language interaction patterns upon the development of cognitive skills. A total of 160 mothers representing various occupational levels were interviewed, twice in the home environment and once in a clinical situation where they were observed in structured interaction situations. Results revealed two types of family control: (a) status-oriented control, in which behavior tends to be regulated in terms of role expectancy, and (b) person-oriented control, in which behavior is mediated by the characteristics of the situation. Hess and Shipman found that status-oriented systems were prominent in "lower-class" families, whereas the person-oriented systems were more prominent in middle-class families. The authors concluded that the homes which emphasized person-oriented control would foster a greater cognitive process since more opportunities exist in such an environment for decision making on the part of the child. Although the Hess and Shipman

study is frequently cited in the literature, the method of data gathering, upon closer observation, appears suspect. The authors obtained their data from questionnaires inquiring how the mother would deal with several hypothetical situations. Perhaps a better indication of family control systems could be derived from actual observation of everyday interactions.

In a similar study, Jones (1972) interviewed mothers of school age boys who had been equated on nonverbal IQ and rated on verbal ability. Jones found that the boys with low verbal ability were from homes with a lower occupational level than the high verbal boys and that there was less mother-child interaction in these homes. As in the Hess and Shipman study, the use of reported data rather than first-hand observation appears as a limiting feature of this study.

Paternal Absence

As part of a large scale longitudinal study, Deutsch and Brown (1964) investigated the effects of environmental variables such as socioeconomic status, preschool training, and presence of the father in the home. A cross-sectional sample which included 543 urban public school children stratified by race (Bilalian and Caucasian), grade level (first and fifth), and socioeconomic status (high-medium-low) was utilized. A total of 319 Bilalian and 224 Caucasian students were administered the Lorge-Thorndike intelligence test. Deutch and Brown report significant differences in IQ scores between racial groups and between socioeconomic levels, but not between the grades. In addition, the authors report that father's presence and preschool attendance are

positively correlated with higher test performance for both groups of children. Deutsch and Brown conclude that their data on "family cohesion" and "preschool experience" represents two possible environmental modifiers of intelligence test performance that appear to account for some of the differences found between ethnic groups. "The conclusion is inescapable that the Negro [Bilalian] group is a socially deprived one, and that whatever other measures and functions are sensitive to social effects will also reflect this deprivation" (p. 34). The authors' findings of "social deprivation" and the implied relationship to cognitive deficiency does not take into account the prevalence of the extended family structure found within many Bilalian households, and this factor may be seen to limit the applicability of Deutsch and Brown's conclusions.

Unenriched Backgrounds

Southern and Plant (1971) investigated differences in intellectual and language functions of Bilalian, Mexican-American, and Caucasian students. The Information and Comprehension subtests of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI), and the vocal encoding and auditory vocal automatic subtests of the Illinois Test of Psycholinguistic Abilities (ITPA) were administered to 370 preschool and 245 kindergarten children. Southern and Plant reported that means on all variables were hierarchial with Mexican-American subjects earning the lowest scores, Bilalian subjects earning the middle scores, and Caucasian subjects earning the highest scores. The researchers asserted that the above-cited results suggest that "young children from

disadvantaged [economically exploited] backgrounds display deficient general intellectual and language abilities, which may be partly a function of their specific racial or ethnic backgrounds" (p. 265). Southern and Plant's findings must be viewed with caution, however, since no control for socioeconomic status was employed.

Semler and Iscoe (1963) utilized the Wechsler Intelligence Test for Children (WISC) and a paired-associates learning task in their investigation of learning abilities between Bilalian and Caucasian children. Subjects were 26 Bilalian and 26 Caucasian preschoolers from the economically exploited and the middle-class strata, respectively. Administration of the WISC was followed one week later by administration of a paired-associates learning task, which incorporated concrete (objects) and abstract (pictures) similar and dissimilar associated pairs. Reported findings included: mean WISC full scale scores of 82.9 and 110.5 for the Bilalian and the Caucasian children, respectively. Paired-associates tasks appeared "more difficult" for Bilalian than Caucasian children, especially on abstract tasks. Semler and Iscoe note that differences in socioeconomic backgrounds between the two groups may limit the generalizability of their findings.

The suitability of the WISC with a southern rural Bilalian population was investigated by Young and Bright (1954). Administration of the WISC to 81 Bilalian students between the ages of 10 through 13 revealed full scale scores of 67.74. The researchers questioned the validity of the WISC scores since all children within the sample appeared to be functioning effectively in their own environment, even

though the obtained scores indicated ability levels within the retarded level.

Environmentalist explanations have also been based upon observable differences between socioeconomic environments (Adler, 1979). Deutsch's Index of Cultural Deprivation is typical of research comparing Bilalian and Caucasian environments. Deutsch's index was based on five questions about patterns of family social interaction, such as how often the child ate dinner with his parents. Deutsch (1967) found that his index correlated inversely with IQ and school achievement for both Bilalian and Caucasian children, independent of social class. That is, the higher measured IQ score and level of school achievement, the lower their attained index score. However, as Cicourel (1974) notes, the combination of questions was so blatantly based upon the middle-class conception of a good home life that it provides no information at all about the ways of socializing children that are valued in the Bilalian community or the conceptual schemes that Bilalian children learn to use in everyday life.

Language Studies: An Environmentalist Explanation

John and Goldstein (1964) did an item analysis of children's responses to the Peabody Picture Vocabulary Test (PPVT). The children were 40 "lower socioeconomic" Bilalians. Three clusters of words were found to be particularly difficult: action words, words related to rural living, and words whose referrants may be rare in low-income homes. The authors thought the poor performance on the PPVT was due to a lack of opportunity to engage in active dialogue when learning labels. John and Goldstein contrasted lower socioeconomic children's

performance to their middle-class peers whom they thought received more stimulating feedback when learning word referrants. John and Goldstein contend that their results are supported by Berstein's theoretical notions regarding the difference in language use between lower socioeconomic and middle socioeconomic individuals.

D'Angelo (1950) investigated the language development of 50 Bilalian and 50 Caucasian preschool children and compared the results with those obtained on the Goodenough Draw-A-Man Test (Goodenough). Language development was assessed by analyzing the electronically recorded transcriptions of spontaneous speech productions. Findings indicated no significant racial differences in mean IQ scores as measured by the Goodenough. D'Angelo reported, however, that more "mature sentence types" including longer utterances were more often found within the Caucasian verbal productions; "immature sentence types," including incomplete sentences and functionally complete but structurally incomplete sentences, and functionally complete but structurally incomplete sentences were more often found within the Bilalian verbal productions.

The works of Bereiter and Englemann (1966) are based upon cultural deprivationist language studies such as those cited above. In their research with 4 year old Bilalian children, Bereiter and Englemann reported that the children's communication was by gestures, single words, and a series of badly connected words or phrases, such as "Me got juice." Bereiter and Englemann's empirical findings have produced sharp criticism from sociolinguists (Baratz & Baratz, 1970; Dillard, 1972; Labov, 1969, 1970, 1972).

The research by sociolinguists (Baratz, 1974; Labov, 1970; Williams & Brantley, 1975) has clearly documented that black (Bilalian) dialectical language has all of the characteristics which define complex language structures. Classification of phrasing, such as "Me got juice," as illogical, is puzzling to Labov (1970). The phrase is logical unless one interprets it to mean "the juice got him" rather than "he got the juice." If, on the other hand, the child means "I got the juice," then this sentence form shows only that the child has not learned the formal rules for use of the subjective form I and the oblique form ME (Labov, 1972).

Pygmalion in the Classroom

In considering the theoretical bias of deprivationist theory, the works of Rosenthal are pertinent. Rosenthal and Jacobson (1968) selected an elementary school in a "lower-class" neighborhood and administered a nonverbal intelligence test to all of the students. Eighteen classrooms participated with three classes at each grade level from first through sixth. School records indicated that each class was heterogeneously grouped with children of below-average, and above-average ability. After testing, 20% of the students from each class were randomly selected and labeled "intellectual bloomers." The researchers provided each teacher with a list of the bloomers and the teachers were informed that these children could be expected to show remarkable academic gains during the coming school year. No other form of intervention was provided. Testing occurred eight months later. Results showed that the bloomers made an overall gain of four IQ points

in excess of the gain demonstrated by the control group. Moreover, gains were noted regardless of ability level; that is, gain score increases were obtained by children termed less able as well as for the high ability children. Thus, Rosenthal and Jacobson concluded that teachers' expectations were influential in producing gain scores and that these expectations benefited children from all levels. The possibility that teacher expectations might be a factor in differential pupil learning has been questioned since; attempts to replicate the Rosenthal and Jackobson study have failed to produce similar results (Persell, 1977).

Williams, Whitehead, and Miller (1971) investigated the degree to which visual cues to a child's ethnicity will influence judgments of a standard English speech sample. Four videotapes of a Bilalian, a Mexican-American, and two tapes of a Caucasian child were presented to 44 undergraduate education majors. Each tape was a 90 minute segment showing a side view of a child assembling a plastic model car. The child was describing his actions and discussing what he would do with his new car. Two "ethnic guise" tapes of each of the minority group children were prepared by using the audio tracks from the tapes made by the Caucasian children. Thus, for each of the Bilalian and Mexican-American children's videotapes, there was his original version, then two additional versions each with one of the Caucasian children's audio recordings dubbed in. Each subject viewed three tapes: a Bilalian or Mexican-American child's tape with dubbed-in audio track, a Bilalian or Mexican-American child's tape in original form, and a

Caucasian child's tape. Videotape ratings were secured by means of a semantic differential scale, devised by the authors. The results showed that the "ethnic guise" audiotapes when paired with the videotape of a Bilalian or a Mexican-American child were rated more nonstandard and ethnic than when paired with a Caucasian child's videotape. Williams, et al. concluded that the videotape image showing the child's ethnicity affected rating of his language in the direction of racial stereotyping expectations. The studies cited above demonstrate the self-fulfilling prophecy; that is, expectation alone can influence the behavior of others. The self-fulfilling prophecy phenomena when used in conjunction with the lack of first-hand knowledge about and investigation of the Bilalian child may help to account for the cultural deprivationist bleak predictions for the Bilalian child.

Conclusions

There was very little in the research literature derived from the cultural deprivationist explanation that was complimentary to the Bilalian child. Environmental effects, such as maternal behavior, paternal absence, and so forth, have been suggested as influencing IQ test scores. Both the argument and its concomitant data bases are questionable at best, and present a biased perspective (Baratz, 1974; Labov, 1970; Williams, 1972).

Criticisms

Exploitation of cultural background knowledge such as that obtained by Deutsch's index has been criticized by Cicourel (1974). A high

score on this index is supposed to show deprivation of opportunities in which abstract abilities and a broad world-view might have developed. However, Deutsch entirely ignores the fact that the children who scored high on the cultural deprivation index are able to give an account of their lives that extends deep into the past. These accounts may well be the equivalent in abstractness to that of the children who score low in the cultural deprivation factor. In general, the use of reported data (interview scales) rather than first-hand observation, implications drawn from Caucasian middle-class life styles and applied to the Bilalian child, and the lack of control for socioeconomic variables within many of the reported studies appears to restrict and limit the use of these findings to the Bilalian child.

The Cultural Difference Explanation

> The cultural difference explanation maintains that differences noted by psychologists in intelligence testing, in family and social organization, and in the studies of the black [Bilalian] community are not the result of pathology, faulty learning, or genetic inferiority. These differences are manifestations of a viable and structured culture of the black [Bilalian] American. The difference model also acknowledges that blacks [Bilalians] and whites [Caucasians] come from different cultural backgrounds which emphasize different learning experiences necessary for survival. Thus, to say that the black [Bilalian] child is different from the white

> [Caucasian] child is not to say that he is inferior, deficient, or deprived. One can be unique and different without being inferior. (Williams, 1973, p. 34).

The basic assumption of the cultural difference explanation has been that regardless of ethnic origin, children are similar in their basic needs; yet, distinctive cultural patterns remain.

Empirical Studies

Lesser, Fifer, and Clark (1965) examined the patterns among various mental abilities in young children from different social-class and cultural backgrounds. The patterns among five mental abilities (verbal ability, reasoning, number facility, word fluency, and spatial conceptualization) were studied in first grade children from four cultural groups in New York City (Bilalian, Chinese, Jewish, and Puerto Rican), with each cultural group divided according to socioeconomic levels. It was concluded from the findings of this study that social class and ethnic group membership have strong effects upon the level of each of these five abilities; that is, each ethnic group studied evidenced a different pattern of mental abilities, while social class status affected the level of scores across the mental abilities scale. In commenting upon Lesser, et al., Oakland (1977) notes that the distinction between the effects of ethnic group membership and the effects of socioeconomic level upon cognitive patterns is an important one. The difference explanation is represented by a number of linguists and sociolinguists who have done extensive studies of divergent language patterns.

Baratz (1970) assessed the language development of a group of 5 year old Bilalian Head Start children. Speech responses to photographs depicting daily life situations and the Children's Apperception Test (CAT) were analyzed. Baratz compared her data with examples of restricted and elaborated codes and concluded that the language acquisition and development of her sample were neither delayed nor illogical.

Anastasiow (1976) administered a sentence repetition task to 210 inner-city Bilalian grade school children. Results showed that the children altered the sentences to conform to the regularities of their dialect. Further, the children tended to reconstruct fewer words as they advanced in grade. Anastasiow concluded that although the children did in fact change the sentence form to conform to their own language, the sentence meanings were intact.

Sentence repetition tasks were presented to both Bilalian and Caucasian children by Genshaft and Hirt (1974). The sentences were presented to both groups of children in "standard" and "black dialectical" English. Results indicated that on standard English sentence presentations, both Bilalian and Caucasian children performed equally well. On sentence presentations in black dialect, however, the Caucasian children performed significantly worse.

Redefining the Social Situation

Labov (1970, 1972) marshalls convincing evidence to substantiate his ascertain that black (Bilalian) vernacular language patterns are logical and systematically structured. One example of Labov's

approach was to conduct a standard interview with Bilalian grade school children. Although the interviewer was a familiar neighborhood local, the 8 year old interviewee's verbal behavior is terse and often monosyllabic. Since the interview occurred under relatively favorable conditions (familiar location and familiar interviewer) the child's responses are somewhat baffling. A second interview was conducted with the following procedural changes: the interviewer brought along potato chips and one of the child's best friends, taboo words and subjects were introduced. Labov reports that under these conditions the nonverbal child is competing with his friend and with the interviewer to talk. Labov concluded that standard tests will not come anywhere near measuring the above child's verbal capacity and that the social situation is a powerful determinant of verbal behavior.

Conclusions

The cultural difference explanation was the first step away from a deprivationist interpretation of the test score differences between Bilalian and Caucasian children, and, as such, stood in stark contrast to the environmentalist studies of language outputs and the ensuing inference of the diminished cognitive ability of the Bilalian child. The studies of sociolinguists, such as Baratz and Labov, predominate this explanation and assert that the dialectic language patterns used by many Bilalian children were indeed a logical and legitimate means of communication. As Persell (1977) similarly concludes, differences in language do exist but whether these differences reflect inferiority

or results in cognitive deficits can not be inferred from any of the existing research data.

In addition to being accepted as a legitimate means of communication, the black (Bilalian) vernacular language has been cited for its creativity and fluency. Clever verbal games and creative verbal rituals such as "playing-the-dozens" and "signifying" are an integral part of the culture of many Bilalian children (Kochman, 1972; Somervill, 1974; Williams, 1971).

Criticisms

Valentine (1971) has argued that if one accepts the assumption of cultural uniqueness or difference, then the collective behavior of the Bilalian community is more bi-cultural than different since socialization into both the dominant culture and the Bilalian culture occur simultaneously. However, Valentine's position of bi-culturalism has received counter-criticism as being an up-dated version of assimilationist theory (Joseph, 1977).

Summary

Representative research from each of the three predominate theoretical interpretations explaining the differences between Bilalian and Caucasian children's scores on intelligence tests has been presented. Although the studies within each interpretation have been utilized as proof of the correctness of their position, oversights, which limit the applicability of each position, can be found. Thus, as Cicourel (1974) concludes, the truth or falsity of the interpretations put forth by those espousing either a heritability of intelligence,

cultural deprivationist, or cultural difference viewpoint can not be demonstrated merely by finding that the observed data support the expected conclusions.

CHAPTER 3

METHODOLOGY

In this chapter, the conceptual basis for the research strategy employed, the procedures for gaining access to the children in the study, the research site, the testing materials, the data gathering and interview procedures, the process of deriving organizational categories and their properties are sequentially presented. Readers who are already familiar with the methodology of qualitative research may omit the sections on qualitative methodology and begin with the section on gaining access to the children.

Theoretical and Methodological Framework: A Dual Vision

Among social researchers in general there exists no one best methodological approach to the study of social phenomena. Frequently in assessing methodlogical approaches a duality is posited between quantitative and qualitative methods. "Quantifiers" are juxtaposed against "describers"; "hard data" are positioned against "soft data"; the dichotomies are virtually endless. Rist (1977) suggests that this manner of polarization masks and reduces the complexities and nuances of each research approach. Moreover, the "dialectic and interaction among all efforts to know and understand are obscured" (p. 42).

According to Morris (1977) the manner in which a researcher approaches the investigation of the empirical social world is to a great extent dependent upon her/his particular philosophical view of the social world and human nature. Further, Denzin (1970) stated

that each method reveals peculiar elements of symbolic reality and accentuates one aspect of that reality rather than another.

Quantitative Methodology

What strategies are endemic to the quantitative and the qualitative methodological approach and how does application of a particular set of techniques affect the researcher's perception of social reality and symbolic meaning? Quantitative methodology seeks to apply an underlying empirical standard to a social phenomenon (Cole, 1976; Rist, 1977). The researcher employing quantitative techniques, typically, defines a problems, states a hypothesis, selects an appropriate research design to test the derived hypothesis for significance, and discusses the results within a suitable theoretical framework.

The theoretical constructs derived in the quantitiative manner are intended to "fit" reality. However, the typical researcher has little primary or first-hand knowledge about the empirical world he investigates; therefore, his resulting conclusions frequently are based upon preconceived or stereotypical images and notions (Blumer, 1970). Thus the quantitative researcher's perception of social reality and symbolic meaning may very well be at odds with meaning(s) assigned by members of the world under study.

Qualitative Methodology

Turning towards the qualitative approach one finds that the emphasis is quite different. Qualitative methodology is designed to gain access into another's life-world. Filstead (1970) observes that qualitative methodology allows the researcher to get close to the data,

thereby letting the data speak for itself. Through use of the qualitative approach one seeks to obtain first-hand knowledge about the empirical social world under study and to discover the day-by-day routines and rituals of its members (Cole, 1976).

Numerous methodological strategies have evolved within the qualitative approach--participant observation, life history construction, and unstructured interviews--to name a few (Bogdon, 1972). These activities are cast in a framework which reveals the motives and meanings within the context of the actor's daily life (Schwartz, 1979). Schwartz also contends that qualitative methodologists' efforts to reconstruct reality have their theoretical underpinnings within the framework of symbolic interaction. The basic tenet of symbolic interaction is that social phenomena can best be understood from the actor's definition of the situation. Thus, symbolic interaction seeks to know how the individual involved perceives and interprets social reality and how this interpretation shapes his behavior. In order to accomplish this feat of knowing, the researcher must go beyond a surface understanding of the situation and attempt to place himself in the other person's shoes (Blumer, 1970).

The qualitative researcher thus seeks to interact with, observe, and engage in the social environment under study. It is through this direct involvement that the researcher attempts to reconstruct the actor's reality and bring forth the meanings which the actor has conferred upon the situation.

One of the major attempts to systematize qualitative methodology was the "grounded theory" approach as put forth by Glaser and Strauss (1967). Basically, "grounded theory" is the "systematic discovery of theory from the data of social research" (p. 2). The data gathered from the ongoing social setting provide the underlying structure of theory. From these data are generated categories which will appropriately reflect and explain the aspects of the situation under study.

Categories stand by themselves as conceptual elements of a theory while properties are conceptual elements or aspects of a category (Glaser & Strauss, 1967). Both categories and properties are concepts indicated by the data and not the data itself. Categories are neither mere labels nor the actual behaviors; although they acquire some level of abstraction, they are to be representations of behavior (Glaser & Strauss, 1967). Inspection of the data begins by coding each incident in the data into as many categories of analysis as possible. Initial coding attempts generate theoretical notions. Glaser and Strauss stress the constant comparison of each new incident included in a category "with the previous incidents in the same and different groups coded in the same category" (p. 106). This constant comparison of incidents soon starts to generate theoretical properties of the category; that is, the full range of "continua of the category." This stage of category and property generation is emphasized in this research.

Methodological Framework

Gaining Access

Bogdon (1972) states that while there appears to be differential access to organizations, the new researcher is often very surprised as to how accessible most organizations are. Similarly, there is no prescription for finding the correct entry into a new community. Frequently the researcher can count on a chain of introductions which leads at least to the threshold of his group (Paul, cited in Cicourel, 1964). This researcher not only realized easy entry, but also experienced genuine support, encouragement, and guidance during both the entry and data gathering phases of this research.

Entry was essentially accomplished in two phases. First, after analyzation of this author's research proposal and design with the researcher's thesis committee and other professors, various testing sites were discussed. The feasibility of conducting and concluding the research at a particular site was judged accordingly: administrative willingness to participate in a study, availability of subjects, assurance of parental consent, and geographical accessibility. A local Head Start center satisfied all of the above criteria.

Phase two was initiated by telephoning the center's director, informing her of my background and research questions, and my reasons for desiring to include her students in this study. The director was friendly, knowledgeable of similar work in the field, and tolerant of my nervousness. We concluded this initial conversation by scheduling

a meeting for further discussion and clarification of the topic at hand. During our next meeting, expressed areas of concern centered around confidentiality of test results, procedures for securing parental permission for testing, and the availability of the completed thesis to faculty and administrative personnel. Practical considerations included the amount of time students would be involved in testing and the selection of students for inclusion in the study. This latter detail was executed through random selection of students for participation from the entire population available. Copies of the letter of introduction, the original letter to the parents, and a follow-up letter (to the parents) are contained in Appendices A, B, and C, respectively.

Presentation of Self

As previously stated, qualitative methodology refers to those research strategies which allow the researcher to obtain first-hand knowledge, to become close to the data under investigation. This process necessitates intimate involvement of the researcher. The actual substantive roles the researcher chooses obviously vary with the research purposes and setting (Cicourel, 1964). In this study the researcher's role and intentions were explained at the outset of the investigation.

My role as a researcher involved essentially two lines of communication: indirect contact and direct contact. Indirect contact was established with administration, staff, parents, and auxiliary

personnel. This contact was instrumental in gaining entry, facilitating rapport, and obtaining permission to test. In all lines of indirect contact, the researcher presented herself as a student researcher which Lofland (1971) labels as "socially acceptable." After an initial warming period, this author found acceptance of the research project, genuine interest, and an attitude of helpfulness indicative of the individuals cited above. For example, in classrooms where the initial return of parental permission slips was moderate, teachers voluntarily made follow-up telephone calls to request their return. High parental involvement was also demonstrated. No parent refused to grant me permission to test and from the original 30 slips dispersed, only 2 were not returned.

Direct contact was established with the 21 students who participated in this research. As with the lines of indirect contact, the researcher presented herself as a student researcher to the children. However, the students tended to perceive my role as an authority figure rather than as a learner. Comments such as "Ms. Coffey is my teacher" and questions such as "Are you a teacher?," "Do you have any kids?" were frequently noted.

To be effective the researcher has to expose herself/himself to the subjects so they can become familiar with her/him, develop trust in her/him, and feel at ease in her/his presence (Bogdon, 1972). The above cited position was felt to be a necessary ingredient for more effective and efficient data collection. This procedure was also beneficial in breaking the ice and reducing test anxiety. All of the

participants were cooperative and eager "to do some work." Further, many of the children who were not chosen for participation expressed a desire to be included in the project. Two weeks were spent observing and participating in classroom routines and activities prior to testing.

The Research Site

All testing was accomplished at a local Head Start preschool site. Three different areas of the school were made available to the researcher depending upon daily scheduling demands and services provided by auxiliary personnel, such as the speech therapist or educational interns from a nearby university.

The location most frequently used was a well trafficked hallway. Two blackboards were provided to screen out disruptive visual stimuli. However, since physical activities, such as trampoline exercises and bicycle riding, were often conducted in the hallway, a high noise level was sometimes evident. Teachers and teaching assistants were cognizant of the need for a quiet atmosphere and were helpful in eliminating unnecessary traffic. A brown wooden child-sized desk and two metal chairs were also provided. The most ideal testing situation was a corner room used by the speech therapist; however, this room was often unavailable. The room was equipped with the same type of furniture as found in the hallway and proved most suitable. Testing was also done in the main office. A loudly ticking clock, ringing telephones, and frequent visitors made this a less ideal area for testing.

Time

Testing was accomplished over a five-week period from February 16, 1981, through March 19, 1981. Individual testing was done with each session lasting approximately 35 minutes.

Participants

Twenty-one preschool children from a northeast Iowa, urban Head Start site, were involved in this study. Data were collected on 11 females and 10 males, ranging in age from four years one month through four years eleven months. Further demographic data were not available to this researcher.

Test Materials

The Peabody Picture Vocabulary Test - Revised (PPVT-R) is an individually administered, norm-referenced test of receptive language or hearing vocabulary. The test was designed to be administered to individuals from 2-1/2 to 40 years of age and is available in two parallel forms, designated Form L and Form M. Each form contains five training items followed by 175 test items arranged, according to the test publishers, in order of increasing difficulty. Each test item has four black-and-white illustrations arranged in a multiple-choice format.

The score sheet of the PPVT-R contains 175 words, each corresponding to a particular page in the test booklet. The tester reads the stimulus word to the child, and the child is instructed to select from four pictures the one which matches the word. The word and the four pictures

are the stimulus inputs to the child. The child can either point to the picture of his choice, or say its number. The indication of his choice is his output. An example from the PPVT-R is provided below.

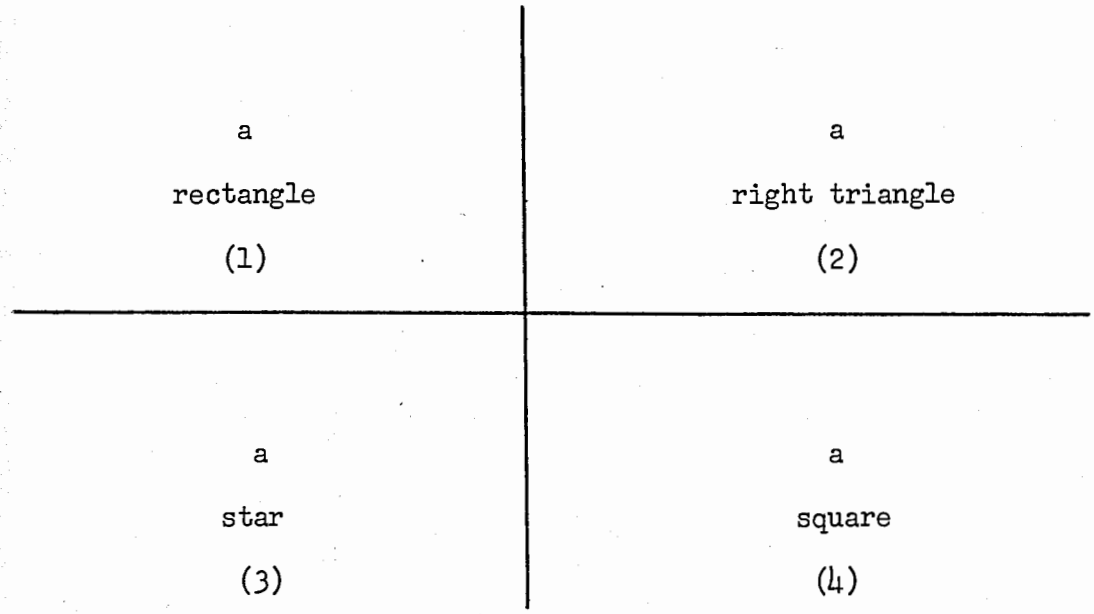

Figure 1. Plate 27, Stimulus word (sw), square 4. (Dunn & Dunn, 1981b).

PPVT-R scores are derived from raw scores and can be reported in any of the following four forms: standard score equivalents, percentile ranks, stanines, and age equivalents. Although the PPVT-R is a test of receptive language, the scores from the PPVT-R are often taken as an indication of intelligence, especially for the younger child.

Authors (Dunn & Dunn, 1981a) report that the PPVT-R was standardized on 4,200 children, ages 2-1/2 through 18 years. Ethnic representation, geographical location, and parental occupation were based on population data from the 1970 U.S. Census. Although the test's authors ensured that ethnic representation was in proportion to U.S.

Census figures, it is suspect whether 422 Bilalian and 143 Hispanic children are representative across six, age, and socioeconomic levels of members from the aforementioned groups. Moreover, the proportion of nonwhite to Caucasian subjects included in the standardization population appears to favor the latter group and underrepresent the former group. Further, the cultural diversity of the group that the authors termed Hispanic (Mexican-American, Puerto Rican, Cuban, and "other" Spanish heritage children) appears to have been disregarded by this "lumping" process.

Due to the recency of publication, research data on the PPVT-R were not available. In their revision Dunn and Dunn (1981a) have retained a similar format and testing philosophy as was found in the original PPVT. Thus it is hoped that by providing the reader with a review of related literature on the original Peabody instrument, an overall feeling for the test can be had. The following articles are concerned with PPVT validity scores of Bilalian students, the effects of item analysis upon derived scores, and the modification of testing procedures.

Validity studies. Covin (1976) investigated the suitability of the PPVT for a southern Head Start population using the Wechsler Intelligence Scales for Children (WISC) as the criterion for validity. The WISC and PPVT were administered in counterbalanced order to 37 Bilalian preschoolers. The Pearson product-moment correlation between WISC full scale and PPVT scores for all subjects was .63. Mean IQ

scores for all subjects were 63.59 for the PPVT and 70.40 for the WISC (full scale). Covin suggests that his findings are consistent with previous researchers (DiLorenzo & Brady, 1968; Milgram & Ozer, 1967), and concludes that the PPVT underestimates the IQ scores of young children such as those detailed above.

DiLorenzo and Brady (1968) compared PPVT and Stanford-Binet (S-B) scores of 563 preschool Bilalian and Caucasian children predominately (85%) drawn from the economically exploited strata. Pearson product-moment correlations revealed correlations between .78 and .79. Despite high correlations the authors found an absolute difference between means of 18.43 with the higher mean being derived from the S-B (S-B $\bar{x}$ = 93.68; PPVT $\underline{x}$ = 84.85). Also, gross differences in scores for children receiving the same raw score and similar in age were revealed. DiLorenzo and Brady (1968) note that a "44 month old child with a raw score of 28 receives an I.Q. score of 89 while a child, one month older, with the identical raw score of 28 receives an I.Q. of 76, a thirteen point difference" (p. 248).

Milgram and Ozer (1967) compared PPVT and S-B scores of 116 Bilalian Head Start students. The total sample was divided into groups of 65 and 51 children; the former group was administered each test once while the latter group was given each test twice. Mean scores for all administrations reveal lower PPVT scores ranging from a four month to a one year two month differential when compared to S-B scores. Milgram and Ozer suggest that the lower PPVT scores may

reflect a production deficiency due to "environmental insufficiency," and cognitive storage of fewer verbal items sampled by the PPVT. The authors do note, however, that PPVT procedures mask reasons for obtained errors. Milgram and Ozer conclude that "the relative inferiority of the PPVT scores to the S-B scores may reflect a pervasive linguistic and cognitive deficit which more heavily penalizes disadvantaged preschool children on the PPVT than on the S-B" (p. 784).

Modification of Procedures

As part of a larger study, Rivers (1978) investigated the performance of 200 economically exploited Bilalian children, ages six through ten, on the PPVT and modified version (MPPVT). Testing was accomplished in two phases: (1) of the total population, 100 children were randomly selected and given the PPVT according to prescribed standardization procedures. Verbal responses were elicited for items missed by at least 50% of this population. The MPPVT was constructed using the elicited responses, and (2) a second sample of 100 children was administered both the PPVT and MPPVT. Findings indicate significant differences between the effects of the two test versions on performance. Those subjects who were tested with the MPPVT performed significantly higher than those who were administered the standard version.

Ali and Costello (1971) investigated the effects of modifying the PPVT administrative procedures on economically exploited Bilalian preschoolers. The total testing population consisted of 108 subjects;

52 were administered the PPVT while the remaining 56 subjects received a modified version. The children were randomly assigned to experimental and control groups. Modification of the PPVT was accomplished in the following manner: (1) elimination of ceiling levels, all children were administered 70 randomly selected items; (2) establishment of a partial reinforcement schedule, regardless of correctness or incorrectness of response, 100, 50, and 33.3% reinforcement was given for items 1-20, 21-40, and 41-70, respectively; and (3) elimination of variable instructions by the examiner, instructions preceding each stimulus word were randomly assigned and printed on the MPPVT protocol. The total group was divided into two sample populations, consisting of 34 and 74 children, respectively, with half of each sample receiving the PPVT while the remaining children received the MPPVT. Since no significant difference was found between the two populations, the populations were combined for analysis. Ali and Costello reported a mean six month mental age difference between the MPPVT and PPVT scores favoring the former test. Results suggest that the MPPVT positively influences test scores.

Item Analysis and the Effect Upon Derived Scores

Kresheck and Nicolosi (1973) investigated whether a statistically significant difference in performance on the PPVT could be determined between Bilalian and Caucasian children when matched for age and grade level. The subjects were 50 Bilalian and 50 Caucasian children from low-middle economic status between the ages of five years six months

and six years six months. All 100 subjects were administered Form A; prescribed testing procedures were adhered. Test results indicated a mean difference of 11 points between the two groups favoring the Caucasian children. An analysis of errors made per plate indicated that some words, such as caboose, coach, and tumble were missed by a large number of the Bilalian children, 31, 28, and 23, respectively. Upon further analysis Kresheck and Nicolosi found that a large number of the children consistently chose the same picture across these and similar plates. Although the above finding appears significant, no explanations can be made regarding the children's choices, since the researchers did not question the responses given. Krescheck and Nicolosi suggest that the next logical step is to investigate the reasons underlying each response. Following such a procedure as mentioned may provide an explanation as to why the children chose each item.

Neal (1976) investigated items of the PPVT to ascertain if verbal responses to items missed indicated that the concept was familiar at the same level of abstraction as the word in the PPVT, and to determine those items on the PPVT which were missed disproportionately by either Bilalian or Caucasian subjects. Plates 10 through 85 were administered to 50 Bilalian and 50 Caucasian children. The most frequently missed items for each group were re-administered to all subjects to elicit verbal responses. Analyzation of results identified 23 words as being missed. Verbal responses of all children to those missed words indicated that the concept was familiar at the same level of abstraction

as the PPVT for 16 items and unfamiliar for 3 items. Indications of differences across race and sex were noted for the remaining four items. The findings suggest that a systematic set of criteria for assessing the appropriateness of responses to stimulus words is needed and that some of the stimulus words and pictures need to be re-evaluated.

Quantitative and qualitative differences in 79 Bilalian preschool children's knowledge of action and object words as a function of social class membership were investigated by Jerchmowicz, Costello, and Bagur (1971). All children were administered the PPVT - Form A and a task of expressive language. The expressive language stimuli were a set of pictures (one picture and two cartoon strips) for which the child was instructed to provide a story. All children were tested individually by the same Bilalian examiner, the standard PPVT protocol was employed for the former test, while the latter task was electronically recorded. Jeruchmowicz et al. findings appear significant to this present study. On the PPVT there was a significant difference between the proportion of errors on action words and object words made by the lower socio-economic group but not the middle socioeconomic group. Between group analysis indicates the lower socioeconomic group making significantly more errors than the middle socioeconomic group. The preceding findings were expected; however, the authors neither expected nor could account for the results from the expressive language task. In comparing the two groups' expressive language samples, no significant differences were found in the children's ability to orally produce

action words and object words. The implications for the present study are tremendous and suggest that regardless of test scores, the children performed conceptually in ways that were not recorded by the test.

Conclusions

The PPVT is an individually administered, norm-referenced test of receptive language. Scores from the PPVT have been extensively used as an indicator of intelligence, especially with the younger child. The studies presented in this review have primarily focused upon the Bilalian child and use of the PPVT with Bilalian children. Studies investigating PPVT validity, item analysis, and modification of procedures have been reviewed. The conclusions from the reported research indicate that PPVT validity is suspect among children from lower-income Bilalian families, modification of administrative procedures will positively influence score attainments, and standard PPVT procedures may mask full ability of the younger Bilalian child, especially those from the economically exploited strata.

Procedures

Although each child had been previously exposed to the interviewer, some time was spent before testing to familiarize the child with the testing situation; to ascertain background information, such as address, siblings, favorite toys, and to minimize the effects of taping by having the child hear her/his own voice.

Test directions were standardized according to published guidelines (Dunn & Dunn, 1981a). Plate number 10 was the starting point for

all children. When a child did not give the test publishers' stipulated ("correct") answer, she/he was questioned about her/his preferred ("incorrect") answer. Questioning also elicited information regarding the stipulated answer and a distractor. A ceiling was established with six errors out of eight consecutive questions.

Data Gathering

The main purpose of the transcript analysis was to show that the children exhibit intelligent, conceptual performances involving background knowledge that is not measured by the recording devices and measurement procedures provided by the standardized test itself. This researcher generalized that regardless of test scores, the children would perform, conceptually, in ways that were not recorded by the test. The discussion of stipulated ("correct") and preferred ("incorrect") answers with the children is hypothesized to indicate that the children have understandings of test items far in excess of those indicated by their test scores.

The Unstructured Interview

As previously stated, the aim of qualitative research is to understand the real world from the perspective of the subjects under investigation. The essence of the qualitative research approach is to describe subjective meaning.

The techniques used for deriving subjective meaning from the empirical world are dependent upon the researcher's goals and the social context under observation. The unstructured interview was most consistent with the researcher's goals and the social phenomena under

investigation. The researcher using the qualitative method formulates generalized questions which guide his search, but has no preconceived notions of what he expects to find. The interviewer does not know in advance which questions are appropriate to ask, how they should be worded so as to be non-threatening or unambiguous, which questions to include or exclude to best learn about the topic under study. The answers to these problems are seen to emerge from the interviews themselves, social context in which the interviews are conducted, and the degree of rapport established (Schwartz, 1979). In short, appropriate or relevant questions are seen to emerge from the process of interaction that occurs between the interviewer and interviewee.

Lofland (1971) feels that success is contingent upon the skill and sensitivity of the interviewer; that is, successful interviewing is dependent upon the existence of social competence. Successful interviewing is not unlike carrying on unthreatening, self-controlled, supportive, polite, and cordial interaction in everyday life. Schwartz takes issue with Lofland, stating that interpersonal skills may be a necessary but not sufficient condition. Schwartz suggests that the following factors are influential: (a) the degree of knowledge and of familiarity with the respondent's life style, culture, and ethnic customs, (b) co-membership with the respondent in certain social categories, such as race, sex, personality type, and so forth, and (c) elusive characteristics arising out of the social context that defy categorization.

In any kind of interview the respondent may not always say what he means or mean what he says. However, unlike structured interviews, in the unstructured interview the interviewer is face-to-face with the respondent and has the advantage of being able to read nonverbal cues or re-direct his line of questioning. In short, this face-to-face interaction lends itself to a greater degree of feedback, which can be used as a way of evaluating the status of the respondent's accounts. Schwartz emphasizes that when all is said and done, the unstructured interview is one of the best methods available for evaluating the current intentions and behaviors of others.

Retention and Retrieval of Interview Data

Retaining and retrieving the information that the interview provides are essential in order to categorize the data and establish theoretical propositions. The researcher engaged in qualitative research basically has three modes of retrieval at his disposal: memory, fieldnotes, and electronically recorded observations. The researcher's decision to utilize either method will ultimately be influenced by the setting and the individuals under observation. The researcher must weave the essence of the natural setting while obtaining an accurate description.

The observational data for this study were electronically recorded. "Tape recording allows the investigator to concentrate on the interview without distracting the respondent (or himself) by taking notes and still retain all that the respondent related" (Schwartz, 1979, p. 43).

Data collection was accomplished during 21 individually recorded sessions, with each session lasting approximately 35 minutes. A Sony cassette recorder, model TC-66 was employed.

Generation of Categories

The actual data were derived from individual testing sessions with 21 youngsters. Each session was electronically recorded and lasted approximately 35 minutes. Data collection was terminated when distinct response patterns began emerging across test protocols. The data from each electronically recorded session was first transcribed by hand and then typed. There were 120 pages of single-spaced typewritten notes, which became the basis for analysis of the error pattern derived from the PPVT-R. Initial data analysis involved reading and re-reading the transcriptions.

The generation of categories was accomplished by segmenting each transcription while leaving a duplicated copy intact for reference to the whole framework. Segmentation was done on the basis of a complete response to an individual plate. For instance, when a child made an "error," she/he was questioned regarding her/his preferred answer, the test publishers' stipulated answer, and a distractor. Thus, in each instance that the child did not give the test publishers' stipulated answer, responses were elicited regarding the conceptualization and perception of three of the four pictures on that plate. The following transcription was derived from a segmented card.

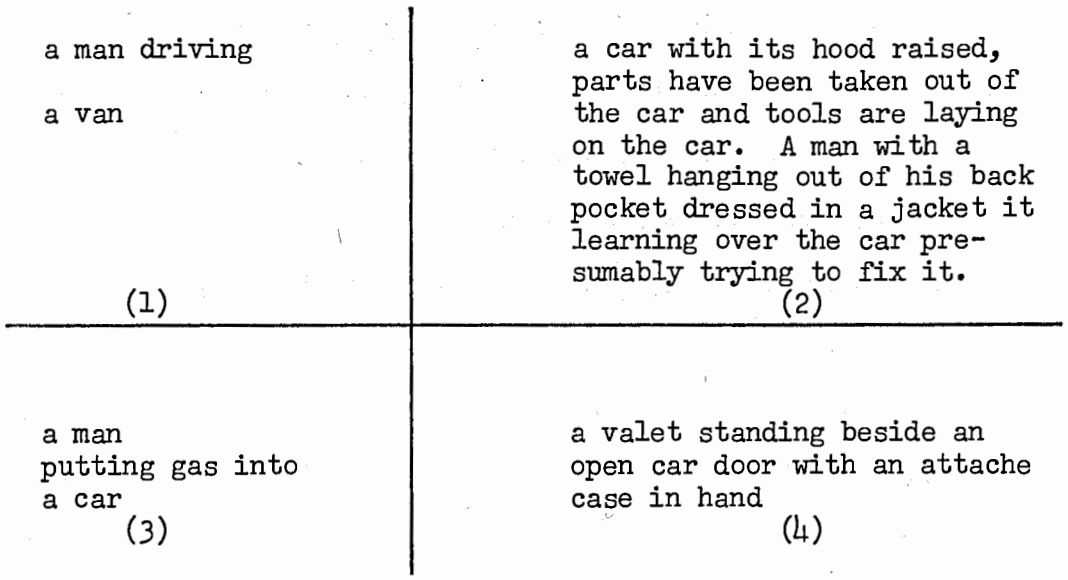

Figure 2. PPVT-R, Plate 20, SW mechanic, (2). (Dunn & Dunn, 1981b).

Researcher's query (Q): Put your finger on the picture of the mechanic.

Child's response (R): Points to picture 3

Indicating picture 3 (Q) What is he doing?

(R) Putting gas in the car.

(Q) What do we call him?

(R) A gas tank man.

(Q) Look at picture 2. Tell me about this man. What is he doing?

(R) He's putting . . . he's fixing the car.

(Q) What do we call him?

(R) A fix-it man.

(Q) Look at picture 4, what is he doing?

(R) He's putting that case in the car.

(Q) What do we call him?

(R) A case man that puts stuff in the car.

Initially the transcriptions were read while listening to the recordings from which they were derived. This process was beneficial in assuring accuracy of transcriptions and noting affective tones and verbal nuances. This process of segmenting transcriptions resulted in approximately 237 observations, each of which was bonded onto individual 5"x8" cards. Each card was coded as shown in Figure 3.

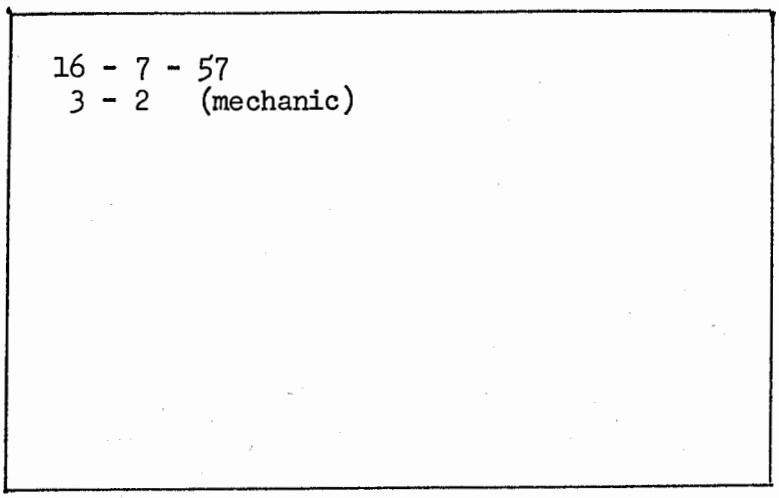

Figure 3. Example of segmented transcription.

The codes in the left hand corner carry the following meanings:

16 - subject number
7 - tape number
57 - plate number
3 - preferred answer
2 - stipulated answer
(mechanic) - stimulus word

Then, taking all 237 cards, each card was read and analyzed for similarities and differences between and across cards with regard to the meanings and phenomena that appeared to be emerging. After several "passes through" the cards, piles of like cards began forming. For

example, in Plate 20, the child was asked to identify a "net," observations a and b do refer to "netness":

(a) (Q) What about picture number ?

(R) A basket

(Q) What do you put in here?

(R) It looks like it goes to a ball you stuck this (indicating a pole-like projection) into a wall or something and then it (indicating a ball) comes in and go out.

(9-4-20 1-2 (net)

(b) (Q) Indicating picture 2, What do you do with this thing?

(R) Play basketball, like me.

(Q) What do you call this thing.

(R) A basketball hoop.

(15-7-20 3-2 (net)

These and similar observations were put into a pile which was labeled "experiential indicators."

When asked to identify a "claw," observations referring to appendages were given:

(c) (Q) Indicating picture 4, What is this a picture of?

(R) Hands.

(Q) Whose hands are those?

(R) Birds.

(10-5-45 2-4 (claw)

(d) (Q) What do we call picture 4?

(R) Um, this is what he (points to picture 3, the bird) walks on.

(Q) Do you have a name for that? What do you call that?

(R) Foot.

(11-5-45 3-4 (claw)

These and similar observations were labeled as symbolic substitutes. Both observations referred to appendages which could be synonymous with "claw."

In this manner, all cards were read through and sorted into like piles containing similar observations across both same and different numbered plates. Thus, the label "experiential indicators" contained observations from plates 18, 20, 40, and so forth.

Cards containing transcriptions with multiple possibilities were duplicated and placed into the appropriate piles. For example, observations a and b, noted above, were placed into a pile which was subsequently labeled "perceptual indicators." At the conclusion of this process, five different categories had emerged. The categories were: experiential indicators, perceptual indicators, symbolic substitutes, stipulated responses acquired through inquiry, and invalid indicators.

Next, all observations within each category were read and re-read again, looking for similarities and differences with regard to the language and thought processes. For instance, within the category perceptual indicators, the researcher looked for the different ways these observations had been perceived or misperceived. The different meanings distinguished in each category constituted the properties of the categories. Some 263 observations contained in all the categories and their properties had been sorted. Through this method of comparison

and analysis definitions of the following categories and their properties emerged.

Categories and Their Properties

The final categories and their properties are: experiential indicators, perceptual indicators, symbolic substitutes, stipulated responses acquired through inquiry, and invalid indicators.

(1) Experiential Indicators: pertains to knowledge derived from either actual or vicarious participation in events, situations, and/or activities.

Properties: (a) Accumulation of knowledge through direct experience, specific reference is made to an actual experience and/or to a similar object.

(b) Accumulation of knowledge through indirect experience. The child makes no direct reference to self, yet somehow he communicates that he "knows" what he is talking about or describing.

(2) Perceptual Indicators: pertains to response discriminations which can be accounted for through differences in visual perceptions.

Properties: (a) Labels ascribed through attention to details.

(b) Labels ascribed on the basis of visual similarities.

(c) Labels ascribed to ambiguous stimuli.

(3) Symbolic Substitutes: pertains to any equivalent, analogous, figurative, or symbolic utterance substituted for the stimulus expression.

Properties: (a) Labels which were accurate descriptors.

(b) Original labels which were descriptive of the stimulus or its functional use.

(4) Invalid Indicators: pertains to responses which demonstrate an understanding of the task, yet do not provide an acceptable alternative to the test publishers' stipulated ("correct") response.

Properties: (a) The child offers no verbal response.

(b) The child states that she/he is unable to answer inquiries.

(c) The child provides an inaccurate descriptor for the stimulus.

(d) Due to insufficient inquiry, the validity of the child's response cannot be evaluated.

(5) Stipulated Responses Acquired Through Inquiry: pertains to either spontaneous or elicited correction of the discrepancy between preferred and stipulated responses.

Properties: (a) Appropriate discussion and accurate labeling of stimuli representing both preferred and stipulated responses.

CHAPTER 4

SUBSTANTIVE CATEGORIES

In Chapter 4 the emerging categories and their properties will be presented. The analysis is directed towards ascertaining how the students linked the publishers' stimulus (inputs) with their own response (outputs). A comparison between the stimulus-response linkings that the test publishers assumed to be correct and the child's alternative linkings is the point of most importance in the analysis. The question arises that if the child's preferred alternative linkings proceed in a legitimate and well-grounded manner from the given stimulus, then, to what extent is his/her ability being masked by the PPVT-R's assumed correct link.

The possibility of "masked ability" is of great significance based on Dunn and Dunn's (1981a) description of the uses and purposes of the PPVT-R. The authors described the test as wide-ranging and multipurposeful, that is, a measure of achievement, scholastic aptitude, and a narrowly defined measure of intelligence. Although the PPVT-R was designed primarily as a measure of receptive vocabulary, it takes on the appearance of an achievement test "since it shows the extent of English vocabulary acquisition" (p. 3). Furthermore, since vocabulary is currently the best single correlate of school success and the PPVT-R measures one aspect of verbal ability--receptive language--then, according to Dunn and Dunn, it follows that the PPVT-R can be used as

a measure of scholastic aptitude. Finally, the PPVT-R's use as a narrowly defined measure of intelligence, especially with the preschool child, is based upon its measurement of vocabulary. Inasmuch as the PPVT-R is purported to provide these numerous results, accuracy in prediction would appear paramount. However, if the PPVT-R is found suspect in accurately predicating children's reasoning process, then its use may be called into question, especially as an indicator of intelligence.

The discussion within this chapter will focus upon the PPVT-R's use as an indicator of vocabulary and the subsequent use of this instrument as a narrowly defined predictor of intelligence and scholastic ability, especially among a Bilalian preschool population. The data will be discussed in the following five categories: experiential indicators, perceptual indicators, stipulated responses acquired through inquiry, symbolic substitutions, and invalid indicators. While the categories are obviously interrelated for analytical purposes, each category will be discussed separately.

Experiential Indicators: pertains to knowledge derived from either actual or vicarious participation in events, situations, and/or activities.

Properties: (a) Accumulation of knowledge through direct experience, specific reference was made to an actual experience and/or to a similar object.

(b) Accumulation of knowledge through indirect experience. The child made no direct reference to self,

yet somehow he communicated that he "knows" what he is talking about or describing.

Discussion

The use of direct experience appeared crucial in the answers of nine subjects across seven different plates. The child's application of his experience in analyzing various stimuli is seen in the responses across this category. Phrases such as "like me," and "I've seen one of these," and references to having seen other individuals perform acts or use various objects depicted in the stimulus plates, led to the formation of this category and its properties.

The transcripts of the following interviews demonstrated the child's reliance upon actual experience or direct observation in formulation of his/her response. Plates 20, 25, and 26 are presented below.

In Plate 20 the child is asked to put his finger on the picture of "net." The stimuli and the responses from two different protocols are given below.

a pressurized valve (1)	a net-like object with a long thin projection extending from the upper left (2)
a small safe, door slightly ajar (3)	a rectangular shaped thermostat found in many newer homes (4)

Figure 4. PPVT-R, Plate 20, SW net, (2). (Dunn & Dunn, 1981b).

In the first transcription the child pointed to picture three as the net. When questioned about his response, "What is that," he described and labeled the stimulus as a "refrigerator" and spontaneously talked about picture one. His description of picture two, the "net" is derived from his experience with a basketball net.

15 - 7 - 20
3 - 2 (net)[a]

Indicating picture number three

(Q) Tell me about that. What is that? What do you do with that thing?

(R) Cook. I get some milk out of it and band-aids.

(Q) Do you have one of those things in your house?

(R) For the fire. The fire it's got . . . you put some of the kool-aid in it. (The first part of his answer is in response to picture one)

(Q) Let's go back to picture number three first. Now you put what in here?

(R) Band-aids and milk.

(Q) What do you call this thing?

(R) "Mets" (somewhat indistinguishable) . . . mets refrigerator.

Indicating picture number one

(Q) You say you have one of these things in your house, too. What do you do with it?

(R) Uh, put on the wall and make the fire go out.

(Q) What do you call that?

[a]As indicated in Chapter 3, the coding which preceded each transcription is interpreted as follows:

15 - subject number
7 - tape number
20 - plate number
3 - preferred response
2 - stipulated response
(net) - stimulus word

(R) I want to talk about that (pointing to picture number two)

(Q) We're going to talk about that next, but what do you call this thing that makes the fire go out?

(R) Shoo - shoo - ray

(Q) Is that your very own name for that?

(R) Shakes head indicating yes

Indicating picture number two

(Q) What do you do with this thing?

(R) Play basketball, like me.

(Q) What do you call this thing?

(R) A basketball hoop.

The remaining responses from this segment were also interesting. Picture three was perceived as a "refrigerator." Again the child alluded to direct experience as the basis for his decision. "I get some milk out of it and band-aids," "You put some kool-aid in it." Further, the child excitedly began to describe picture one in the midst of his initial response. His response is descriptive of a fire extinguisher found in his home, "for the fire, put on the wall and make the fire go out," and he provides his own label, "shoo - shoo -ray." The visual similarity of these pictures to the child's description must be taken into account. However, the most salient feature of this transcript is the child's knowledge of all three pictures, a knowledge that is masked by the testing procedures.

In the next transcript a different child's original answer is again picture three. When questioned, "Tell me about this picture," he identified it as something that you got to put money in." Since he

was aware of the function of this object, one can only speculate as to why he termed the safe a net. He may indeed be unable to verbalize the appropriate label or since this is his first error, he may have felt somewhat intimidated by the testing process and that he must use the terminology provided by the researcher. This latter interpretation may be closer to the truth since only his first two errors followed this pattern. The child's response to picture number two, "net," indicated that it is similar to the one he has at home.

1 - 1 - 20
3 - 3 - (net)

Indicating picture number three

(Q) Tell me about this picture.

(R) You got to put money in it.

(Q) Is that the net?

(R) Yeah.

(Q) So you put money in this. Okay. What do you call this thing?

(R) A net.

(Q) A net, okay. Very good. What do you do with this net?

(R) Close it up.

Indicating picture number two

(Q) What is this?

(R) A basketball thing.

(Q) A basketball thing, okay.

(R) 'Cause I got a basketball at home.

In the preceding example the child identified the "net" according to its likeness to his "basketball thing" at home. He provided the researcher with the information that he not only has seen this net at home, he also used it when playing basketball. As in the first example, this segment is also placed in the perceptual indicator category, because of its visual similarity to the type of net with which the child is most familiar.

Of the eight children who missed plate 20, five identified the picture in terms of its appropriateness as a basketball net. A look at the interview transcripts shows that the first child has labeled and provided a function for this picture based upon his perception and experiential background. The second child also provided a label, "basketball thing" and informed the examiner of his knowledge base; that is, he knows this object to be a net "'Cause I got a basketball at home." One can infer from his statement that the child has linked his "basketball at home" to the basketball net or "basketball thing" that he used when playing basketball.

The next transcription further illustrated the use of experiential indicators. In Plate 25 the child is asked to put his finger on the picture of "cage." The stimuli and the responses from two different protocols are given below.

a four-sided barred pen or cage generally used to house small animals (1)	a triangular roofed bird house with a round opening and a long perch protruding from the front (2)
a bee covered honey frame or pen (3)	a triangular roofed dog house with an elliptical opening (4)

Figure 5. PPVT-R, Plate 25, SW cage, (2). (Dunn & Dunn, 1981b).

The next two transcripts are particularly interesting and have been cross-referenced in two categories, experiential indicators and perceptual indicators. These two segments showed how the children's perception of cage was based upon their experiential backgrounds. Each child's knowledge of cage was further substantiated during a later transcript (Plate 31) where each spontaneously identifies a bird cage.

In the first example, the child selected picture four as cage. When asked, "What do we do with that cage?" he correctly replied, "Put animals in there." He further responded, "I've got a dog," and pointed to picture four as depicting the type of cage that would be used to contain his animal. The child's response to picture one, Dunn and Dunn's stipulated ("correct") answer, is a "baby bed." This reference is based upon the visual similarity between what his younger sibling sleeps in and the test publishers' illustration of a cage.

4 - 3 - 25
4 - 1 - (cage)

Indicating picture number four

(Q) What is that a picture of?

(R) A cage.

(Q) What do we do with that cage?

(R) Put animals in there.

(Q) Put animals in there. Have you ever had an animal?

(R) Say, I've got a dog.

(Q) You have a dog. What kind of a cage would you put him in? Show me the place you would put your dog in.

(R) A dog house.

(Q) In a dog house. Do any of these look like a dog house?

(R) Points to picture number four

(Q) Number four, very good.

Indicating picture number one

(Q) What do you call this thing up here?

(R) A baby bed.

(Q) A baby bed. Do you have a baby at home?

(R) Indicates yes

(Q) What does he sleep in?

(R) A baby bed.

(Q) Do any of these things look like what he sleeps in?

(R) Shakes head to indicate yes

(Q) Which one?

(R) Points to number one

Within the above segment the child labeled, provided a function, and then particularized his knowledge of cage. The child attempted to work within the limitations of the stimuli provided; however, it appears that the child has made a fine distinction between "cage" and "dog house":

(Q) What kind of cage would you put him [your dog] in?

(R) A dog house.

(Q) Do any of these look like a dog house?

(R) Points to picture number four

Thus, the child has labeled, provided a functional use, particularized his experience, and distinguished "cage" from "dog house."

Within the next transcript from Plate 25 we again find a child who is capable of labeling, providing a function, and particularizing "cageness." He, too, has a younger sibling at home and referred to picture number one as "a baby bed.: Picture number four was his preferred response, picture one the stipulated answer.

6 - 3 - 25
4 - 1 - (cage)

Indicating picture number four

(Q) Have you ever seen anything like that before? What is that?

(R) A cage.

(Q) What would you put in there?

(R) A doggie.

(Q) Do you have a dog? Where does he stay?

(R) In a cage.

(Q) What does his cage look like? Does it look like anything on here?

(R) Indicates picture number four

(Q) What is that a picture of up here? (picture number one)

(R) A baby bed.

(Q) Do you have any babies at home?

(R) A baby.

(Q) His bed looks like which one of these pictures?

(R) Points to picture number one

The ability of both children to distinguish "cage" is further substantiated by their responses to Plate 31. The stimulus word is "nest," this part of the transcription refers to an oblong-shaped wire bird cage which contains a bird resting on a perch.

4 - 3 - 31
2 - 1 - (nest)

(Q) What is this a picture of?

(R) A bird.

(Q) Where is that bird?

(R) In a cage.

6 - 3 - 31
2 - 1 - (nest)

(Q) What is that?

(R) A bird.

(Q) Where is he? What is he in?

(R) A cage.

In summary, a comparison of both children's responses to Plates 25 (cage) and 31 (net) produced the following results: first, in Plate 25 each child chose the dog house in response to the stimulus word "cage." While both children initially labeled the dog house as a cage, the first child provided the examiner with a subtle distinction between his perception of dog house and cage. The children's elicited responses to the test publishers' stipulated word-picture linking was baby bed. This answer was indicative of the children's use of both experience and

attention to detail and was based upon the perceived similarity between the stimulus picture and the children's experience with a baby bed. Finally, the children's subsequent identification of a cage in Plate 31 was particularly puzzling and open to speculation. What cues enabled the children to correctly identify the latter picture (Plate 31) and not the former (Plate 25)?

A final excerpt which was typical of other transcripts in this category is given below. In Plate 26 the child was asked to put his finger on the picture of "tool." Picture four was the stipulated answer and picture two was the child's preferred answer. The stimuli are given below.

A kitchen utensil or tool - a colander (1)	a nut and bolt (2)
a kitchen utensil or tool - a cutting board (3)	an open-ended wrench (4)

Figure 6. PPVT-R, Plate 26, SW tool, (4). (Dunn & Dunn, 1981b).

The child's response to picture number four drew upon his experience with tools; he reported "my daddy tore his up." He provided the examiner with a label, "wrench" and a tool's function to facilitate work or in the child's words "to fix something." His original or preferred response again alluded to his experience and how he saw the tool used.

15 - 7 - 26
2 - 4 - (tool)

Indicating picture number two

(Q) Tell me about that tool. What kind of tool is that?

(R) Uh . . . white.

(Q) What do we do with that tool?

(R) Uh . . . fix the car.

(Q) Have you ever seen anybody use a tool like that?

(R) Shakes head indicating yes

(Q) Who?

(R) My uncle.

(Q) How does he use that to fix a car?

(R) Uh, with the paper.

(Q) What part does he use to fix the car? What is the name of this tool?

(R) I don't know.

Indicating picture number one

(Q) Tell me about this picture.

(R) I don't know about that.

(Q) Have you ever seen one of those?

(R) Shakes head indicating no

Indicating picture number four

(Q) What is this a picture of?

(R) My daddy tore his up.

(Q) What is that?

(R) A wrench.

(Q) What do you do with it?

(R) Fix something. Fix the bird cage or the bird house.

The child's answers to picture four are particularly noteworthy. He recollects this wrench from the numerous visually dissimilar wrenches available--monkey wrench, socket wrench, and so forth. The child then moved from a particular experience provided by his father to a broad generalization of "toolness." The fact that the child does not select picture four as a "tool" appears curious since he was able to label and provide a functional use. Again the question needs to be asked, how is it that the children can supply information about the correct stimulus yet not make the word-picture linking that is seen as the correct response by the test publishers?

Another factor which affected this category was the child's acquisition of knowledge through indirect experience. The child made no direct reference to self, yet he somehow communicated that he "knows" what he is talking about or describing. Transcriptions from Plate 38 comprised the bulk of this property; of the six errors across this Plate, four were contained within this property. The child was asked to point to "delivering," picture one is the stipulated response. "Giving" was the term used by all six children in responding to the inquiry. The stimuli are given below.

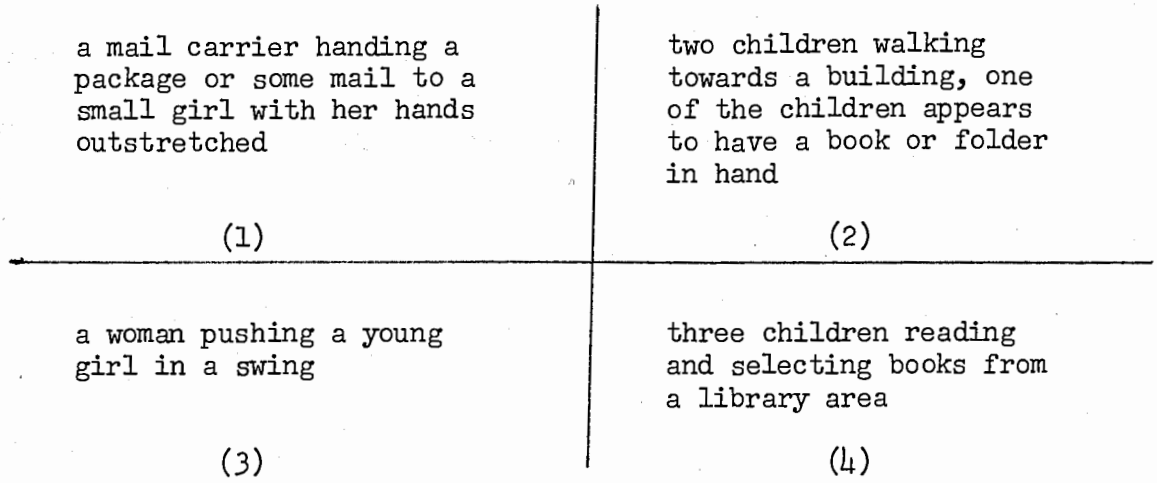

Figure 7. PPVT-R, Plate 38, SW delivering, (1). (Dunn & Dunn, 1981b).

The responses obtained during the interview gain significance since the same response was given across all six children. In order to provide a clearer view of the sameness of these responses only that portion of three transcripts referring to picture one will be reproduced below.

36 - 6 - 38
4 - 1 - (delivering)

(Q) Look at picture one, what's happening here?

(R) Getting some mail.

(Q) Who is this person?

(R) The mailman.

(Q) What is he doing?

(R) Giving the girl the mail.

The next example is taken from transcript
3 - 2 - 38
4 - 1 - (delivering)

(Q) What is this picture? Tell me the name of this picture.

(R) The mailman.

(Q) Tell me about that picture.

(R) That's a lady mailman and she's giving a check to her.

The final illustration is taken from transcript
4 - 3 - 38
4 - 1 - (delivering)

(Q) What's happening up here?

(R) Mailman.

(Q) That's the mailman. Now what is he doing?

(R) Giving mail.

From the above segments we find that when questioned about the stipulated response each child correctly described the scene and accurately recounted what was taking place. All three children appeared to have abstracted the essence of delivering, to give something to a recipient. Further, one child even particularized what was being given, "she's giving a check to her."

Summary and Interpretations

The data from this category were examples of the children's use of background experiences in responding to the stimuli; that is, each child's reference point or rationale for responding was his/her own particular set of experiences.

The data also indicated that despite selection of an "incorrect" stimulus picture, the children were able to conceptualize their preferred choice and the test publishers' stipulated answer. That is, upon inquiry the children provided labels for and gave the functional use of the items queried. To illustrate: in transcription 1 - 1 - 20, the

child is directed to find "net." The child points to safe instead of net; however, when queried about his preferred choice, the child correctly identified the safe as something that "you . . . put money in." The child then related net to the "basketball thing" that he had previously used. Thus, in the above example, although the child pointed to safe rather than net, he was able to differentiate between the two objects during inquiry.

The above example detailed the child's preferred ("incorrect") choice, yet answers to the stipulated ("correct") response indicated an awareness of function and ability to label these objects also. Examples derived through query were "wrench" for "tool," "giving mail" for "delivering," and "basketball hoop" for "net."

Since, upon inspection, it appeared that the children were making an "incorrect" word-picture linking, can one then infer that the children were unfamiliar with the concepts being tested? Can one further assume that the children were unable to abstract and conceptualize the ideas being tested? In view of the data presented, that is, the children's use of appropriate labels and their ability to provide functional uses both for their preferred ("incorrect") response and the stipulated ("correct") response, an affirmative answer to either question would appear questionable.

Perceptual Indicators: pertains to response discriminations which can be accounted for through differences in visual perceptions.

Properties: (a) Labels ascribed through attention to details.

(b) Labels ascribed on the basis of visual similarities to the child's preferred response

(c) Labels ascribed to ambiguous stimuli.

Discussion

The examples from this category were of particular interest since many of the stimulus-picture linkings that the test constructors assumed to be correct were perceived in a totally different manner by the children. The first example was taken from Plate 44. The stimulus word is "dripping"; picture two was the stipulated response. The stimuli are presented below.

a shower head with water coming out (1)	three drops of water below a faucet. The faucet handle is round and has markings extending around the surface (2)
a fountain generally used to decorate parks or other recreational areas (3)	a device generally used to water flowers and plants; water streaming from the spout (4)

Figure 8. PPVT-R, Plate 44, SW dripping, (2). (Dunn & Dunn, 1981b).

An entire transcription from Plate 44 is given below and demonstrates the child's use of pictorial details in formulating her response.

10 - 5 - 44
1 - 2 - (dripping)

Indicating picture one

(Q) What is this?

(R) Shower.

(Q) A shower. Do you have a shower in your home?

(R) Shakes head indicating yes

(Q) What's happening with this shower?

(R) It's still on.

(Q) It's still on? Did somebody cut it off?

(R) Shakes head indicating yes

(Q) And its still on? How did that happen?

(R) I don't know.

(Q) Look down here at picture four, what is that a picture of?

(R) Something you get water out of.

(Q) Something you get water out of. What do you use the water for?

(R) To water your flowers.

(Q) To water your flowers. What about picture two. What is that a picture of?

(R) A watch.

(Q) A watch, okay. Show me the part of the watch, where is the watch part?

(R) Points to round head of the faucet

(Q) How would you put that watch on your arm? How would you wear it?

(R) Tie it on your arm and don't take it off.

(Q) How would we tell time with that watch? Which part would show us the time?

(R) Points to round faucet head

In the above transcription the child accurately identified her preferred choice, picture one, as a shower. During inquiry she provided further elaboration but was unable to ascertain why the water continued to flow from the shower head. Next she provided the researcher with a description of picture four and gave the use of the stimulus picture;

that is, something used "to water your flowers." Hence the child's response during inquiry established an accurate label for and description of picture one, her preferred choice. Consequently one can infer that even though the child selected picture one in response to the stimulus word "dripping," she obviously had not conceptualized the picture as such.

The child's attention to the details of picture two led her to conclude that she was seeing "a watch." Thus it appeared that somehow the child had totally apperceived the publishers' stipulated ("correct") stimulus picture. Whether the child was attending to ambiguous details or the stimulus picture represented as a type of faucet that was unfamiliar to her was not elicited during the interview. In either case, this researcher wonders if one can infer from her error that she has not conceptualized water dripping from a faucet. Moreover, the quantitative aspects of the child's answer indicates that she was "wrong"; the qualitative aspects, on the other hand, provide the reader with a look at the creativeness of her reasoning process.

Another example of this category was derived from Plate 48, one of the most frequently missed plates across all of the children. Of the 21 children tested, 11 missed this plate, and of these 11, 6 children saw "trees" rather than a forest. Picture three was the stipulated ("correct") response.

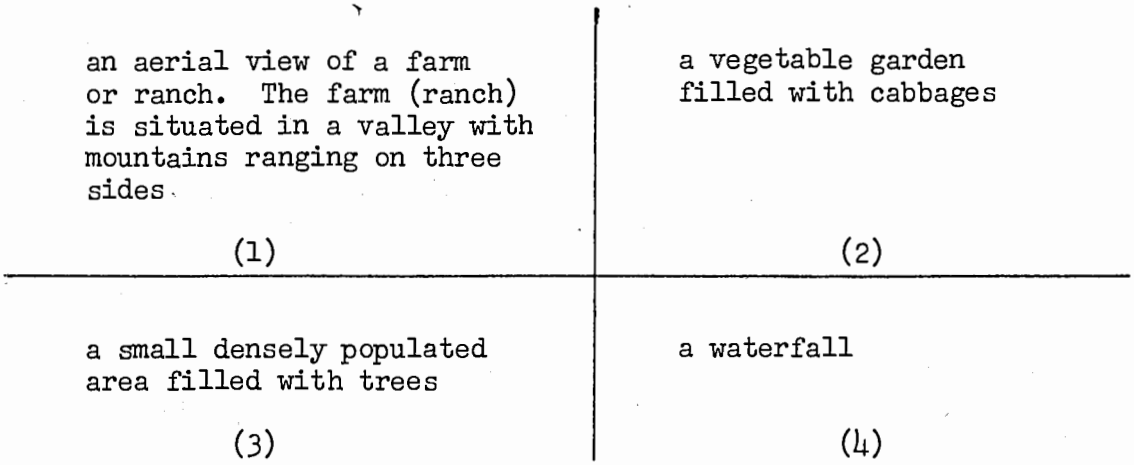

Figure 9. PPVT-R, Plate 48, SW forest, (4). (Dunn & Dunn, 1981b).

The transcription which follows was typical of the responses of many of the children who missed this picture in that most children selected the garden in response to the stimulus word, but upon inquiry were able to provide either the correct label and/or a functional use for garden. The aforementioned protocol is also representative of many of the children's usage of the term "trees" as a descriptive label for the stipulated response picture.

11 - 5 - 48
2 - 3 - (forest)

Indicating picture two

(Q) Where have you seen this before?

(R) Um, on TV.

(Q) Tell me about it. What is that?

(R) Flowers.

(Q) Flowers. What do we call that?

(R) We call them gardens.

(Q) What do we get out of gardens? We get flowers and what else?

(R) Food.

(Q) Can you think of some kinds of foods we get out of gardens?

(R) Green beans.

Look at picture one, tell me about that picture.

(R) People live in there.

(Q) What do we call that?

(R) Mountains.

(Q) Look down here at picture three, tell me about that picture.

(R) Jungle.

(Q) Looks like a jungle. What's in that jungle?

(R) Animals.

(Q) What's right here in that part of the picture that we see?

(R) Trees.

In the protocol presented above, the child has selected the garden in response to the stimulus word "forest." The child's knowledge of her preferred choice can be inferred from the label provided, the descriptive narrative given, and a functional use supplied.

Looking at the child's response to picture three, one sees that she provided a label, "jungle," and gave a description of what one is likely to find in a jungle, "animals." The interview does not elicit whether the child perceived some animals embedded within the gestalt of this picture or whether the child was responding to a previous experience with, or an expectation of, what one is likely to find in a mass of trees similar to the ones presented in the stimulus-picture.

Frequently children, especially the younger child, when presented with a multiple-choice framework, such as the PPVT-R, and when they are unsure of the correct answer, respond to the item they know best. Thus, perhaps all that can be said about this transcription is that the child's preferred response was indicative of what she knew best. However, the child's use of "jungle" containing "animals" and her attention to details ("trees") in describing the forest is a puzzlement to this researcher. Questions which arose were: What does the child's "error choice" really mean, since she apparently knew that a "garden" was not the same as "jungle" or "forest"? Also, what were the visual cues that the child was attending to in her verbal answer of "jungle"?

Another factor which affected this category was the test publishers' use of visually interchangeable or identical stimuli to elicit stipulated ("correct") answers. An example of this property was taken from Plate 32. The stimulus word was "envelope"; picture two was the stipulated response. The stimuli are shown below.

a trunk (1)	a fully addressed, stamped, and postmarked envelope (2)
a saw (3)	a book (4)

Figure 10. PPVT-R, Plate 32, SW envelope, (2). (Dunn & Dunn, 1981b).

The transcriptions from two different protocols are reproduced below. When asked to find the envelope the child in this first transcript pointed to picture one.

1 - 1 - 32
1 - 2 - (envelope)

Indicating picture one

(Q) Tell me about this picture.

(R) It is locked up.

(Q) It's locked up. Tell me some more.

(R) And it's going to be picked up.

Indicating picture two

(Q) What is this?

(R) Mail.

(Q) Mail. Okay.

In the next transcription from Plate 32 a different child also indicated that picture one was her response to the stimulus word "envelope."

6 - 3 - 32
1 - 2 - (envelope)

Indicating picture one

(Q) Tell me about that picture. What is that?

(R) A suitcase.

(Q) What do we do with that?

(R) Put clothes in it.

(Q) Have you ever had a suitcase like that?

(R) Shakes head indicating yes

(Q) Now what did you do?

(R) Go to Milwaukee.

(Q) When you went to Milwaukee?

Indicating picture two

(Q) What is the picture over here?

(R) Mailman.

(Q) What do you do with this?

(R) You give it to someone.

(Q) How do you do that?

(R) You mail it.

In the above transcriptions both children selected the trunk as their response to "envelope." In the first interview the researcher did not direct the child to sufficiently elaborate upon her answer. However, the latter child demonstrated that she could embellish her response when provided with the opportunity. Although she confused the label "suitcase" with "trunk," she did furnish the function, "put clothes in it," and particularized her knowledge and experience; that is, she used a trunk when she went "to Milwaukee."

In analyzing the children's responses to the stipulated pictures, their attention to pictorial details, such as the postmark, cancelled stamp, and address on the envelope may have served to remind them of "mail." However, that this picture is an envelope, presumably containing a letter, is also evident. Thus, it appears that this picture may be equally representative of either "mail" or "envelope." If the picture's word linking is interchangeable, then how does one evaluate the intelligibility or appropriateness of the children's answers?

The children's responses to ambiguous stimuli constitutes the remaining property of this category. The researcher has defined ambiguous stimuli as a pictorially faulty representation or less than realistic portrayal of the object or situation that the picture represents. For instance, in Plate 20, the stimulus word is "net," and a net-like object with a long thin projection extending from the upper left is used as the stipulated ("correct") choice. Although there are various types of fishing nets one can argue that the narrow thin-like projection extending from the net bears little resemblance to the sturdy handle found on many fishing nets. Lack of attention to even a minor detail such as this may lead to a misinterpretation of the entire stimulus. Thus the pictorial context that elicited this child's description of net, "it looks like it [the net] goes to a ball you stuck this [the long thin projection] into a wall or something and then it [a basketball] comes in and go out," may be problematic.

An additional example is provided by Plate 21; the stimulus word is "tearing" and is represented by picture four. The stimuli are presented below.

a young girl dressed in a "western" outfit and twirling a lasso (1)	a young child with a dog biscuit in his hand appearing to command his dog to "sit" (2)
a young boy getting cookies from a cookie jar (3)	a youngster with a divided object in hand (4)

Figure 11. PPVT-R, Plate 21, SW tearing, (4). (Dunn & Dunn, 1981b).

The responses from two different transcripts are given below. The first child is asked:

(Q) What is happening in picture number four?

(R) Lady is letting the short things dry.

(Q) Did she just wash those? What is she doing with them now?

(R) Letting them dry off?

(19 - 9 - 21
1 - 4 - (tearing)

The next child also perceives the object in the picture as an article of clothing, namely a pair of shorts.

(Q) What is this child down here doing in number four?

(R) Look at those shorts.

(Q) What do you think he is going to do with those shorts?

(R) Put them on.

(18 - 8 - 21
2 - 4 - (tearing)

The stipulated ("correct") response picture was apparently meant to illustrate a child tearing a piece of paper or cloth. One wonders if the object that the child is holding is a piece of paper. Does the square shaped and unlined surface remind the younger child of the kind of paper with which he may be familiar? Likewise, if the object that the child is holding depicts a piece of cloth, then the lack of indication of texture or design may again be unfamiliar to the younger child. Also, the lack of details, such as rough edges around the segmented parts may be more reminiscent of a pair of shorts than torn paper.

Summary and Interpretations

The perceptual indicator category was of particular interest since many of the stimulus-picture linkings that the test constructors assumed to be correct were perceived in a totally different manner by the children. As the researcher analyzed the plates and transcriptions across this category, two concerns arose. First, the test publishers' use of visually interchangeable or identical stimuli as representative of one and only one correct linking appears questionable. An example was taken from Plate 32, the stimulus word is "envelope." Picture two was the stipulated ("correct") answer and shows an addressed, stamped, and postmarked envelope. The same stimulus can be appropriately linked in two different manners. First, one could perceive an item that had been processed by the post office, namely, "mail." On the other hand, one could perceive this item as a paper container for a letter or similar object, namely, "envelope." Thus the stimulus picture appears equally representative of both "mail" and "envelope."

This category also contained pictures with ambiguously depicted stimuli. That is, pictures which may provide a less than realistic portrayal of the object or situation that the picture represents. For instance, in Plate 21, picture four, the child is asked to respond to "tearing." Some of the characteristics associated with torn paper, such as ragged edges, appear to be absent from this picture. The stimulus picture which two different children described as "shorts" appears to have little to do with "tearing."

Given the use of highly similar and ambiguous stimuli, how does one evaluate the correctness or incorrectness of the responses presented throughout the body of this section? If the child did rely on pictorial clues or attention to details to discern unclear stimuli, then can conclusions about the children's intellectual ability be made? These and similar questions are presented for the reader's consideration.

Symbolic Substitutes: pertains to any equivalent, analogous, figurative or symbolic utterance substituted for the stimulus expression.

Properties: (a) Labels which were accurate descriptors.

(b) Original labels which were descriptive of the stimulus or its functional use.

Discussion

The use of synonymous words and phrases in describing various objects and actions emerged as a particularly interesting category. The transcriptions from Plates 34, 19, and 10 which were typical of the responses across this particular property are presented below. Within each interview the child demonstrates the appropriateness of his/her answers and his/her ability to abstract the intended meaning from each picture.

The first example is taken from Plate 34; the stimulus word was "pasting." Quadrant four, the stipulated answer, shows a hand holding the applicator from a jar of glue or paste. This substance is being applied to a page in what appears to be a picture album (Dunn & Dunn, 1981b). The stimuli are given below.

a hand holding a feather duster (1)	a hand holding an oil can with a drop of oil being squeezed onto a caster wheel (2)
a hand holding an eraser, erasing words from a page (3)	a hand holding the applicator from a jar of glue or paste. This substance is being applied to a page in what appears to be a picture album (4)

Figure 12. PPVT-R, Plate 34, SW pasting, (4). (Dunn & Dunn, 1981b).

The transcript of quadrant four which is given below shows that the child has conceptualized the activity of bonding or joining something together and has provided the examiner with an appropriate synonym for "pasting."

2 - 1 - 34
3 - 4 - (pasting)

(Q) What is this picture?

(R) He's gluing something.

The next transcription further illustrates the use of functionally similar identifiers. In Plate 19 the child was responding to the word "accident," the stimulus shows two trucks which have collided resulting in extensive damage (Dunn & Dunn, 1981b).

a broken-down picket fence (1)	two trucks which have collided with each other resulting in extensive damage (2)
a pile of logs with a tree stump in the background (3)	a baby chicken emerging from a cracked egg (4)

Figure 13. PPVT-R, Plate 19, SW accident, (2). (Dunn & Dunn, 1981b).

The query for this picture is presented below and is taken from transcript

5 - 3 - 19
3 - 2 - (accident)

Indicating picture number two

(Q) Now what is this a picture of up here?

(R) Cars.

(Q) Cars. What is with those cars? What's happening?

(R) They crashed to it.

Dunn and Dunn's stimulus-word linking appears problematic, since the accidental, unexpected, or unintentional nature of this collision can only be inferred from the stimulus. However, the child's use of "crashed to it" presents an accurate picture of the wreckage inasmuch as it is explicit from this scene that the two trucks have crashed into each other.

Another child's ability to abstract the intended meaning from the given stimulus is seen again in the following transcript. The specified word is "lamp"; the stimulus picture shows a table lamp.

a wagon (1)	a garden hoe (2)
a long-haired mop (3)	a table lamp (4)

Figure 14. PPVT-R, Plate 10, SW lamp, (4). (Dunn & Dunn, 1981b).

The segments from two different transcriptions describing stimulus four are given below.

19 - 9 - 10
1 - 4 - (lamp)

(Q) Look over at picture number four. Tell me about that picture.

(R) A light.

(Q) What do we use that light for?

(R) To see.

(Q) What do we call this thing?

(R) A light.

6 - 3 - 10
1 - 4 - (lamp)

(Q) What is this a picture of down here?

Indicating picture number four

(R) Light.

(Q) Do you have a light like this?

(R) Yes.

(Q) Where is your light like that?

(R) In my room.

The above transcripts indicate that both children have identified the "lamp" as a source of illumination. The first child's use of the indefinite article "a" preceding his response "a light" further particularizes and points out his reference to the specific stimulus in picture four. The query did not direct the child in the second transcript to provide the functional use of "light." However, when the first child was asked, "What do we use that light for?" he replied, "to see." Even though he used a symbolic substitute, his ability to provide a function for and label the device in picture four cannot be questioned.

Another component of this category was the use of original labels, that is, novel terminology supplied by the children to describe the stimulus or its functional use. The transcriptions from Plates 20, 57, and 52, which were typical of the responses across this particular property, are presented below. The children use creative and imaginative expressions to communicate their meanings. The use of attributes to constitute meanings such as "fix-it-man" for "mechanic," and "picture arounder" for "frame" were examples of this category.

The following transcriptions demonstrate that both the child's communication, and his ability to communicate are "masked" by PPVT-R testing procedures. The first example was taken from Plate 20; the stimulus word is "net." Quadrant two, the specified answer, shows a net-like object with a long thin projection extending from the upper left (Dunn & Dunn, 1981b). The section of the transcript referring to

this picture showed the child's ability to label and provide the function of the depicted object.

10 - 5 - 20
1 - 2 - (net)

(Q) What about picture number two? What do we do with that?

(R) Catch fishes.

(Q) Catch fish with it, okay. What do we call it?

(R) Ummm, a fishing basket.

The above excerpt shows how the child moved from a functional descriptor, "catch fishes," to a label, "fishing basket." In additon, the child's use of "basket" to indicate a receptacle for the containment of fish appeared especially ingenious and insightful.

Another illustration of this category was taken from Plate 57, in which the stimulus word was "mechanic." Quadrant two, the stipulated answer, shows a car with its hood raised. Parts have been taken out of the car and tools are laying on the car. A man with a towel hanging out of his back pocket dressed in a jacket with some type of emblem on the back is leaning over the car presumably trying to fix it (Dunn & Dunn, 1981b).

a man driving a van (1)	a car with its hood raised, parts have been taken out of the car and tools are laying on the car. A man with a towel hanging out of back pocket, dressed in a jacket, is leaning over the car, presumably trying to fix it (2)
a man putting gas into a car (3)	a valet standing beside an open car door with an attache case in hand (4)

Figure 15. PPVT-R, Plate 57, SW mechanic, (2). (Dunn & Dunn, 1981b).

Two separate interviews describing stimulus two are given below.

11 - 5 - 57
4 - 2 - (mechanic)

(Q) What's happening in picture number two?

(R) He's trying to fix his car.

(Q) What is he called?

(R) He's called the fix-it-man.

16 - 7 - 57
3 - 2 - (mechanic)

(Q) Look at picture number two. Tell me about this man. What is he doing?

(R) He's putting . . . he's fixing the car.

(Q) What do we call him?

(R) A fix-it-man.

The children's selection of labels appears to be a deliberate attempt to differentiate between a mere description, "fixing the car,"

and specifying a job, "the fix-it-man." The former child's use of the definite article "'the' fix-it-man" demonstrates her use of a job class or title; the latter child accomplishes this same task through the use of the indefinite article, "'a' fix-it-man." Thus both segments clearly demonstrate each child's ability to abstract the meaning of mechanic; that is, a person who is skilled in repairing or restoring something to proper condition or functioning, and applying this meaning to a particular occupational role.

A final example is taken from Plate 52. The stimulus word is "vase." Quadrant three, which contains the stipulated response, shows an unadorned vase without any flowers (Dunn & Dunn, 1981b).

a thermos (1)	a mason type jar with its lid laying nearby (2)
an unadorned vase without any flowers (3)	a goblet (4)

Figure 16. PPVT-R, Plate 52, SW vase, (3). (Dunn & Dunn, 1981b).

The child's interview is reproduced below.

11 - 5 - 52
2 - 3 - (vase)

(Q) Look at number three. What do you use that for?

(R) Put flowers in it.

(Q) What do you call that thing?

(R) A flower cup.

Once again the child's transcription shows that she has conceptualized the nature of a vase, something used to "put flowers in"; and has provided her own imaginative label, "a flower cup." Moreover, this researcher can appreciate her ability to do so in view of the ambiguous stimulus provided. Although the query did not ascertain her reason for this unique label, one can speculate that either "flower cup" is her terminology for every vase or that the child has combined flower with cup since the stimulus more closely resembles a cup-shaped vessel similar to the kind given as a prize or trophy. The latter view may be the more accurate interpretation.

Summary and Interpretations

The data from this category typified the children's use of symbolic substitutions in their responses to many of the plates from the PPVT-R. The children's ability to provide meaning for the stimuli was apparent. For instance, the use of "gluing" for "pasting" has direct reference to the process of bonding something together. And the use of "the light" for lamp points out the intended referrent. The child further provided a functional use of lamp, "to see," again substantiating his knowledge of lamp.

Likewise, the children's use of original labels which were often both descriptive and functional points out their ability to derive meaning from the stimulus pictures provided. Terms such as "fishing basket" for fishing "net" demonstrate that the child has to some degree abstracted meaning from the stimulus picture, and has processed a function of this object, and has been able to provide a label. The

remaining examples, "fix-it-man" for "mechanic," and "crashed to it" for "accident" are also illustrative of differences in vocabulary usage. Hence, the problem appeared to be one of vocabulary rather than similarity in conceptualization or even a question of intellectual ability.

Invalid Indicators: pertains to responses which demonstrate an understanding of the task, yet do not provide an acceptable alternative to the test publishers' stipulated ("correct") response.

Properties: (a) The child offered no verbal response.

(b) The child stated that she/he was unable to answer inquiries.

(c) The child provided an inaccurate descriptor for the stimulus.

(d) Due to insufficient inquiry, the validity of the child's response cannot be evaluated.

Discussion

One of the factors affecting the invalid indicators category was the children's use of inaccurate descriptors or labels when discussing the stipulated ("correct") response. Inaccurate descriptors show a lack of understanding about the word-picture association being queried. A distinguishing characteristic of this category was the "incorrectness" of the children's responses to both their preferred (original) answer and the test publishers' stipulated answer. Other factors affecting the invalid indicators category were either the children's lack of a verbal response or the children's indication that they were unable to

elaborate upon what had already been said ("I don't know). One of the most unfortunate factors affecting this category was the researcher's inability to facilitate inquiry. The examiner's failure to obtain clarifying responses or to draw out the children's stored knowledge and experiences are characteristics of this property. Examples of the data from the invalid indicators category are provided in Table 1.

Stipulated Responses Acquired Through Inquiry: pertains to either spontaneous or elicited correction of the discrepancy between preferred and stipulated responses.

Porperties: (a) Appropriate discussion and accurate labeling of stimuli representing both preferred and stipulated responses.

Discussion

One of the most perplexing and curious factors revealed by the data was the children's appropriate application of the test publishers' stipulated ("correct") responses during inquiry. For instance, the child is directed to point to the picture of "net"; however, he points to a picture that is not what the test publishers' have deemed as appropriate (the child's preferred choice). Yet, upon inquiry, the child correctly identified both his preferred choice and the test publishers' stipulated choice. The fact that this phenomenon occurred again and again across various plates and across eleven of the twenty-one children tested appeared to warrant its inclusion as a separate category. This category was further refined by including only those transcriptions in which the stimulus word was used exclusively in

Table 1

Examples of Invalid Indicators

No Response	Don't Know	Inaccurate Descriptors	Insufficient Inquiry
[a]4-3-24 pr (2) st(3) sw (peeling) Indicating picture 2 (Q) What is she doing here? (R) Making a cake. (Q) What is she using? (R) No response Indicating picture 3 (Q) What is this a picture of? (R) A apple. (Q) What's happening to the apple? (R) He cutting it. (Q) Why is he doing that? (R) No response.	[a]11-5-33 pr (4) st(3) sw (hook) Indicating picture 4 (Q) What do you do with that? (R) That hook is for your clothes on it. (Q) What do we call that? (R) I don't know. (Q) Have you ever seen one before? (R) Shakes head indicating no Look at picture 3 (Q) What do we do with that? (R) I don't know what we call it.	[a]2-1-36 pr (2) st(1) sw (penguin) Indicating picture 2 (Q) Tell me about this picture. (R) He got long legs. Indicating picture 1 (Q) What is this? (R) A whale.	[a]3-2-40 pr (2) st(3) sw (parachute) Indicating picture 2 (Q) Tell me about that picture. (R) He going up the parachute and he going up to the air. Indicating picture 3 (Q) Tell me about that picture. What do we call this picture? (R) Catching the Pepsi Parrot, that's what it is. They go up in the air with the Pepsi Parrot.

[a]Codes: pr - preferred choice.
st - stipulated response.
sw - stimulus word.

defining or describing the stipulated stimulus picture. An additional factor in the establishment of this category was the child's use of labels, descriptors, and functions to describe the stipulated answers. Thus, within this category, the child's usage of the aforementioned variables must be in accord with the test publishers' intended usage.

Since the same phenomenon was observed both across the different children and the various plates, the format of this section has been altered. The reader will find that all of the interviews have been grouped together, followed by a summary and interpretation section.

The first transcription was taken from Plate 16; the stimulus word is "feather." Picture number one was the stipulated ("correct") response; picture number two was the child's preferred ("incorrect") response. The stimuli are given below.

a feather (1)	a fin from a fish (2)
a pair of antlers (3)	a claw (4)

Figure 17. PPVT-R, Plate 16, SW feather, (1). (Dunn & Dunn, 1981b).

12 - 5 - 16
2 - 1 - (feather)

Indicating picture two

(Q) Good - where have you seen that before?

(R) A fish.

(Q) Do you know what we call this part of the fish?

(R) A tail.

(Q) Yes, a tail.

Look at picture number four

(Q) What is that?

(R) A monster's leg.

(Q) What about number one, what is that?

(R) A feather.

(Q) Where would we find a feather?

(R) On the grass.

(Q) What kind of animal has feathers?

(R) Birds have feathers.

The next interview was taken from Plate 28; the stimulus word was "stretching." Picture number one was the stipulated response; picture number four was the child's preferred response. The stimuli are given below.

a young boy sitting up, perhaps in bed, yawning and stretching one arm above his head (1)	a youngster tumbling on what appears to be a gymnastic made (2)
a young boy lifting a bucket that appears to be heavy (3)	a young girl jumping on a trampoline (4)

Figure 18. PPVT-R, Plate 28, SW stretching, (1). (Dunn & Dunn, 1981b).

1 - 1 - 28
4 - 1 - (stretching)

Indicating picture four

(Q) Tell me about that.

(R) This girl is jumping up in the air.

(Q) She's jumping up in the air. Tell me some other things. What else can you tell me about that?

(R) Um . . . this (points to the trampoline)

Indicating picture one

(Q) What is happening here?

(R) He's in bed and he's tired.

(Q) He's in the bed and he's tired. Okay. Tell me something else about him. What would you call him doing?

(R) Stretching his arm out.

The third transcription was taken from Plate 35; the stimulus word was "patting." Picture number one was the stipulated response; picture number two was the child's preferred response. The stimuli are given below.

a young girl patting a dog (1)	a young girl pouring milk in a dish for a cat (2)
a young girl romping through what appears to be a small pond (3)	a young boy climbing a fence (4)

Figure 19. PPVT-R, Plate 35, SW patting, (1). (Dunn & Dunn, 1981b).

4 - 3 - 35
2 - 1 - (patting)

Indicating picture number two

(Q) What is she doing there?

(R) Giving the cat some food.

(Q) She's giving the cat some food.

Indicating picture number one

(Q) Now what is this a picture of over here?

(R) A dog.

(Q) A dog. What's happening with that dog? What is she doing?

(R) Patting him.

(Q) She's patting him, okay.

The next two transcriptions were taken from Plate 30; the stimulus word was "tying." Picture number two was the stipulated response; picture number one was the preferred response given by both children.

a young boy pulling a wagon that has a wooden box in it (1)	a young girl tying her shoe (2)
a young girl either climbing up or coming down a rope (similar to the device found in many gymnasiums) (3)	a young girl who appears to be uprooting a sapling (4)

Figure 20. PPVT-R, Plate 30, SW tying, (2). (Dunn & Dunn, 1981b).

2 - 1 - 30
1 - 2 - (tying)

Indicating picture number one

(Q) Tell me about this picture.

(R) The boy pulling it.

(Q) Um-hm, he's pulling it.

(R) Then it's a wagon.

Indicating picture number two

(Q) What is this picture?

(R) She's tying her shoe.

17 - 8 - 30
1 - 2 - (tying)

Indicating picture number one

(Q) Tell me about that picture. What's happening in that picture?

(R) Somebody pulling uh wagon with a box in it.

(Q) He's pulling a wagon with a box in it. Sure he is.

(Q) What is she doing in picture number three?

(R) She's climbing up the rope.

(Q) What's happening in picture number two?

(R) Tying up her shoes.

The next interview was taken from Plate 37; the stimulus word was "sewing." Picture number two was the stipulated response; picture number three was the child's preferred response. The stimuli are given below.

a young child sweeping (1)	a young girl sewing a pair of pants (2)
a young girl wrapping a present (3)	a child putting a container in what appears to be a toy stove (4)

Figure 21. PPVT-R, Plate 37, SW sewing, (2). (Dunn & Dunn, 1981b).

8 - 4 - 37
3 - 2 - (sewing)

Indicating picture number three

(Q) What is that? Tell me about picture number three.

(R) A present.

(Q) Tell me about that present.

(R) We put toys in it.

(Q) What is she doing with that present?

(R) She got toys in it.

(Q) What is this she has in her hands?

(R) Wrapper.

(Q) What is she doing?

(R) She's wraping that . . . present.

(Q) What is this girl doing here in picture number two?

(R) Sewing.

(Q) What is she sewing?

(R) Uh . . . uh, pants.

(Q) What is she using to sew?

(R) I don't know.

(Q) What is this stuff in her hand?

(R) Shoes, dress, clothes [sounds irritated, getting tired]

A final example of this category was taken from Plate 67; the stimulus word is "disagreement." Picture number one was the stipulated response; picture number two was the child's preferred response. The stimuli are given below.

two men appearing to be in a dispute or a disagreement (1)	two young children sipping some type of refreshing drink from a straw (2)
a beautician styling a woman's hair (3)	two men shaking hands (4)

Figure 22. PPVT-R, Plate 67, SW disagreement, (1). (Dunn & Dunn, 1981b).

14 - 7 - 67
2 - 1 - (disagreement)

Indicating picture number two

(Q) What are they doing up there?

(R) One going this and one going that way [indicating the drinking straws]

(Q) Ah, and what are they doing?

(R) Sucking.

(Q) What are they sucking on?

(R) Some pop.

Look over here at picture number one.

(Q) What's happening here?

(R) Disagreement.

(Q) What are they doing?

(R) Talking mean.

(Q) They are talking. How are they feeling?

(R) Very bad. [emphasizes her words]

(Q) What do you think they are saying to each other? What do you think they could be saying?

(R) Disagreeing.

(Q) What do you think he might be saying? Do you think that he is using his soft voice or his loud voice?

(R) Loud voice.

Look down here at picture number three

(R) Combing her hair.

(Q) Combing her hair. What do we call her?

(R) A woman combing her hair.

(Q) Does your mother go someplace and get her hair combed?

(R) Nope.

Summary and Interpretations

The stipulated response acquired through inquiry was a particularly baffling category. Typically the children would select a picture other than the stipulated response picture, yet during inquiry the children would supply appropriate answers for both their original choice (preferred choice) and the test publishers' stipulated response. The obvious question was if the children could cognize both their

preferred response and the publishers' stipulated response then why would they choose an "incorrect" response over a "correct" response?

Blank, Rose, and Berlin (1978) suggest that a major characteristic of the young child's style of dealing with the world is "his attraction to salient impressions" (p. 15); that is, the physical properties of the stimulus. Could perceptual salience be a factor in explaining the children's aforementioned testing behavior. In a conversation with Dr. Clifford Highnam, Associate Professor of Speech Pathology, University of Northern Iowa, the concept of perceptual salience was discussed as it affects children's test-taking behavior. Dr. Highnam asserted that many children, especially the younger child, tend to point to the most salient item on the page; that is, the item that most attracts their attention. If the children in this study were in fact responding to items that somehow were more attractive or attention getting rather than responding to the stimulus word input, then the issue of test-taking ability rather than cognitive ability must be recognized and dealt with.

Anastasi (1976) comments that the test-wise or test-sophisticated child has developed self-confidence and better test-taking attitudes partly as a result of familiarity with common types of test items, test administration procedures, and so forth. Waiting for instructions and providing the examiner with only what was asked for characterize the test-wise child. On the other hand, the less test-wise child may give tangential answers to questions or, on a test containing a multiple choice format, point to any picture regardless of what he knows.

The transcripts from this category indicate that the children tested were able to label and/or to provide the functional usage of both their preferred answers and the test publishers' stipulated answers. These interviews demonstrate that one can not automatically infer that the child had not abstracted the meaning of the "correct" answer; in other words, "incorrect" may not be as incorrect as it appears. Thus, the data from this category suggest a need to look beyond the stimulus input-output patterns (linkings) provided by the PPVT-R. The data further suggest a need for additional qualitative research into the effects of perceptual salience and test sophistication on the test scores of young children.

DISCUSSION AND IMPLICATIONS

The discussion regarding the data presented in the various categories and the properties focused upon the test publishers' use of the PPVT-R as a measure of intelligence. Although this author's analysis can be considered only a first level analysis of error patterns, certain considerations and cautions appear warranted when application of the instrument's results are used as an index of intelligence.

Conceptually, the measure of intelligence has two potential limitations. Harris (1963) has observed that concepts usually depend on testing devices, therefore the meaning attached to a construct such as intelligence relies on the methods employed in the assessment of the attribute. Consequently, "the less sophisticated or precise the measurement device, the more likely are we to develop concepts that are gross and ill-defined" (p. 315). According to this theory, there may be

attributes essential to a trait that are not being evaluated by an instrument that purports to do so. Barnes (1972) pointed to a related concern in a discussion centering around the defining of concepts such as intelligence. He affirmed that if such a broad concept were narrowly defined, important characteristics or behaviors predictive of, or related to, performance on a given criteria could be omitted.

Sigel (1968) further argued that conventional intelligence tests failed to provide sufficient information about the nature of intellectual processes, especially the process by which an individual arrived at the answer to intellectual problems. He emphasized that respondents often did not share common or conventional response systems because of their differing social and cultural experiences and backgrounds. Uncommon or unconventional responses may reflect the originality and novel outlook of the respondent rather than a simple "lack" of knowledge. Unfortunately, most standardized intelligence tests do not provide the examinee with an opportunity to report and discuss the logic behind a response. In this manner, answers which have a logical basis of truth or fact from the point of view of the person being tested are considered inappropriate and wrong. In the construction of a test, right and wrong answers are designated by the authors with no flexibility in the "right-ness" or "wrongness" of responses analyzed.

Wohlwill (1980), in a recent article which discusses mental growth in childhood, emphasized that the measurement of intelligence was multi-dimensional and cautioned that distortion was probable when intelligence was expressed as a single quantitative index such as IQ.

Moreover, he stressed that a construct such as intelligence was not a unitary trait but a constellation of verbal, numerical, and other types of abilities which could not be subsumed under a single construct or assessed in terms of narrowly defined behaviors.

Efforts to define intelligence reflect the wide range of interpretations of its nature and aspects of its measurement. As stated in the body of this paper, there is no consensus among psychologists or researchers as to what intelligence really is. Bayley (1970) observed that attempts to define intelligence ranged from orientations with a genetic basis to more encompassing descriptions of the term as provided by Wechsler. Wechsler's (1944) definition states that "intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment" (p. 3). This orientation views intelligence as a broad, multi-dimensional function, emphasizing the qualitatively changeable aspects of intelligence and stressing the many determinants which comprise this entity. The multi-faceted nature and development of intelligence is postulated by many theorists who view the single quantitative IQ score as too restrictive and confining to be seriously considered a measure of the person's capabilities (Bayley, 1970; Bloom, 1976).

The data contained within the various categories such as the children's use of original and creative labels as reflected in the symbolic substitutes category, the children's ability to correctly label and provide a function upon inquiry of the test publisher's stipulated answers as reflected in the stipulated response upon inquiry category, or the children's use of logical and experientially or

perceptually grounded reasoning as reflected in the experential and perceptual indicator categories, exemplify many of the concerns that have been alluded to by psychologists such as Wechsler (1944), Sigel (1968), Harris (1963), Barnes (1972), and Bayley (1970).

In view of the hypothesis that intelligence is not a unitary trait, nor can it be assessed through the evaluation of a narrow set of standards or characteristics, the reader is asked to consider usage of the PPVT-R primarily a measure of receptive language rather than as a measure of intellectual ability. Dunn and Dunn (1981a) state that their test is not to be used as a "comprehensive test of general intelligence" (p. 2). However, it is interesting to note that they mention the fact that the standard score yielded on the test is equivalent to a deviation IQ and discuss within their chapters on reliability and validity the concept of "changes in IQ over time" (p. 57), and correlation with individual tests of intelligence is presented in depth. Although the authors qualify and caution the PPVT-R's usage as an individual test of intelligence, there are frequent references to the concept of intelligence.

The purpose of this summary was to review the relevant questions and concerns surrounding the measuring of the construct of intelligence. According to the authors, the PPVT-R is primarily a measure of receptive language (Dunn & Dunn, 1981a). Usage of the test as a narrowly defined measure of intelligence and as a measure of scholastic aptitude is derived from its use as an evaluative measure of vocabulary. After

reviewing the multi-dimensionality of intelligence and surveying literature that questions the qualitative aspects of responses that are not queried, the reader may begin to question the applicability of the narrowly defined receptive language trait assessed by the PPVT-R and carefully consider whether or not the standard score can be equated with a deviation IQ. Further exploration of this issue may be necessary as the PPVT-R manual presents information which may lead some readers to believe that it can be used as an index of intelligence.

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APPENDIX A

LETTER TO HEAD START DIRECTOR

To: Director, Head Start
From: Carole Coffey
Re: Research Project

I am Carole Coffey, graduate assistant and student at the University of Northern Iowa, matriculating in the area of school psychology. I am researching my thesis in partial fulfillment of the requirements for the Degree Educational Specialist.

The literature is full of studies reporting lower test scores for low-income Bilalian (Black) students as compared to their Caucasian counterparts. Much of this data has been used to question the long-term academic gains and effectiveness of pre-school programs such as Head Start. I am proposing that we look at this data from a culture specific perspective. That is, to get underneath the statistics and ascertain the reason(s) behind a child's choice of an "incorrect response." The following procedure will be employed:

1. Administration of the Peabody Picture Vocabulary Test - Revised (PPVT-R), a measure routinely used in psychological and clinical evaluation, to Black four-year old preschool students.

2. Using each child's individual error pattern, tape record discussion about reasons for picture selection. The students will also be asked to provide labels for selected pictures.

3. A qualitative analysis of the data to ascertain error patterns will be employed.

This study appears significant in the areas of test bias and long lasting academic gains in pre-school children.

I am requesting the opportunity to present further details of my research and discuss the possibility of including students from your center in my sample population.

I appreciate your time and interest.

Sincerely,

/s/ Carole Coffey

APPENDIX B

LETTER TO PARENTS

February 10, 1981

Dear Parent or Guardian,

I am Carole Coffey, a graduate student at the University of Northern Iowa. I am working on a research project which involves children from the ages of 3½ - 4½. I will be showing the children sets of four pictures and asking them to pick out one. I will then question them about their choice. I ask for your permission to include your child in this study. All testing will be done at Head Start and will take about 20 minutes.

I sincerely thank you for your time and concern.

/s/ Carole Coffey

I give my permission for_____
to be included in the research study at Head Start.

X_____
(parent's signature)

_____
(date)

APPENDIX C

FOLLOW-UP LETTER TO PARENTS

February 28, 1981

Dear Parent or Guardian,

I am Carole Coffey, a graduate student at the University of Northern Iowa. I recently asked your permission to include your child in a study that I am doing at Head Start. I will be showing the children sets of four pictures, asking them to pick one out, and questioning them about their choice. All testing will be done at Head Start and will take about 20 minutes. Please sign the bottom part of this form and have _____ return it to his/her teacher tomorrow.

I am sincerely thankful for your time and cooperation.

/s/ Carole Coffey

I give my permission for_____
to be included in the study at Head Start.

X_____
(parent's signature)

_____
(date)

APPENDIX D

MOST FREQUENTLY MISSED WORDS

Table 2 presents high-miss errors both in terms of frequency and commonness of response. The plate number, the total number of children who gave incorrect responses to that plate, the most frequently preferred response, and the number of children who gave that response are shown in Table 2. All items were high-miss and represent examples from within each of the five categories derived from the data. Notable exceptions were special low-miss items, such as Plates 10, 32, and 57, which are included because all of the children's preferred responses were the same.

Table 2

PPVT-R Error Analysis - Most Frequently Missed Words

Plate	f	Stipulated Word[a]	Most Frequently Preferred Response[b]	Preferred Response
31	12	nest	grass (leaves)	8
48	11	forest	trees	6
22	9	sail	boat	8
20	8	net	basketball thing or basketball hoop	5
47	7	frame	picture	5
38	6	delivering	giving mail	6
28	5	stretching	stretching	3
21	5	tearing	tearing	3
43	4	vegetable	carrot	3
44	4	dripping	watch	2
10	3	lamp	light	3
32	3	envelope	mail (letter)	3
57	3	mechanic	fix-it-man	3
25	2	cage	baby bed	2
30	2	tying	tying	2

[a]stipulated word--response provided by the test publisher as "correct."

[b]preferred response--child's ("incorrect") response.