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A Comparative Study of the Personality Adjustment, Mental Maturity, and Music Aptitude of the Three Ethnic Groups Represented at Mt. Edgecumbe School, Mt. Edgecumbe, Alaska

Charles Peter Mason
Central Washington University

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A COMPARATIVE STUDY
OF THE PERSONALITY ADJUSTMENT, MENTAL MATURITY,
AND MUSIC APTITUDE OF THE THREE ETHNIC GROUPS
REPRESENTED AT MT. EDGE CUMBE SCHOOL,
MT. EDGE CUMBE, ALASKA

A Thesis

Presented to

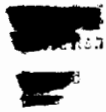
the Faculty of the School of Education
Central Washington College of Education

In Partial Fulfillment
of the Requirements for the Degree
Master of Education

by

Charles Peter Mason

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A thesis submitted in partial fulfillment of the requirements
for the degree of Master in Education in the Graduate School
of the Central Washington College of Education.

APPROVED FOR THE GRADUATE FACULTY

Wayne Hertz, Committee Chairman

Mary Simpson

Maurice L. Pettit

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CHAPTER I

THE PROBLEM AND EXPLANATION OF TERMS USED

Citizens of Mt. Edgecumbe are frequently asked to make comparisons of Aleuts, Eskimos, and Indians in their talents, personalities, and intelligence. These questions have often been answered with rather positive statements based on an individual's own subjective contacts with these natives. "Indians will steal you blind." Eskimos are more friendly than Indians." "Aleuts are smarter than Eskimos." "All Tlingits are lazy boondoggers." These and similar assertions are recurrent replies by teachers and others to questions asked about the natives.

All too often, these self-appointed "authorities" are merely preaching discrimination based on their own biased opinions with no attempt to discover the truth of such assertions and, in fact, ignoring any suggestions that these statements may not be based upon factual information.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study to compare the three ethnic groups--Aleuts, Eskimos, and Indians--

represented at Mt. Edgecumbe School in intelligence, personality, and musical talent to discover any basic differences that might exist between the three groups in the categories listed.

Importance of the study. Beliefs such as those described in the introductory remarks would not in themselves justify a study of this nature. However, these beliefs are often expressed by persons of social or educational prominence and are frequently accepted at face value by the listener.

Remarks of this type, expressed about individual groups of natives, are harmful to both the natives who must listen to these comments about themselves and to the individual expressing them. This type of comment may readily create a barrier which cannot be crossed to establish the necessary rapport for effective work with these natives. This would seem to be especially true in education.

Are the potential capabilities and personalities of these native groups dissimilar? If so, to what extent do they differ? In this study, an attempt was made to answer these questions using scientific instruments of an objective nature. It was the intent of the writer to eliminate subjective methods as completely as possible.

II. EXPLANATIONS OF TERMS

Ethnic groups: Aleuts, Eskimos, and Indians. The three ethnic groups to be treated in this thesis are Aleuts, Eskimos, and Indians. No attempt will be made to give an ethnological description of these natives. However, a brief discussion of their origin and their habitat will follow to acquaint the reader with the groups and the areas from which they come to attend Mt. Edgecumbe School.

Geographical locations. Each of the ethnic groups inhabit a rather distinct geographical region of the Territory of Alaska.

Anderson and Eells describe the habitat of these Natives as follows:

The native peoples inhabit distinct geographical divisions. The habitat of the Alaska Eskimo is a strip of country extending along the coast and inward to a distance of approximately 100 miles from Point Demarcation at the international boundary on the Arctic Ocean to Ugaschick village on Bristol Bay, a total distance of approximately 3,500 miles. The Aleuts overlap slightly the Eskimo territory in Bristol Bay and occupy both sides of the Alaska Peninsula as well as the Aleutian Islands. The Indians are of several tribes, the Athapascan or Tinne occupying the interior of Alaska, being contiguous with the Eskimos at many points where the latter have penetrated along the great waterways. The coast Indians are the Haidas, Tlingits, and Tsimpshians, who occupy the coastal area of Cooks Inlet, the Gulf of Alaska and the shore of Southeastern Alaska.¹

¹D. H. Anderson and W. C. Eells, Alaska Natives: A Survey of Their Sociological and Educational Status (Palo Alto: Stanford University Press, 1935), p. 6.

For this study the division of Indians into tribes as listed by Eells in the previous quotation will not be made. Ethnically, Athapascans, Haidas, Tlingits, and Tsimpashians are classified as Indians and will be treated as one group in this writing.

All three groups--Aleuts, Eskimos, and Indians--are native inhabitants of Alaska. When reference is made to the groups combined, they will be referred to as Alaska Natives or, merely, Natives.

Origins. Anthropologists disagree about the origin of these people. America, Europe, and Asia are all credited as the point of origin by various authorities. According to Anderson and Eells, ". . . the weight of evidence favors the theory that both Eskimos and Indians have had a common origin in Asia . . ." ² They also state in effect that the Indians arrived earlier than the Eskimos and that the Eskimo found his movement southward hampered by the Indians who had settled in these directions and was thus forced to settle in the coastal areas they now inhabit. ³

Mt. Edgecumbe School. Mt. Edgecumbe School is located on Japonski Island, an off-shore island approximately one-fourth of a mile from Sitka, in Southeastern Alaska. This school, operated by

²Ibid., p. 19.

³Ibid.

the Alaska Native Service has as its beneficiaries over six hundred native students from nearly all of the villages of the territory. It is a boarding school. A student's entire life is in the hands of the faculty, advisers, and fellow students for nine months or more each year.

Educationally, a great amount of emphasis is placed upon vocational training. This is in keeping with Federal government policies of financial aid in vocational education. Courses ranging from practical nursing and dental training to boat building and deisel motors are included in the vocational program.

In addition to the extensive vocational program provided at Mt. Edgecumbe School, a completely accredited high school curriculum is also available to the native youngsters.

The school day has been divided into seven class periods and a lunch period each day. Students were allowed choices of a full-day vocational program, a half-day vocational and half-day academic program or a full day of academic classes.

The students of this school--Aleut, Eskimo, and Indian youngsters from all parts of the Territory of Alaska--were tested in mental maturity, personality, and music talent for comparison in this study to determine group differences among the three ethnic groups that might be recorded.

III. ORGANIZATION OF THE SUCCEEDING CHAPTERS

Chapter two, following, consists of a review of literature related to the problem presented in this writing. Consideration has been given to the general problem of testing and to other studies of the three ethnic groups.

In chapter three will be found a discussion of the California Test of Personality, the California Test of Mental Maturity, and the Kwalwasser Test of Musical Talent. Also included in this section is an account of the sampling technique used and, correspondingly, the students tested.

Chapter four presents an analysis of the results of the mental maturity, personality, and music talent tests, respectively.

The final chapter, number five, summarizes the findings of the test results and presents the conclusions of the writer resulting from this study.

CHAPTER II

REVIEW OF THE LITERATURE

Much has been written about testing for mental maturity, personality, and music talent. It was not the intent of this study to test tests but rather to test groups of people. However, a few of the problems of testing as related to this study should be presented to acquaint the reader with some of the considerations which were unique to the testing of the students of Mt. Edgecumbe School.

Also, a review of previous studies has been included in this chapter.

I. PROBLEMS OF TESTING

Intelligence tests. About the problem of testing general hereditary capacity, Herman, May, and Hackman have this to say:

The crucial problem raised by the attempt to compare scientifically the capacity of any two individuals to learn is that of finding situations with which the two individuals have had equal experience. . . . Two major systems of behavior are involved in problem solving. They are (a) the individual's genetic equipment for problem solving; and (b) the individual's particular cultural experience, training, and motivation, which have developed certain areas of his mental behavior and certain skills more than others. In a test of general heredity

capacity, the second factor must be equalized for all those tested.¹

From this it would seem that a common cultural background would be an essential element in the comparison of group intelligence scores on the basis of a testing program. A further view in this direction is expressed by Davis when he says, "The sociologist and social anthropologist have been convinced, through studies of a great many societies, that cultural learning runs through nearly all the 'mental' behavior of human beings."²

Considering these views as accurate, it should be possible to compare, by the use of tests and measurements, the Aleut, Eskimo, and Indian races at Mt. Edgecumbe School. Only a small minority of these students come from the urban areas of Alaska. The majority of students are from small villages (one hundred to five hundred population) of the more remote areas of the territory. This being the case, the writer feels that reactions to questions of an unfamiliar nature in the tests should balance from one group to another. There is a possibility, though, that the Indian group may be influenced more by urban

¹Herman, May, and Roy B. Hackman, Distribution of Scores on the Weschler-Belvue and the California Test of Mental Maturity at a V. A. Guidance Center, " Journal of Applied Psychology XXXII (December, 1948), p. 644.

²W. Allison Davis and R. J. Havigharst, "The Measurement of Mental Systems: Can Intelligence Be Measured?" Science Monthly LXVI (April, 1948), p. 302.

culture than the Aleuts and Eskimos as most of the natives from the urban areas are of the Indian race. Juneau, Ketchikan, Sitka, Douglas, Wrangel, Skagway, Petersburg, Anchorage, and Fairbanks are all located in areas where the native population is mostly Indian. However, as only a small number of pupils are admitted to Mt. Edgecumbe School from these areas, the urban cultural influence of these students should not significantly change the test results.

In addition to the village life common to most of the native students, life at Mt. Edgecumbe School should tend to equalize the "cultural experience, training and motivation" of all three ethnic groups.

A further consideration should be given to the problem of comparing test scores of groups culturally removed from the area for which a test has been designed. This consideration is in the realm of test construction. Traxler says:

The more common procedure in constructing tests has been to base the questions on which everyone for whom the test is designed has presumably had an opportunity to learn. The assumption is that under these conditions, those who have learned the most are the most intelligent.³

This criterion has not been met completely for the students tested. Obviously, the natives from the villages have not had an

³A. E. Traxler, Techniques of Guidance (New York: Harper and Brothers, 1945), p. 45.

equal opportunity to learn the material presented in the tests as have those for whom the tests were designed. As this study has made no attempt to compare these natives with others, but rather with themselves, this criterion should not prohibit the comparison of the groups.

Personality tests. Proponents of the interview technique of studying personality traits have questioned the validity and reliability of the questionnaire approach to personality studies. However, even such authorities as Frank, Moore and Steele, Spencer, and Terman admit that "they (questionnaires) may sometimes give an adequate picture of a group of persons . . ."4

Traxler says that ". . . personality tests furnish almost the only available means of systematically collecting helpful, although admittedly inadequate and imperfect, information in this important area."5 He further states that "it is apparent that most personality tests are reliable enough for groups studies."6

As this writing was an effort to compare groups and not individuals, it was considered appropriate to use questionnaires to

⁴Ellis, "The Validity of Personality Questionnaires," Psychological Bulletin XLIII (September, 1946), p. 387.

⁵Traxler, op. cit., p. 98.

⁶Ibid., p. 107.

gather the information for comparisons. There were no persons in the school area with sufficient qualifications to gather the information from personal interviews.

Music Talent testing. Dr. Kwalwasser says of musical talent testing:

It is now an established fact that a child may be accurately measured for musical talent before he has been given any musical instruction whatsoever. Furthermore, he can be tested at a very early age since what we are testing is his auditory potential and not the influence of training. . . .

Where great differences in scores are found between individuals, the difference is due to superior equipment on the part of the superior individual and is unlikely to be linked with training, intelligence, sex, or nationality.⁷

The effort in this study has been to test music aptitude or potential, not training or desire. This can be measured with more accuracy than the personality traits and probably more accurately than intelligence.

II. RELATED ETHNIC STUDIES

The most extensive testing of the Alaska Natives has been done by Anderson and Eells. This survey of the sociological and

⁷J. Kwalwasser, Kwalwasser Music Talent Test Instruction Manual (New York: Mills Music Company), p. 3.

economic status of these natives included an extensive testing program in an effort to "secure measures of basic intelligence, school achievement, musical ability, and eyesight and hearing."⁸ Of these measurements, two--intelligence and musical ability--are closely related to this study.

In their survey, Anderson and Eells used the Stanford-Binet Test to get intelligence quotients of seventy-nine and eighty for Indians and Aleuts. For Eskimos, a mean intelligence quotient of seventy-four was found. The Aleut and Indian intelligence quotients failed to show any differences; however, the seventy-four mean for Eskimos was significantly lower than the other two groups.⁹

These scores have more significance when compared with the results of the same test applied to other ethnic groups. Table I shows a comparison of mean intelligence quotients of other races. The Aleut, Eskimo, and Indian mean intelligence quotient scores of eighty, seventy-four, and seventy-nine, respectively, place them above the American Indian and about equal to the Mexicans and Southern Negroes.

⁸D. H. Anderson and W. C. Eells, Alaska Natives: A Survey of Their Sociological and Educational Status (Palo Alto: Stanford University Press, 1935), p. 6.

⁹Ibid., p. 307.

TABLE I
MEAN INTELLIGENCE QUOTIENTS
FOR VARIOUS RACIAL GROUPS¹⁰

<u>Racial Group</u>	<u>I. Q.</u>
Whites	100
Japanese	99
Chinese	99
Northern Negroes	85
Hawaiians	84
Mexicans	78
Southern Negroes	75
American Indians	70

¹⁰Ibid., p. 308.

Anderson and Eells suggest:

When it is remembered that they (Alaska Natives) have not had the opportunities for contacts with white civilization which have characterized almost all of the other groups tested in the United States proper, it is likely that their real ability is somewhat superior to these.¹¹

To test musical ability, Anderson and Eells used the Seashore Measures of Musical Talent. From this test they report a "definite inferiority for all three races in each of the tests at every grade level."¹² This was in comparison with established norms for the test.

In comparison with other races--Negroes, American, Indian, and Hawaiians, Anderson and Eells reported ". . . the Alaska races show as much, if not more inferiority than that reported for other races."¹³

¹¹Ibid., p. 309.

¹²Ibid., p. 336.

¹³Ibid., p. 338.

CHAPTER III

METHODS OF APPROACH

The three tests used for this study, The California Test of Mental Maturity, The California Test of Personality, and the Kwalwasser Test of Musical Talent, were administered to the students as a part of the school guidance records program. These tests were then corrected and tabulated by a committee of four faculty members. The results of the tests were made available for this writing through the school administration.

I. THE TESTS USED

The California Test of Mental Maturity. The California Test of Mental Maturity is divided into four main parts--memory, spatial relationships, reasoning, and vocabulary, with subtests for each of these. The scoring of these parts results in three intelligence quotients--total mental, language, and non-language. Most comparisons of the ethnic groups were made on the basis of these intelligence quotients, although mental age and percentile rank for age scores were also recorded.

Traxler reports two sets of reliability coefficients for this test. The first set by the authors are total mental, .96; language, .95; and non-language, .94. The second set, from the Journal of Educational Research, are total mental factors, .92; language factors, .91; and non-language, .86.¹ Although these coefficients do not coincide, they are sufficiently high to be considered at least moderately significant, if not highly significant.

The California Test of Personality. The California Test of Personality is designed to measure personal and social adjustment. Components of self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies and nervous symptoms purport to measure personal adjustment. Social adjustment is measured by component scores in social standards, social skill, freedom from anti-social tendencies, family relations, and community relations.

Traxler reports a split half reliability of the second battery as .931.² For personality tests, this would seem to be quite high, for, as Traxler says, "The reliability coefficient of most personality tests is between .70 and .90."³

¹A. E. Traxler, Techniques of Guidance (New York: Harper and Brothers, 1945), pp. 53-54.

²Ibid., p. 120.

³Ibid., p. 107.

The Kwalwasser Music Talent Test. The Kwalwasser Music Talent Test, "Form A consists of 50 3-tone patterns which are repeated with variation in one of the following respects (a) pitch (b) time (c) rhythm (d) loudness."⁴

Kwalwasser describes the extremes of the test in the following manner:

In Form A, controlled differences in pitch range from 5 to 70 cents (a cent represents 1/100th of a semitone). In time, the tempo changes vary from 40% to 5% of the standard metronomic marking of 90 to the quarter note. In loudness the variation ranges from 10 to 2 decibels from the standard. In rhythm, organizational changes in duration vary from the easily recognizable differences at the beginning of the test to progressively more difficult patterns toward the close of the test.⁵

II. GROUPS TESTED

Sampling Technique. To enter Mt. Edgecumbe School, students must be able to establish proof of at least one-fourth or more native lineage. The school records include this information on each pupil. It was from these records that students were classified for this study. For comparisons, the students were grouped as full, three-fourths, one-half, or one-fourth Aleut, Eskimo, or Indian. Random samples were chosen for each classification in ratio

⁴J. Kwalwasser, Kwalwasser Music Talent Test Instruction Manual (New York: Mills Music Company), p. 4.

⁵Ibid., p. 5.

to the percent of each group represented in the school.

Sampling Results. The results of the sampling are shown in Table II. Tabulations show two total lists. From top to bottom in the right-hand column are tallies of nineteen, thirty-eight, and forty-three for Aleuts, Eskimos, and Indians respectively. Reading from left to right in the bottom column are the numbers of students in per cent of native blood. There are forty-one full natives, sixteen three-fourth natives, thirty-two one-half natives, and eleven one-fourth natives in the column. These tallies are in keeping with the per cent of each group represented in the school. The sampling discussed as shown in Table I was used for comparison of scores on the California Test of Mental Maturity and the California Test of Personality.

Late arrival of the Kwalwasser Music Talent Test, combined with the early departure from school of some of the Mt. Edgecumbe students, changed the distribution of the samplings used for the music talent data. The Aleut samples were changed to three one-fourth, four one-half, two three-fourths, and five full Aleuts, making a total of fourteen Aleuts tested. In the same order of native heritage, the Eskimo tallies were changed to four, ten, three, and seventeen for a combined total of thirty-four. The Indians were also minus a few

students for this test with three, fourteen, five, and sixteen students in each category which lowers this sampling to a figure of thirty-eight. These figures are summarized in Table III.

The reader may question the use of so few students representing the three-fourths and one-fourth native categories. The writer has limited all definite conclusions to the total groups discussed. Trends as affected by the per cent of native blood in each ethnic group have been described in the section concerning adjustment but, aside from this, all considerations are for the larger classifications.

TABLE II

ETHNIC DISTRIBUTION OF STUDENTS TESTED
FOR MENTAL MATURITY AND PERSONALITY SCORES

Group	4/4 Blood	3/4 Blood	1/2 Blood	1/4 Blood	Total
Aleut	5	4	6	4	19
Eskimo	19	4	11	4	38
Indian	17	8	15	3	43
Total	41	16	32	11	100

TABLE III
 ETHNIC DISTRIBUTION OF THE STUDENTS
 TESTED FOR MUSIC TALENT

Group	4/4 Blood	3/4 Blood	1/2 Blood	1/4 Blood	Total
Aleut	5	2	4	3	14
Eskimo	17	3	10	4	34
Indian	16	5	14	3	38
Total	38	10	28	10	86

CHAPTER IV

RESULTS OF THE INDIVIDUAL TESTS

The results of the California Test of Mental Maturity, the California Test of Personality, and the Kwalwasser Music Talent Test, as applied to the students of Mt. Edgecumbe School, were tabulated. Then, comparisons by ethnic classification and by per cent of native heritage were made of the three races studied. This chapter presents the results of these comparisons of intelligence, personality, and music talent.

I. THE CALIFORNIA TEST OF MENTAL MATURITY

Summary of Intelligence Quotient Data by Ethnic Groups. For ethnic comparisons of intelligence quotients, test results, were recorded in three categories: (a) total mental, (b) language, and (c) non-language. By using the formula found in Edwards,¹ a median score was tallied for each group and the results recorded in Table IV. Mean total mental scores were Aleuts, 95.85; Eskimos, 98.6; and Indians, 97.25. In the same order, median scores of 100.9, 99.2, and 96.2 were recorded for the non-language sub-test.

¹A. L. Edwards, Statistical Analysis (New York: Rinehart and Company, Inc., 1948), p. 330.

TABLE IV

MEAN INTELLIGENCE QUOTIENTS: ALEUTS, ESKIMOS, INDIANS

	Total Mental	Language	Non-language
Aleut	95.85	95.4	100.9
Eskimo	98.60	97.8	99.2
Indian	97.25	95.85	96.2

To decide the importance or significance of the differences in mean scores the results of the tests were again exposed to the mathematics of Edwards.² A comparison of the differences of the mean scores of Aleuts-Eskimos, Aleuts-Indians, and Indians-Eskimos in each sub-test were divided by the standard deviation of the mean difference to produce a t score. This t score was then compared to the five per cent level of significance listed in Edwards.³

For the Eskimo-Indian total mental test, a t score was found of 1.23. This sum was less than the 1.99 necessary to be of significance. An Aleut-Eskimo comparison produced a t figure of 2.000; .005 less than that necessary to be of significance. Aleut-Indian results were also of no significance with a .63 t score being less than the 2.000 level necessary for significance.

As in the total mental results, the language t figures of .81, .69, and 1.004 for Eskimo-Aleut, Eskimo-Indian, and Aleut-Indian comparisons were substantially less than the levels of significance listed in the previous paragraph.

Results of the non-language t scores were much the same as those in the total mental and language studies with all comparisons showing no significant differences.

²Ibid.

³Ibid., p. 330.

Although all of the t scores recorded were less than the level of significance, the Aleut-Eskimo comparison which produced a t score of 2.000, only .005 less than the level of significance, must be considered large enough to be of possible significance.

Table V presents the t scores and the level of significance for the three sub-tests discussed.

Mental age and percentile rank for age. The mental age and percentile rank for age scores will not be presented in detail in this writing. The differences in these sub-test scores were generally in the same ratio as those of the intelligence quotient results. Based on the findings of the intelligence quotient levels of significance, it is safe to say that there are also no significant differences between Aleuts, Eskimos, and Indians of Mt. Edgecumbe School in mental ages or percentile rank for age.

Intelligence quotients by per cent of native heritage. Because of the high median scores produced by the one-fourth Indians, a sampling of only three persons, it was decided that a true comparison could not be made of each ethnic group by per cent of native heritage. Instead, it was decided to compare all of the natives in each classification, thus using larger groups and producing more nearly accurate median scores for comparison.

TABLE V

INTELLIGENCE QUOTIENT T SCORES AND LEVELS OF SIGNIFICANCE

	T SCORE	LEVEL OF SIGNIFICANCE
TOTAL MENTAL		
Eskimo-Aleut	2.000	2.005
Eskimo-Indian	1.23	1.99
Aleut-Indian	.63	2.000
LANGUAGE		
Eskimo-Aleut	.81	2.005
Eskimo-Indian	.69	1.99
Aleut-Indian	1.004	2.000
NON-LANGUAGE		
Eskimo-Aleut	1.09	2.005
Eskimo-Indian	1.08	1.99
Aleut-Indian	.61	2.000

Table VI presents the median scores of the full, three-fourths, one-half, and one-fourth natives.

With the exception of the non-language median of 98 for the one-fourth native classification and the language median of 88 for the three-fourth native group, the median scores gradually increased in the progression from full to one-fourth natives. Checking the extremities of the total mental results, 96 to 103, a t score of 1.709 was found. Compared to the 2.008 level of significance for the two groups, it seemed that this difference was not large enough to demonstrate any real variance in total mental ability among these groups.

As there were no scores showing a wider deviation than the six points from 96 to 103 in the total mental scores, there should also be no significant differences in the language and non-language sub-tests of intelligence quotients.

The results of comparing full, three-fourths, one-half, and one-fourth natives then forces the conclusion that, although there are differences in median scores tending toward higher results as the per cent of native heritage diminishes, none of these differences are large enough to demonstrate a significant difference in the potential capacity of each group to learn.

For the statistically minded, appendixes A through Y illustrate the distribution of the three ethnic groups, both as total groups and

TABLE VI
MEDIAN INTELLIGENCE QUOTIENTS
BY PER CENT OF NATIVE HERITAGE

	1/4 Native	1/2 Native	3/4 Native	4/4 Native
Total mental	103	97	97	96
Language	102	97	88	95
Non-language	98	103	102	96

in per cent of native heritage, in intelligence quotients, mental ages, and percentile rank for age.

II. THE CALIFORNIA TEST OF PERSONALITY

Distributions by percentile rank. Tables VII a, b, and c show the distribution by percentile rank of Aleut, Eskimo, and Indian students tested in both personal and social adjustment. The distribution of scores is shown on the upper portion of the tables. Below this are the totals, means, norms, and standard deviations from the norms.

In personal adjustment all three ethnic groups demonstrate a tendency toward better adjustment as the per cent of native heritage decreases. The Indian deviation scores were: full Indian, -30.8; three-fourths Indian, -22.5; one-half Indian, -14.1; and one-fourth Indian, -6. This tendency toward better adjustment as the per cent of native heritage decreases was quite pronounced in the Indian students. It was equally evident in the Eskimo scores of -26.7, -25, -14.6, and 5. The Aleut deviation scores were somewhat the same with -20, -15, -22, and -7.5 scores for each lineage classification. The one-half Aleut deviation of -22 is the only score that failed to diminish with the decreased native heritage.

TABLE VIIa

PERSONAL AND SOCIAL ADJUSTMENT
DISTRIBUTION BY PERCENTILE RANK OF ALEUT STUDENTS

Degree	4/4		3/4		1/2		1/4	
	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment
Percentile Rank								
1								
2					1	1		
5	2	1						
10		1	1		1	1		1
20	1	2		1	1	2	2	
30				1	1	2		1
40			2					
50	1		1	1	2			
60							1	1
70	1	1		1			1	1
80								
90								
95								
98								
99								
Total	5	5	4	4	6	6	4	4
Mean	30	15	35	42.5	28	18.7	42.5	42.5
Norm	50	50	50	50	50	50	50	50
Deviation	-20	-35	-15	-7.5	-22	-31.3	-7.5	-7.5

TABLE VIIb

PERSONAL AND SOCIAL ADJUSTMENT
DISTRIBUTION BY PERCENTILE RANK OF ESKIMO STUDENTS

Degree	4/4		3/4		1/2		1/4	
	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment
Percentile Rank								
1	1					1		
2	1				1			
5	4	2			1			
10	1	2	1					
20	5	5	1	1	1	1		
30	3	2	1	2		1		
40		2	1	1	3	6	1	
50	3	4			4			2
60		2			1	1	3	1
70	1							
80								1
90						1		
95								
98								
99								
Total	19	19	4	4	11	11	4	4
mean	23.3	31	25	30	35.4	40.1	55	50
Norm	50	50	50	50	50	50	50	50
Deviation	-26.7	-19	-25	-20	-14.6	-9.9	+5	+10

TABLE VIIc

PERSONAL AND SOCIAL ADJUSTMENT
DISTRIBUTION BY PERCENTILE RANK OF INDIAN STUDENTS

Degree	4/4		3/4		1/2		1/4	
	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment	Personal Adjustment	Social Adjustment
Percentile Rank								
1		1						
2	1				2		1	
5	3	2	2	1	2	2		
10	3		2	1		2		1
20	3	2	1	1	1	1		
30	6	5		1	3	1		
40	1	4		2	2	3		
50		1	1		2	2		
60			2	2			1	2
70		1			2	3	1	
80		1						
90						1		
95					1			
98								
99								
Total	17	17	8	8	15	15	3	3
Mean	19.2	33	27.5	33.2	35.9	40	44	43.3
Norm	50	50	50	50	50	50	50	50
Deviation	-30.8	-17	-22.5	-16.8	-14.1	-10	-6	-6.7

As in personal adjustment, the social adjustment scores deviate further from the norm in full natives and tend toward better adjustment as the per cent of native blood decreases. This tendency is more noticeable among the Indians and Eskimos than among the Aleuts.

Deviation of component scores. In tables VIIIa, b, and c may be found the standard deviation of the three ethnic groups in each lineage classification for these components. As in the distribution by percentile rank tables, the outstanding feature of the component deviation scores is the tendency toward a smaller deviation from the norm by all three groups as the per cent of native heritage decreases.

The content of these tables suggests a possibility for further study. Aleuts, Eskimos, and Indians as total groups did not vary significantly in their deviation scores. However, deviation for full to one-fourth natives was much greater. In reference to Herman, May and Hackmans statements quoted in chapter two,⁴ the possibility must be considered that test deviations may have been influenced by the cultural background of the parents of races other than Native. This seems probable as the California tests were not designed for an

⁴Herman, May, and Hackman, loc. cit.

TABLE VIIIa
 PERSONALITY TEST COMPONENTS
 DEVIATION SCORES OF ALEUT STUDENTS

Components	4/4	3/4	1/2	1/4
Personal Adjustment				
A. Self-Reliance	-30	-10	0	+20
B. Sense of Personal Worth	-10	-10	-20	0
C. Sense of Personal Freedom	0	0	0	+10
D. Feeling of Belonging	-20	-10	-20	0
E. Withdrawing Tendencies	0	-10	-20	-10
F. Nervous Symptoms	0	-30	-30	-10
Norm	50	50	50	50
Social Adjustment				
A. Social Standards	-10	0	0	-10
B. Social Skills	-10	0	-30	0
C. Freedom from Anti- Social Tendencies	-20	-20	-40	-40
D. Family Relations	-30	+10	-10	+30
E. School and/or Occupa- tional Relations	-40	0	-30	0
F. Community Relations	-20	-10	-10	+10
Norm	50	50	50	50

TABLE VIIIb
PERSONALITY TEST COMPONENTS
DEVIATION SCORES OF ESKIMO STUDENTS

Components	4/4	3/4	1/2	1/4
Personal Adjustment				
A. Self-Reliance	-30	-30	-20	-10
B. Sense of Personal Worth	-30	-30	-20	+20
C. Sense of Personal Freedom	-20	-10	-10	0
D. Feeling of Belonging	-30	-30	-30	+10
E. Withdrawing Tendencies	-10	-20	+10	+10
F. Nervous Symptoms	-10	-10	0	0
Norm	50	50	50	50
Social Adjustment				
A. Social Standards	-10	-20	0	0
B. Social Skills	-10	-20	-10	0
C. Freedom from Anti- Social Tendencies	0	-30	0	0
D. Family Relations	-10	0	-10	+30
E. School and/or Occupa- tional Relations	-30	0	0	+10
F. Community Relations	-20	0	+10	0
Norm	50	50	50	50

TABLE VIIIc
PERSONALITY TEST COMPONENTS
DEVIATION SCORES OF INDIAN STUDENTS

Components	4/4	3/4	1/2	1/4
Personal Adjustment				
A. Self Reliance	-40	-30	-20	-10
B. Sense of Personal Worth	-20	-20	-20	-10
C. Sense of Personal Freedom	-30	-30	0	↓20
D. Feeling of Belonging	-20	-20	-20	↓40
E. Withdrawing Tendencies	-20	-20	0	-10
F. Nervous Symptoms	-30	-20	-10	0
Norm	50	50	50	50
Social Adjustment				
A. Social Standards	-10	-10	-10	-10
B. Social Skills	0	-10	-10	-10
C. Freedom from Anti- Social Tendencies	-20	-10	0	↑20
D. Family Relations	-10	-10	0	-10
E. School and/or Occupa- tional Relations	-10	-10	-30	-10
F. Community Relations	-20	-10	-20	0
Norm	50	50	50	50

Alaska Native Culture. It would seem likely that the "cultural experiences, motivation, and training . . ."5 have not been equalized for the natives of this school. Perhaps a further study should be made to determine more accurately the significance of these deviation scores.

III. THE KWALWASSER MUSIC TALENT TEST

Ethnic and native heritage test results. Table IX taken from the Kwalwasser Music Talent Test Manual makes it possible to convert actual test scores into percentile levels. Median scores for each group taking the test were compared with this table to find the median percentile level for all three groups.

The distribution, median scores, and median percentile scores of the three ethnic groups are shown in Table X. In general the scores are fairly equally distributed from a low of twenty-two to a high of forty-two. There are two extremes beyond these, however, with a low score of fifteen and a high score of forty-seven. The high score was achieved by a one-fourth Aleut boy. This same student scored very high in all of the California tests. The low score of fifteen was made by a full Eskimo girl. She arrived at Mt. Edgecumbe

⁵Ibid.

TABLE IX

KWALWASSER MUSIC TALENT TEST ⁶

TABLE -- FORM A

Senior High School and College

<u>Test Score</u>	<u>Percentile Level</u>
Above	100
48	100
47	98
46	97
45	95
44	93
43	90
42	86
41	81
40	76
39	70
38	60
37	50
36	41
35	37
34	32
33	23
32	18
31	13
30	10
29	8
28	5
27	4
26	3
25	2
24	1
Below	0

⁶Kwalwasser, Jacob, Kwalwasser Music Talent Test Instruction Manual (New York: Mills Music, Inc.), p. 11.

TABLE X
MEDIAN AND PERCENTILE SCORES
OF THE MUSIC TALENT TEST

	Score	Percentile Level
Aleut	33	23
Eskimo	32	18
Indian	32	18
Combined Groups	33	23
Full Native	33	23
3/4 Native	33	23
1/2 Native	32	18
1/4 Native	31	13

School in September of 1954 with the knowledge of a single language, her native tongue. This same girl scored very low in the other tests. It was the opinion of her teachers that she had at least an average intelligence but that she was definitely handicapped by a language barrier in her association, both academic and social, in the school.

The median score on this test for all three ethnic groups combined was a thirty-three which is at the twenty-third percentile level.

A comparison of Aleut, Eskimo, and Indian scores in this test indicates they are very much the same. The Aleut median score was thirty-three. The Eskimos and Indians recorded a thirty-two median. These median scores placed the Indians and Eskimos in the eighteenth percentile and the Aleuts placed in the twenty-third percentile level.

Although the Aleuts had the higher median score, they had only one student test over the fifty percentile point. The rest of this group was at the fifty percentile point or less. The Indian group, however, had nine and the Eskimo group had ten students over the fifty percentile level.

The low median scores discussed above indicate an inferior music ability of the average native student of Mt. Edgecumbe School. Anderson and Eells, in 1935, using the Seashore Measure of Musical

Talent, reported: "In grades 5 to 9 . . . the median performance for the Eskimos is at only about the 35-percentile point; for the Aleuts about the 25-percentile point; and for the Indians about the 30-percentile point."⁷

Although the Anderson and Eells report was based on studies of intermediate and junior high school students the percentile points were low. This tends to support the low results recorded by the Kwalwasser test used for this study.

The Kwalwasser Music Talent Test is not so devised as to compare percentile levels on the components of the test. However, a numerical report of the number of errors made on these components may be of interest to the reader. In the test of fifty answers, fifteen require recognition of a change in pitch, fourteen a change in time or tempo, eleven a change in rhythm, and ten a change in intensity or loudness.

Of the errors recorded, there were 652 pitch errors, 393 time errors, 253 rhythm errors, and 192 intensity errors. There were almost twice as many pitch errors as in any of the other three categories. Pitch and time errors accounted for slightly over 70 per cent, or 1,045 of the 1,490 errors made.

⁷Anderson and Eells, op. cit., p. 336.

CHAPTER V

SUMMARY AND CONCLUSIONS

I. MENTAL MATURITY

Mental Maturity by ethnic groups. A study of the intelligence quotient scores of the three ethnic groups did not produce any differences in median scores large enough to be of significance. This includes comparisons of the t scores of all three groups, in the total mental, language, and non-language scoring of the test. The conclusion to be drawn from these tests must be that as total groups, there are no significant differences in the capacity to learn of the Aleut, Eskimo, and Indian students of Mt. Edgecumbe School.

Mental age and percentile rank for age scores were within the limits of the results of the intelligence quotients. From this, then, it may be assumed that median total mental, language, and non-language scores in the mental ages and percentile rank for age scorings would not reveal any significant differences between the three ethnic groups.

Mental maturity by per cent of native heritage. A tendency was established in Table VI toward higher median intelligence scores

as the per cent of native lineage decreased. However, the widest divergence of scores did not produce a t score of sufficient size to show a significant difference when compared to the level of significance tables in Edwards.¹ It may be concluded then that there is no significant difference in the capacity to learn of the one-fourth, one-half, three-fourths, and full natives.

Personality adjustment by per cent of native heritage. The results of the personal and social adjustment tests tend to show that as the per cent of native blood decreases, adjustment increases among all three ethnic groups.

These test results indicate a possibility for a more extensive study in this area. At least three alternatives could explain the differences in deviation scores. (1) An actual difference in adjustment may exist as the scores indicate. (2) The sampling of three-fourths and one-fourth natives may not have been large enough to draw an accurate picture of their adjustment. (3) The cultural background of the natives of less native heritage may have been more beneficial toward answering the questions in the manner for which the test was designed. Perhaps a study, more extensive in scope and using several

¹A. L. Edwards, Statistical Analysis (New York: Rinehart and Company, Inc., 1948), p. 330.

tests, would shed more light on these adjustment differences.

Music talent. There were no significant differences in the music talent test results. Only one point separated the mean scores of the groups tested. This included comparisons of ethnic groups and comparisons by per cent of native heritage. All of the median test results placed the groups between the eighteenth and twenty-third percentile level. The differences were not large enough to be of any consequence.

These scores indicate an inferior music potential for all of the groups tested. Although there were some very high scores with one student at the ninety-eighth percentile point, the median scores for each ethnic group were very low. The outcome of this testing tends to bear witness to the findings of Anderson and Eells. They report findings of between twenty-five and thirty-five percentile point levels for full Aleut, Eskimo, and Indian children in the intermediate and junior high grades.²

A numerical analysis of the errors made in the test portrayed a very high per cent of errors in time and pitch. These categories

²D. H. Anderson and W. C. Eells, Alaska Natives: A Survey of Their Sociological and Educational Status (Palo Alto: Stanford Press, 1935), pp. 336-37.

accounted for 1,045 of the 1,490 made in the test.

II. CONCLUSIONS

Although there were some differences in the results of the personality test, the other tests failed to produce any indication of differences in mental maturity or music talent. This study, with a relatively small sampling, produced evidence to indicate that the three ethnic groups, Aleuts, Eskimos, and Indians of Mt. Edgecumbe School can be considered as equal in their potential capacity to learn.

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APPENDIX

APPENDIX A

ALEUT, ESKIMO, AND INDIAN INTELLIGENCE QUOTIENT DISTRIBUTION

	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	No.	Me-
	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	or	dian
	54	59	64	69	74	79	84	89	94	99	104	109	114	119	124	129	134	139	144	149	More	Cases	
Total Mental																							
Aleut							1	5	2	3	5	1	1	0	0	1						19	97
Eskimo						1	2	2	6	11	7	4	4	0	1							38	95
Indian	1	0	0	0	0	0	4	4	10	10	5	6	1	2								43	96
Language																							
Aleut					1	0	0	2	8	3	3	0	0	2								19	94
Eskimo						3	2	2	8	7	6	5	2	2	0	1						38	97
Indian	1	0	0	0	0	1	4	5	9	6	8	5	1	2	1							43	96
Non-Language																							
Aleut						1	3	2	2	2	1	2	1	3	0	1	0	1				19	95
Eskimo						1	4	4	2	7	8	6	3	2	0	1						38	100
Indian	1	0	0	0	0	4	1	5	5	8	8	6	4	1								43	98

APPENDIX B

ALEUT, ESKIMO, AND INDIAN DISTRIBUTION OF MENTAL AGES

	Be-24	25 to 35	36 to 47	48 to 59	60 to 71	72 to 83	84 to 95	96 to 107	108 to 119	120 to 131	132 to 143	144 to 155	156 to 167	168 to 179	180 to 191	192 to 203	204 to 215	216 to 227	228 to 239	240 to 251	252 to 263	No. of Cases	Median Mental Age	
Total Mental																								
Aleut													2	5	7	2	1	2					19	183
Eskimo											3	1	7	11	9	5	1		1				38	182
Indian							1	0	0	1	5	11	12	5	7	1							43	183
Language																								
Aleut											1	3	7	3	3	1	1						19	176
Eskimo											3	4	8	8	7	5	2		1				38	185
Indian							1	0	0	0	1	6	13	5	10	5	1	1					43	180
Non-Language																								
Aleut												2	2	4	3	2	3	1	0	1	1		19	185
Eskimo											1	5	4	8	12	5	2	0	0		1		38	192
Indian							1	0	0	4	2	10	6	11	7	2							43	187

APPENDIX C

INDIAN PERCENTILE RANK FOR AGE DISTRIBUTION

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases	Median	Norm	Diff. or -
Spatial Relationships		7	7	5	5	3	1	3	5	4	3			43	30	50	-20
Logical Reasoning	1	1	2	11	9	3	5	3	3	4	0	1		43	30	50	-20
Numerical Reasoning	1	0	10	3	8	7	1	3	7	3				43	30	50	-20
Verbal Concepts	3	4	1	1	8	5	4	6	6	2	1	1		43	40	50	-10
Total Mental	1	0	2	4	6	12	7	5	7	2				43	40	50	-10
Language	1	0	2	6	10	5	5	8	3	1	2			43	40	50	-10
Non-Language	1	0	4	5	5	6	9	7	3	3				43	40	50	-10

APPENDIX D

ESKIMO PERCENTILE RANK FOR AGE DISTRIBUTION

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases	Median	Norm	Diff. or -
Spatial Relationships		5	5	2	1	2	2	4	6	6	3	2		38	40	50	-10
Logical Reasoning	2	0	5	1	10	2	2	3	9	3	0	1		38	40	50	-10
Numerical Reasoning	3	0	5	7	4	5	4	3	1	3	3			38	30	50	-20
Verbal Concepts	2	4	1	2	2	8	7	3	4	3	2			38	40	50	-10
Total Mental			3	1	6	9	7	7	3	1	1			38	50	50	0
Language			4	3	7	4	8	7	2	1	2			38	50	50	0
Non-Language		2	2	3	4	6	5	10	2	3	0	1		38	50	50	0

APPENDIX E

ALEUT PERCENTILE RANK FOR AGE DISTRIBUTION

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases	Median	Norm	Diff. or -
Spatial Relationships		3	4	1	1	2	1	0	1	2	1	2	1	19	50	50	0
Logical Reasoning	1	0	0	3	5	2	2	2	3	0	1			19	40	50	-10
Numerical Reasoning		1	1	4	2	3	2	2	3	0	0	0	1	19	40	50	-10
Verbal Concepts	1	2	0	3	1	4	3	4	0	0	1			19	40	50	-10
Total Mental				4	3	4	3	2	1	1	1			19	40	50	-10
Language		1	0	2	3	7	2	2	0	2				19	40	50	-10
Non-Language		1	1	3	3	1	3	1	2	1	1	1	1	19	50	50	0

APPENDIX F

INTELLIGENCE QUOTIENTS DISTRIBUTION BY PER CENT OF NATIVE BLOOD --ALEUT

	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	Total	Me-
	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	or	dian
	54	59	64	69	74	79	84	89	94	99	104	109	114	119	124	129	134	139	144	149	More	Cases	
Total mental																							
four-fourths							1	1	1	1	1											5	92
three-fourths										1	1	1	1									4	105
one-half								3	1	1	1											6	90
one-fourth								1	0	0	2	0	0	1								4	100
Language																							
four-fourths				1	0	0	0	0	2	1	1											5	92
three-fourths									2	1	0	0	0	1								4	
one-half								2	3	1												6	
one-fourth									1	0	2	0	0	1								4	
Non-Language																							
four-fourths							1	2	1	0	0	0	0	1								5	
three-fourths												1	1	1	0	1						4	
one-half						1	1	0	1	0	1	1	0	1								6	
one-fourth							1	0	0	2	0	0	0	0	0	0	0	0	1			4	

APPENDIX G

INTELLIGENCE QUOTIENTS DISTRIBUTION BY PER CENT OF NATIVE BLOOD--ESKIMO

	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	Total	Me-	
	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	or	dian	
	54	59	64	69	74	79	84	89	94	99	104	109	114	119	124	129	134	139	144	149	More	Cases	I. Q.	
Total Mental																								
four-fourths					1	2	0	5	6	3	0	2										19	96	
three-fourths							1	0	1	0	1	1										4	100	
one-half							1	0	3	4	2	0	0	1								11	100	
one-fourth								1	1	0	1	1										4	105	
Language																								
four-fourths					3	2	1	4	4	2	2	1										19	94	
three-fourths								1	1	0	1	0	1									4	105	
one-half								3	1	3	2	1	1									11	102	
one-fourth							1	0	1	1	0	0	0	0	1							4	105	
Non-Language																								
four-fourths					1	2	2	1	6	3	2	1	1									19	97	
three-fourths						1	0	0	0	2	1											4	102	
one-half								2	0	1	2	3	2	0	0	1						11	100	
one-fourth						1	0	1	0	1	0	0	1									4	100	

APPENDIX H

INTELLIGENCE QUOTIENT DISTRIBUTION BY PER CENT OF NATIVE BLOOD -- INDIAN

	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to 109	110 to 114	115 to 119	120 to 124	125 to 129	130 to 134	135 to 139	140 to 144	145 to 149	150 or More	Total Cases	Me- dian
Total Mental																							
four-fourths							3	2	2	5	2	2	0	1								17	96
three-fourths								1	4	2	0	1										8	93
one-half	1	0	0	0	0	0	0	1	4	3	3	2	0	1								15	96
one-fourth							1	0	0	0	0	1	1									3	107
Language																							
four-fourths						1	2	0	4	3	3	2	1	1								17	96
three-fourths								2	4	0	2											8	92
one-half	1	0	0	0	0	0	2	2	1	3	3	2	0	1								15	96
one-fourth								1	0	0	0	1	0	0	1							3	107
Non-Language																							
four-fourths						3	0	4	3	1	4	0	1	1								17	91
three-fourths							1	0	1	4	0	1	1									8	97
one-half	1	0	0	0	0	0	0	1	1	2	4	4	2									15	103
one-fourth						1	0	0	0	1	0	1										3	97

APPENDIX I

DISTRIBUTION OF MENTAL AGE SCORES OF FULL ALEUTS, ESKIMOS, AND INDIANS

	Be-	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	No.	Me-
	low	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	of	dian
	24	35	47	59	71	83	95	107	119	131	143	155	167	179	191	203	215	227	239	251	263	Cases	
Total Mental																							
4/4 Aleut													1	2	1	1						5	174
4/4 Eskimo												3	0	5	6	3	2					19	181
4/4 Indian											1	3	2	6	3	1	1					17	183
Language																							
4/4 Aleut												1	0	2	1	1						5	179
4/4 Eskimo												3	3	4	4	3	2					19	179
4/4 Indian											1	2	4	3	4	2	1					17	182
Non-Language																							
4/4 Aleut												1	0	3	0	0	0	1				5	171
4/4 Eskimo												1	2	2	7	3	3	1				19	185
4/4 Indian												3	1	6	1	4	1	1				17	174

APPENDIX J

DISTRIBUTION OF MENTAL AGE SCORES OF THREE-FOURTHS ALEUTS, ESKIMOS, INDIANS

	Be- low 24	24 to 35	36 to 47	48 to 59	60 to 71	72 to 83	84 to 95	96 to 107	108 to 119	120 to 131	132 to 143	144 to 155	156 to 167	168 to 179	180 to 191	192 to 203	204 to 215	216 to 227	228 to 239	240 to 251	252 to 263	Total Cases	Me- dian	
Total Mental																								
3/4 Aleut																2	0	1	1				4	189
3/4 Eskimo													1	0	1	1	0	1				4	191	
3/4 Indian													5	2	0	1						8	179	
Language																								
3/4 Aleut														1	2	0	0	1				4	191	
3/4 Eskimo														1	1	0	1	1				4	191	
3/4 Indian													6	0	2							8	173	
Non-Language																								
3/4 Aleut															1	0	2	0	0	1		4	211	
3/4 Eskimo														1	0	0	2	1				4	192	
3/4 Indian														1	2	3	0	1	1			8	190	

APPENDIX K

DISTRIBUTION OF MENTAL AGE SCORES OF ONE-HALF ALEUTS, ESKIMOS, INDIANS

	Be-24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	Total	Me-	
	low	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	Cases	di-	
	24	35	47	59	71	83	95	107	119	131	143	155	167	179	191	203	215	227	239	251	263		an
Total Mental																							
1/2 Aleut												1	2	3								6	180
1/2 Eskimo													1	3	5	1	0	1				11	192
1/2 Indian								1	0	0	0	1	4	4	2	3						15	189
Language																							
1/2 Aleut												3	3									6	173
1/2 Eskimo													3	2	3	2	1					11	192
1/2 Indian								1	0	0	0	0	4	2	2	4	2					15	183
Non-Language																							
1/2 Aleut												1	1	1	0	2	1					6	174
1/2 Eskimo													1	1	1	6	1	0	0	0	1	11	199
1/2 Indian								1	0	0	0	0	2	2	6	4						15	192

APPENDIX L

DISTRIBUTION OF MENTAL AGE SCORES OF ONE-FOURTH ALEUTS, ESKIMOS, INDIANS

	Be-24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	Total	Me- Cases dian	
Total Mental																								
1/4 Aleut													1	1	1	0	1						4	194
1/4 Eskimo													1	1	0	2							4	192
1/4 Indian										1	0	0	0	0	2								3	207
Language																								
1/4 Aleut													1	0	2	1							4	192
1/4 Eskimo										1	0	1	1	0	0	0	1						4	194
1/4 Indian												1	0	0	1	0	1						3	207
Non-Language																								
1/4 Aleut												1	0	2	0	0	0	0	0	1			4	190
1/4 Eskimo												1	1	0	1	0	1						4	199
1/4 Indian										1	0	0	0	0	1	1							3	206

APPENDIX M

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES FOR 4/4 ALEUTS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases	Median Norm	Diff. or -
Spatial Relationships		1	2	0	1	0	0	0	0	0	0	1		5		50
Logical Reasoning				3	2									5		50
Numerical Reasoning			1	1	0	0	1	1	1					5		50
Verbal Concepts	1	0	0	1	0	2	1							5		50
Total Mental				2	1	1	0	1						5		50
Language		1	0	0	0	3	0	1						5		50
Non-Language			1	1	2	0	0	0	0	1				5		50

APPENDIX N

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 1/4 ALEUTS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships			1	1	0	1	0	0	0	0	0	0	1	4
Logical Reasoning					1	0	1	0	1	0	1			4
Numerical Reasoning		1	0	0	0	0	1	1	0	0	0	0	1	4
Verbal Concepts						1	1	2						4
Total Mental					1	0	2	0	0	0	1			4
Language						1	1	1	0	1				4
Non-Language				1	0	0	2	0	0	0	0	0	1	4

APPENDIX O

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 1/2 ALEUTS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total C Cases	Median Norm	Diff. or -
Spatial Relationships		2	1	0	0	0	1	0	0	1	0	1		6		50
Logical Reasoning	1	0	0	0	1	2	1	1						6		
Numerical Reasoning				1	2	3								6		
Verbal Concepts		2	0	2	0	0	1	1						6		
Total Mental				2	1	2	0	1						6		
Language				2	2	2								6		
Non-Language		1	0	1	1	0	1	1	0	0	1			6		

APPENDIX Q

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 3/4 ALEUTS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases	Median	Norm	Diff. or -
Spatial Relationships						1	0	0	1	1	1			4		50	
Logical Reasoning					1	0	0	1	2					4		50	
Numerical Reasoning				2	0	0	0	2						4		50	
Verbal Concepts					1	1	0	1	0	0	1			4		50	
Total Mental						1	1	0	1	1				4		50	
Language					1	1	1	0	0	1				4		50	
Non-Language						1	0	0	2	0	0	1		4		50	

APPENDIX R

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 4/4 ESKIMOS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships		2	2	2	1	2	1	4	3	1	1			19
Logical Reasoning	2	0	3	1	4	1	2	2	4					19
Numerical Reasoning	2	0	3	6	1	1	2	1	1	0	2			19
Verbal Concepts	2	4	0	0	2	4	3	1	3					19
Total Mental			3	0	4	6	2	2	2					19
Language			4	2	4	2	4	2	1					19
Non-Language		1	1	1	3	5	3	3	0	2				19

APPENDIX S

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 3/4 ESKIMOS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships			1	0	0	0	1	0	2					4
Logical Reasoning			1	0	1	0	0	1	0	1				4
Numerical Reasoning			1	0	1	0	0	0	0	2				4
Verbal Concepts				2	0	0	0	1	0	1				4
Total Mental				1	0	0	1	1	0	1				4
Language					1	1	0	1	0	0	1			4
Non-Language			1	0	0	0	0	3						4

APPENDIX T

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 1/2 ESKIMOS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships		2	1	0	0	0	0	0	1	4	1	2		11
Logical Reasoning			1	0	3	1	0	0	3	2	0	1		11
Numerical Reasoning			1	1	2	3	2	1	0	0	1			11
Verbal Concepts			1	0	0	3	2	2	0	3				11
Total Mental					1	2	4	3	0	0	1			11
Language					2	1	2	4	1	1				11
Non-Language				2	0	1	2	3	2	0	0	1		11

APPENDIX U

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 1/4 ESKIMOS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships		1	1	0	0	0	0	0	0	1	1			4
Logical Reasoning					2	0	0	0	2					4
Numerical Reasoning	1	0	0	0	0	1	0	1	0	1				4
Verbal Concepts						1	2	0	0	0	1			4
Total Mental					1	1	0	1	1					4
Language				1	0	0	2	0	0	0	1			4
Non-Language		1	0	0	1	0	0	1	0	1				4

APPENDIX V

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 4/4 INDIANS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships		5	3	3	2	0	0	0	2	1	1			17
Logical Reasoning		1	1	6	2	2	2	1	1	1				17
Numerical Reasoning			5	2	3	0	1	2	4					17
Verbal Concepts		2	0	1	4	1	1	3	4	1				17
Total Mental			1	3	1	7	1	2	1	1				17
Language			2	1	3	3	1	5	1	1				17
Non-Language			3	3	3	2	2	2	1	1				17

APPENDIX W

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 3/4 INDIANS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships			3	1	1	1	0	1	0	1				8
Logical Reasoning				2	4	0	1	0	0	1				8
Numerical Reasoning			2	0	2	4								8
Verbal Concepts		1	0	0	2	2	0	1	1	1				8
Total Mental					2	4	1	1						8
Language					6	0	1	1						8
Non-Language				1	1	2	2	1	0	1				8

APPENDIX X

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 1/2 INDIANS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships		1	1	1	2	1	1	2	3	1	2			15
Logical Reasoning	1	0	1	2	3	1	0	2	2	2	0	1		15
Numerical Reasoning	1	0	2	1	3	3	0	1	2	2				15
Verbal Concepts	3	1	1	0	2	2	3	1	1	0	1			15
Total Mental	1	0	0	1	3	1	5	2	1	1				15
Language	1	0	0	4	1	2	3	2	1	0	1			15
Non-Language	1	0	0	1	1	2	4	3	2	1				15

APPENDIX Y

DISTRIBUTION OF PERCENTILE RANK FOR AGE SCORES OF 1/4 INDIANS

	1	5	10	20	30	40	50	60	70	80	90	95	99	Total Cases
Spatial Relationships		1	0	0	0	1	0	0	0	1				3
Logical Reasoning				1	0	0	2							3
Numerical Reasoning			1	0	0	0	0	0	1	1				3
Verbal Concepts		1	0	0	0	0	0	1	0	0	0	1		3
Total Mental			1	0	0	0	0	0	2					3
Language				1	0	0	0	0	1	0	1			3
Non-Language			1	0	0	0	1	1						3