INTELLIGENCE TESTING AND THE CULTURALLY DIFFERENT:
A COMPARISON OF PUERTO RICAN AND BLACK CHILDREN

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Hypothesis

It is proposed by this study that cultural differences have an effect on performance when language skills are required, particularly in early years of elementary school. The study attempts to discover the differences in verbal performance between two inner-city ghetto groups, monolingual Blacks and bilingual Puerto Ricans from Harlem, New York. It expects to answer the following questions:

Is Performance I. Q. higher than Verbal I. Q. for both groups?

Is there a difference between the Verbal I. Q. of Puerto Rican children and the Verbal I. Q. of Black children from a ghetto area, as compared to the normative population?

Do bilingual children score lower than monolingual children in verbal tasks and is the difference significant?

It is the hypothesis of this study that bilingual Puerto Rican children's verbal scores will be lower than verbal scores of monolingual Black children and below average as compared to the normative population.

Definitions

In order to facilitate understanding, the meanings
of some terms used in this study are defined as follows:

Bilingual: "using or capable of using two languages"

Culturally different

Culture: "a collective name for all behavior patterns socially acquired and socially transmitted by means of symbols. It includes all that is learned through intercommunication. It covers all language, traditions, customs and institutions. Culture is the universal, distinctive characteristic of human societies." (Dictionary of Sociology, Henry P. Fairchild, Ph.D., L.L.D.)

Cultural: "pertaining to culture - the ideas, customs, skills, arts, etc. of a given people"

Different: "not the same, not alike" (In this study it refers to Puerto Ricans and the Spanish culture.)

Intelligence: "ability to learn or understand from experience; ability to acquire and retain knowledge; mental ability; ability to respond quickly and successfully to a new situation; use of the faculty of reason in problem solving"

Monoglot: "speaking or writing only one language"
Performance: "the act of performing; execution, accomplishment, fulfillment; operation or functioning, usually with regard to effectiveness" (In this study it refers to the scores obtained in specific tasks or in total sum of tasks of the intelligence test used.)

Sub-culture: "a group (within a society) of persons of the same age, social or economic status, ethnic background, etc. and having its own interests, goals, etc." (In this study the ghetto is referred to as a sub-culture.)

Note: All above definitions were obtained from Webster New World Dictionary, 2nd College ed., except where otherwise indicated.
Chapter 2

PROCEDURE

Sample

The sample was chosen from the files of an experienced psychologist from New York City. It consisted of 100 children—25 Puerto Rican males, 25 Puerto Rican females, 25 Black males, 25 Black females—between the ages of six years ten months and seven years two months, chosen at random from the available sample. All children were born in New York City and lived in Harlem since birth. All children had the same amount of years of academic experience—Nursery School and two years of Elementary School—at the time they were tested; and, the same quality of education—Harlem elementary schools basically similar in curriculum and teaching techniques. All one hundred families were of low socio-economic status—receiving public assistance or of very low income—and residents of the ghetto. All Puerto Rican children were bilingual and Spanish was spoken at home. All Black children were monolingual and only English was spoken at home.

Techniques of Measurement

The instrument used was the Wechsler Intelligence Scale for Children. This is a test for the measurement of intellectual abilities as measured by scores obtained in
five Verbal and five Performance tests. The test has been standardized and its reliability is reported to be .92 at age 7-1/2, .95 at age 10-1/2, and .94 at age 13-1/2.

Research Design

An extensive review of files of several psychologists was first conducted in order to find the sample which would meet the prescribed characteristics. Also, a single examiner was preferred in order to eliminate variables that could be introduced by the examiner's experience or individual differences and testing conditions. Fortunately, both conditions were met. An experienced New York City psychologist agreed to lend her files for this research. Almost 500 Wechsler Intelligence Scale for Children tests, administered to Harlem residents of Elementary School age, were available.

The first step was to determine the number of Puerto Rican and Black children and divide them by age categories. The second step was to examine the records of those children in the larger age groups to find their actual academic experience, cultural background (i.e. language spoken at home), and socio-economic status. Those with similar characteristics in each age group were then again sub-divided by year and month in order to choose a sample as close in age as possible. The larger number of cases was between the ages of six years ten months and seven years two months, and
this became the available sample. Finally, the actual sample was chosen at random from the available sample.

Assumptions and Limitations

The study was based on the following assumptions:

1. Typically, children learn to speak a language in their homes through imitation and association with their parents and others, and this home language tends to persist through life as their main medium of thought and communication.

2. The ghetto home and school in general share the same characteristics (i.e. overcrowded conditions, poor communication, little emphasis in schooling, little reinforcement.)

It is also necessary to point out some of its limitations:

1. The inexperience of the researcher - it may introduce or overlook variables that may alter the validity of the study.

2. The limited sample - it may not be large enough to support the findings.

3. The limited time and limited financial means - they prevented the experimenter from carrying out a more complete study with a larger sample.
Analysis of Data

The analysis of data was basically statistical. The scores obtained were tabulated by dividing the sample into two groups: Puerto Rican and Black; and into two sub-groups: males and females. Mean scores of Verbal I. Q., Performance I. Q. and Full I. Q. for each group and sub-group were obtained in order to see the differences and to compare their performances. An analysis of variance was done where differences appeared to be most marked (i.e., Mean Verbal Scores of Puerto Ricans and Blacks) to determine if the difference was significant.
Chapter 3

RESULTS

There were three main questions raised by this study. The first question was related to Verbal Scores as compared with Performance Scores. Table 1 shows the Mean Scores obtained by Ethno Cultural - Sex Groups. It reveals that the Mean Scores of the Verbal I.Q. of each group and each sub-group of the population under study were consistently lower than the Mean Scores of their Performance I.Q. Male Blacks obtained a Verbal Mean I.Q. of 93.44 and a Performance Mean I.Q. of 99.12 - a difference of 5.68 points. Female Blacks obtained a Verbal Mean I.Q. of 88.00 and a Performance Mean I.Q. of 97.68 - a difference of 9.68 points. Female scores for this group were a few points below male scores. The Puerto Rican males obtained a Verbal Mean I.Q. of 79.08 and a Performance Mean I.Q. of 94.64 - a difference of 15.56 points. The female Puerto Ricans obtained a Verbal Mean I.Q. of 79.56 and a Performance Mean I.Q. of 94.14 - a difference of 14.58 points. Females scored slightly higher than males in verbal tasks, while males scored slightly higher than females on the performance scales.

Differences were also observed when the population under study was compared to the normative population - the second question raised by this study. As it appears on Table 1, the Verbal Mean Score for Blacks was 90.72; the
Performance Mean Score was 98.40; and, the Full Mean Score was 93.88— all below that of the normative population. The Verbal Mean Score for Puerto Ricans was 79.32; the Performance Mean Score was 94.39; and, the Full Mean Score was 85.14— all below that of the normative population.

Table 1

Mean Scores by Ethno Cultural - Sex Groups Wechsler Intelligence Scale for Children

<table>
<thead>
<tr>
<th></th>
<th>V. I. Q.</th>
<th>P. I. Q.</th>
<th>F. I. Q.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. Blacks (25)</td>
<td>93.44</td>
<td>99.12</td>
<td>95.72</td>
</tr>
<tr>
<td></td>
<td>90.72</td>
<td>98.40</td>
<td>93.88</td>
</tr>
<tr>
<td>F. Blacks (25)</td>
<td>88.00</td>
<td>97.68</td>
<td>92.04</td>
</tr>
<tr>
<td>M. P. R. (25)</td>
<td>79.08</td>
<td>94.64</td>
<td>85.16</td>
</tr>
<tr>
<td></td>
<td>79.32</td>
<td>94.39</td>
<td>85.14</td>
</tr>
<tr>
<td>F. P. R. (25)</td>
<td>79.56</td>
<td>94.14</td>
<td>85.12</td>
</tr>
</tbody>
</table>

It was the main concern of this study to see if there was a difference between the Verbal I. Q. of bilingual Puerto Rican children and the Verbal I. Q. of Black monolingual children, and if such difference was significant. Table 1 shows a difference between Verbal Mean Scores of both groups: Blacks V. I. Q. = 90.72; Puerto Ricans V. I. Q. = 79.32— a
difference of 11.40 points. An analysis of variance (F) was done to determine the significance of such difference. Table 2 shows the result of the analysis. The difference was found to be highly significant. The value of F was 31.96. The value of F needed for significance at the 5% point was 3.94; at the 1% point, 6.90.

Table 2
Analysis of Variance for V. I. Q.
by Ethno Cultural Groups

<table>
<thead>
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<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Square Mean</th>
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<tr>
<td>Between Groups</td>
<td>1</td>
<td>3113.54</td>
<td>3113.54</td>
</tr>
<tr>
<td>Within Groups</td>
<td>98</td>
<td>9542.50</td>
<td>97.40</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>12656.04</td>
<td></td>
</tr>
</tbody>
</table>

F = 31.96

Note:-- Value of F needed for significance at 5% point: 3.94
Value of F needed for significance at 1% point: 6.90

The hypothesis proposed, namely that bilingual Puerto Rican children's verbal scores would be lower than the verbal scores of monolingual Black children and below average as compared to the normative population, is fully supported by this study.