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PREVIEW

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**Ethnic ability patterns on the Wechsler Intelligence Scale for  
Children-Revised: Relationship to theories of intelligence and  
cognition**

**Suzuki, Lisa A., Ph.D.**

**The University of Nebraska - Lincoln, 1992**

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Ann Arbor, MI 48106

PREVIEW

**ETHNIC ABILITY PATTERNS ON THE WECHSLER INTELLIGENCE  
SCALE FOR CHILDREN-REVISED: RELATIONSHIP TO  
THEORIES OF INTELLIGENCE AND COGNITION**

by

**Lisa A. Suzuki**

**A DISSERTATION**

**Presented to the Faculty of**

**The Graduate College in the University of Nebraska**

**In Partial Fulfillment of Requirements**

**For the Degree of Doctor of Philosophy**

**Major: Interdepartmental Area of Psychological and  
Cultural Studies**

**Under the Supervision of Professor Terry B. Gutkin  
and Associate Professor Lisa M. Larson**

**Lincoln, Nebraska**

**August, 1992**

DISSERTATION TITLE

Ethnic Ability Patterns on the Wechsler Intelligence Scale for Children-

Revised: Relationship to Theories of Intelligence  
and Cognition

BY

Lisa A. Suzuki

SUPERVISORY COMMITTEE:

APPROVED

DATE

Terry B. Gutkin

7/17/92

Signature

Terry B. Gutkin, Ph.D.

Typed Name

Lisa M. Larson, PhD

7/17/92

Signature

Lisa M. Larson, Ph.D.

Typed Name

Barbara S. Flake

7/17/92

Signature

Barbara S. Flake, Ph.D.

Typed Name

Roger H. Bruning

7/17/92

Signature

Roger H. Bruning, Ph.D.

Typed Name

Helen Moore

7/17/92

Signature

Helen Moore, Ph.D.

Typed Name

Signature

Typed Name



GRADUATE COLLEGE  
UNIVERSITY OF NEBRASKA

ETHNIC ABILITY PATTERNS ON THE WECHSLER INTELLIGENCE  
SCALE FOR CHILDREN-REVISED: RELATIONSHIP TO  
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University of Nebraska, 1992

Advisors: Terry B. Gutkin and Lisa M. Larson

This study examined the profiles of abilities for different ethnic groups on the WISC-R. The derived profiles were related to theories of intelligence and cognition.

A total sample of 6,869 nonreferred children were included in this study. Data sets were obtained from sources throughout the United States and Japan. The ethnic groups were White, Hispanic, Black, American Indian, and Japanese.

Ethnic groups were equated for Full Scale IQ utilizing analysis of covariance. Within ethnic group differences were examined and each group was divided to enable cross-validation of procedures.

Discriminant analyses (i.e., classification, canonical and stepwise) yielded results indicating that the different ethnic groups could be discriminated (with the exception of the Hispanic group) with hit rates better than chance. Correct classifications ranged from 9-17% (Hispanic) to 68% (Japanese). Approximately 37-43% of the variance among the ethnic groups could be accounted for by the discriminant procedures. The subtests that consistently accounted for the largest amount of variance were the Vocabulary, Block Design, and Coding subtests. Particular ethnic profiles showed a Vocabulary < Block Design/Coding pattern.

Cluster analyses revealed that the "natural groupings" of cases were not homogeneous with respect to ethnicity.

The theories which accounted for the differences in the WISC-R ethnic profiles were those which separated spatial abilities from verbal abilities. These included: Wechsler's verbal-performance distinction, Cattell's crystallized and fluid intelligences, Kaufman's hemispheric processing, and Vernon's verbal-educative and spatial-mechanical model. The ethnic profiles which fit these theoretical perspectives were the Hispanic, Japanese, and one of the American Indian groups.

Limitations of the study were addressed and caution in interpretation of the profiles was emphasized given that some ethnic groups were sampled regionally and the amount of variance accounted for by ethnicity was moderate. This study suggests future research be conducted incorporating socioeconomic status and gender variables. In addition, examination of a possible "American" profile in comparison to "international" profiles is noted.

PREVIEW



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## CHAPTER I

### Introduction

It has long been recognized that cultural differences between groups may influence the development of distinct patterns of mental abilities (e.g., Anastasi, 1958; Eels, Davis, Havighurst, Herrick, & Tyler, 1962; Lesser, Fifer, & Clark, 1965; Vernon, Jackson, & Messick, 1988). Each "culture tends to select and foster certain abilities and certain ways of behaving" (Anastasi, 1958, p. 570). Ethnic group differences have been of particular interest to investigators with respect to patterns of intellectual abilities (e.g., Backman, 1972; Dean, 1979a; Jensen, 1973; Laosa, 1984; Loehlin, Lindzey, & Spuhler, 1975; Marjoribanks, 1972; McShane, 1980; Reynolds & Jensen, 1983; Stewart, Dole, & Harris, 1967; Vernon et al., 1988).

The study of intelligence and its related abilities, however, has been controversial since its earliest beginnings. Problems in definition, underlying theory, and assessment have plagued the field affecting the derivation and meaningfulness of ability patterns. These problems have been particularly salient in the study of ability patterns among ethnic minority groups.

One major impediment to understanding ability patterns for ethnic minorities has been the almost exclusive focus on issues pertaining to test bias. Although not a major focus for this study, the test bias research is briefly reviewed to provide a context for the major research questions. The focus of this study, however, is on the pattern of abilities characterizing children from different ethnic minority groups rather

than the deficits or discrepancies between the abilities of ethnic minority children in relation to non-minority children.

### Test Bias

Problems surrounding the assessment of intelligence and the derivation of ability patterns for ethnic minorities have been exacerbated by indications that particular ethnic groups score consistently lower on intelligence measures. In particular, the consistent discrepancy between Blacks and Whites on IQ measures is frequently cited (e.g., Garrett, 1947; Jensen, 1985; Kaufman & Doppelt, 1976; Klineberg, 1963; Loehlin et al., 1975; Moore, 1987; Samuda, 1975; Shuey, 1958, 1966). In 1958, a seminal work by Shuey reviewed approximately 72 studies incorporating a total of 36,000 Black children and concluded that Black children tend to score one standard deviation below White children on standardized IQ measures. Indeed, the discrepancy between Blacks and Whites has been deemed by some as one of the most well documented phenomena in psychometrics today (Reynolds, 1982). In addition, research has also indicated that utilizing the WISC-R norms, disproportionate numbers of American Indian children would be classified as retarded based on Verbal IQ scores (Wilgosh, Mulcahy, & Watters, 1986).

A plethora of research has been conducted examining the issues of test bias and cultural loading in attempts to understand the nature of these discrepancies. Studies addressing the cultural bias of intellectual measures have often been unable to prove conclusively that many of our most commonly used instruments [e.g., Wechsler Intelligence Scale for Children-Revised (Wechsler, 1974)] are biased with respect to

particular minority groups (e.g., Oakland & Parmelee, 1985). Discrepancies between Whites, Blacks, and Hispanics are often cited in the literature (e.g., Dean, 1979b; Laosa, 1984; Reynolds, 1982), however, ethnic minority children often do not perform any better on "culture fair tests" than on traditional measures (Sattler, 1988).

Numerous researchers have emphasized the need to recognize that there is a difference between cultural bias and cultural loading (e.g., Reynolds, 1982). "Claims of bias must be based on objective evidence, just as claims of validity and reliability must be substantiated by empirical investigation" (Reynolds, 1982, p. 185). By definition, test bias refers to the following:

systematic error in the estimation of some 'true' value for a group of individuals while test fairness relates to the application of a test in some decision-making process such as selection. As should be clear by now, test bias and test fairness are in fact, separate issues (Reynolds, 1982, p. 186).

A test can, however, be culturally loaded without being culturally biased. Cultural loading refers to the degree of cultural specificity present in a particular test. Nearly all tests in existence are bound in some way to the unique aspects of the culture in which they were developed (Reynolds, 1982). Tests must to some extent be relevant to the definition of intellectual behavior within a particular culture.

The controversies surrounding intelligence have evolved due to the focus on a deficit/discrepancy hypothesis. This hypothesis is based on the following assumption:

a community under conditions of poverty (for it is the poor who are the focus of attention, and disproportionate numbers of the poor are members of minority ethnic groups) is a disorganized community, and this disorganization expresses itself in various forms of deficit(s) (Cole & Bruner, 1971, p. 867).

This hypothesis is reflective of the first crude IQ tests which were used mainly for racial and ethnic exclusion. In 1912, Henry Goddard "scientifically proved that 83% of Jews were 'feeble-minded,' along with 90% of Hungarians, 79% of Italians, and 87% of Russians..." (cited in Fallows, 1980, p. 39).

The recent court cases challenging the usage of intelligence tests with minority children; demands from Black psychologists for a moratorium on intelligence testing (Jackson, 1975); and attempts to reduce the disproportionate numbers of minority children in classes for the mentally retarded are examples of the incidents which have arisen in attempts to resolve the IQ controversy. These attempts also reflect the emphasis placed on the examination of discrepancies between particular ethnic groups.

#### Patterns of Intellectual Ability Among Ethnic Minority Children:

##### Theoretical and Methodological Shortcomings of Prior Work

Moving past the heated and emotional controversies surrounding the question of test bias, a number of substantive problems have hampered our progress in discerning the pattern of intellectual abilities among ethnic minority children. The inability of theoreticians to develop a singular and widely accepted definition of intelligence, the atheoretical development of intelligence measures and a number of other related