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(6) INTERPRETATIONS OF G. C. T. TEST SCORES
OF NEGRO AND WHITE SELECTEES

PROBLEM

AGC-PRS-307A

A frequently made observation on G.C.T. data is that the scores of white selectees are significantly higher on the average than those for Negro selectees. The problem under consideration is (1) to present such data as are available on the G.C.T. scores of white and Negro selectees and (2) to indicate some possible interpretations that might be drawn from these data.

DISCUSSION

The importance of test scores for classification of Army personnel and the wider social significance of the results of policies and procedures associated with Army classification require that careful consideration be given to the data on the subject of racial differences. As an example of the wide spread effects of hasty conclusions based on such data one might cite the publication of average Army Alpha test scores after the last World War. These results were used to support the hypothesis that the Negro race is inferior to the White race since the average Negro Army Alpha score was very significantly lower than the average White Army Alpha score. The question immediately arose as to whether some factors other than potential mental ability might not have contributed to a large part of these test score differences. The growth of some misconceptions concerning the ability of the Negro race was given impetus by these data; the refutation of such misconceptions has been the result of long and careful work on the part of a number of social scientists.

The interpretation of test score differences in terms of possible causal factors requires either (1) that the contribution of each influencing variable be known or (2) that all influencing factors but one be held constant. (Experimental design may provide evidence for 2 or more simultaneous variables but can hardly be applied to the problem at present.) Two fundamental conditions required for the comparison of test scores from different racial groups are (1) that the sampling or selection of individuals in the several races must be comparable and (2) that the environmental conditions, and particularly the education of the races, must be comparable. The conditions, necessary for a valid comparison, have not been rigidly met although many racial comparisons have been attempted.

The use of tests which purport to measure native capacity or ability to learn is no guarantee that the objective of the test has been fulfilled. "There is definite evidence that no test which has thus far been worked

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out measures native capacity alone. (F. N. Freeman, 1934)". That achievement is being measured by "intelligence" tests is suggested by (1) the correlations with grade placement (2) results of studies of foster children (3) data on identical twins (4) effect of migration to more favorable environment.

These tests are apparently measuring individual achievement resulting from (1) native capacity (2) effective schooling and educational facilities (3) socio-economic status and (4) cultural background. Nevertheless, the scores on a general "intelligence" test do indicate the general availability or "trainability" of the men with respect to acquiring immediately certain types of materials that must be learned. Scores on such tests are certainly of definite value in selecting individuals for training in specialist schools or in weeding out those men who will profit little from continued instruction. These scores should not be taken, however, as direct evidence of innate capacity; the scores should be interpreted as results of potential ability but ability as modified by the various educative experiences to which the individual has been exposed.

DATA ON TEST SCORES OF NEGRO AND WHITE SELECTEES

The Procedures Control Unit, Operations Group, Personnel Procedures Section has secured A.G.C.T. test scores from the various reception centers for 508,529 white selectees and 57,063 Negro selectees inducted into the Army in the period from June 1941 to February 1942. Supplementary data are available in terms of formal education, reported as (1) less than 8th grade (2) grade school graduate (3) high school graduate (4) night and business school (5) technical school graduate (6) college or university graduate (7) post graduate. No data were available on other factors that may have a direct relation to G.C.T. scores, such as, place of schooling, occupational level, parental income, socio-economic status. The data, when broken down by reception centers, do provide a chance to estimate the educational standards to which the selectees were exposed. Office of Education 1938 statistics were used in making these estimates.

Table I gives the percentage of each racial group falling in each of the Army G.C.T. Grades. Nearly 71% of the white selectees received a rating of III or better while about 78% of the Negro selectees were in Army grades IV and V. The relative frequency of Grade I men was 8.6% for the white selectees and only 0.6% for the Negro selectees. Comparable differences in G.C.T. scores were found in a sample of 5,751 white selectees and 1,516 Negro selectees at Camp Lee, Virginia. The average G.C.T. standard score for the whites was 104.9, near the middle of the Grade III range, while the average standard score for the Negroes was 71.5, at the boundary between Grade V and Grade IV.

Comparable differences are found in the educational attainments of white and Negro selectees. Table II, summarizing these data, shows that less than 17% of the white had not completed grade school although more

than 44% of the Negroes were in this category. The differences in education are further indicated by the fact that while 35% of the whites had completed high school, only about 15% of the Negroes had had that much schooling. The relative standards of the Negro and White schools in the Southern states will be considered later.

TABLE I

Percentage Distribution by Army Grade for White and Negro Selectees

(Selectees received at Replacement Centers,
June 1941 to February 1942)

Percent in A.G.C.T. Army Grades							
Race	N	V	IV	III	II	I	Total
White	508,529	8.57	20.57	31.93	30.34	8.59	100.00
Negro	57,063	46.83	31.01	16.64	4.95	.57	100.00

TABLE II

Percentage Distribution by Educational Level for White and Negro Selectees

(Selectees received at Replacement Centers, June 1941 to February 1942)

Percent in Educational Categories										
Race	N	Non-Eng-lish	Illit-erate	Less than 8th gr.	Com-pleted 8th gr.	Com-pleted H.S.	Com-pleted Night Bus.Sch.	Com-pleted or Coll. Uni.	Com-pleted Tech Coll.	Com-pleted Post Grad.
White	508,529	.10	.47	15.93	41.88	34.92	2.22	3.85	.13	.50
Negro	57,063	--	1.33	42.86	39.15	14.73	.44	1.36	.05	.08

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The relation between A.G.C.T. Army grade and educational level is indicated in Table III. The data presented in this table include only those cases in five of the educational categories. Although the same trends toward better Army grade ratings with higher educational level are found, a closer correspondence between educational attainment and Army grade is found among the white selectees. The high incidence of both low test scores and low educational level among the Negroes is shown in this table; 31.3% of all the Negroes have less than 8th grade education and received Grade V test scores.

A further breakdown of these data in terms of the relation between educational level and A.G.C.T. Army grade has been made in Table IV. Table IV shows the percentage of each educational level falling in each of the five Army grades. These data are shown graphically in Figure 1. The Negro selectees tend to have the modal frequency for each educational level about one Army grade below the corresponding white group. The graphs indicate a greater degree of homogeneity among those white selectees who have completed grade school or more, than among corresponding Negro groups.

TABLE III

Percentage Distribution of White and Negro Selectees by A.G.C.T. Army Grade and by highest level of education. *

(Selectees received at Replacement Centers, June 1941 to February 1942)

Educational Level	Race	A.G.C.T. Grades					Percent in Educational Category
		V	IV	III	II	I	
Post Graduate	W	-	-	.03	.20	.27	.50
	N	-	-	.02	.05	.01	.08
Completed College or University	W	-	.02	.27	1.73	1.83	3.85
	N	.02	.18	.60	.47	.09	1.36
Completed High School	W	.15	1.86	9.94	17.73	5.24	34.92
	N	1.15	4.80	6.12	2.42	.23	14.73
Completed 8th Grade	W	2.46	11.53	17.95	9.11	.82	41.88
	N	13.06	16.97	7.60	1.46	.13	39.15
Less than 8th Grade	W	5.49	6.84	3.00	.55	.04	15.93
	N	31.29	8.86	2.12	.49	.10	42.86

* Read this table as: 5.49% of 508,529 White and 31.29% of the 57,063 Negro selectees had had less than 8th grade Education and were in A.G.C.T. Army Grade V. Non-English speaking, illiterates, and graduates of night schools, business schools and technical colleges, are excluded from the Army grade distribution presented above.

TABLE IV

Percentage Distribution of White and Negro Selectees for
Each Educational Category by A.G.C.T. Grade

(Selectees Received by Replacement Centers, June 1941 to February 1942)

		Percentage in Each G. C. T. Army Grade					No. of Cases
Educational Category	Race	V	IV	III	II	I	
Some Schooling	White	34.4	42.9	18.9	3.5	0.3	81033
	Negro	73.1	20.7	4.9	1.1	0.2	24456
Completed Grade School	White	5.8	27.6	42.8	21.8	2.0	212949
	Negro	33.1	43.4	19.4	3.6	0.3	22343
Completed High School	White	0.5	5.4	28.5	50.5	15.1	177556
	Negro	7.8	32.6	41.5	16.5	1.6	8404
Completed College or University	White	0.0	0.4	7.1	45.0	47.5	19580
	Negro	1.5	12.9	44.3	34.9	6.4	776
Completed Tech- nical College	White	.5	1.8	14.1	49.6	34.0	667
	Negro	4.2	20.8	33.3	29.2	12.5	24
College Post Graduate	White	.1	.4	6.0	40.2	53.3	2533
	Negro	2.1	4.2	25.0	56.3	12.5	48
Completed Night or Bus. School	White	1.8	10.3	30.4	42.2	15.3	11290
	Negro	14.9	28.5	33.7	21.7	1.2	249
Non-English	White	67.7	16.4	10.1	2.7	3.1	513
	Negro	100.0	0.0	0.0	0.0	0.0	2
Illiterate	White	74.6	14.1	8.3	2.8	0.2	2408
	Negro	92.6	4.7	1.6	0.7	0.4	761
Total Number	White	43574	104591	162427	154264	43673	508529
Total Number	Negro	26721	17698	9496	2623	325	57063

The hypothesis has been advanced that the differences between the test scores might be due to differences in educational opportunity. Table V presents data relating to this hypothesis. It shows, for each reception center reporting both white and Negro selectees, the average Army grade made by white and Negro selectees, the length in days of the school year, and average teachers' salaries which have been estimated for the area representing the more probable drawing power of these reception centers.* These estimates, given in Table V, were made on the assumption that the greater part of the migratory population moves to a neighboring state and that averaging census data for areas, surrounding a reception center, would provide an approximation figure sufficiently accurate for the present purpose.

The average G.C.T. Army grades for Negro and white selectees from reception centers reporting men of both races have been compared graphically in Figure 2. These data are presented in Table V. The fact that all points lie above and to the left of the line representing equal average Army grade values indicates a poorer average grade value for the Negro selectees. The grouping of these points into two clusters is evident: The upper cluster is composed largely of reception centers from the Northern areas while the lower cluster represents reception centers from the Southern and Border states. These data indicate that the average G.C.T. score of (1) the white selectees from the Northern states exceeds that of the Southern white selectees by nearly one-half an Army grade (2) the average G.C.T. score of Negroes from the Northern reception centers exceeds that of the Southern Negroes by about one-half an Army grade (3) the Southern white selectees secure an average G.C.T. score about one-half an Army grade above that of the Northern Negroes (4) the white selectees tend to secure average G.C.T. scores about one Army grade step above Negro selectees from the same geographical areas.

Figure 3 presents in graphic form the relation between the estimated average teacher's salary and the average G.C.T. score for Negro and white selectees from those reception centers reporting men of both races. For both Negro and white selectees, a tendency for higher G.C.T. scores to be associated with higher teachers' salaries can be seen. The Negro selectees secure an average G.C.T. score about one Army grade above that for white selectees from the same general areas. While average teacher salaries may be used as an estimate of educational opportunities for the separate racial groups, it is probable that the same teacher salary does not indicate comparable effective schooling and educational facilities for the two races. Teacher training, cost per pupil, size of class, capital outlay should also be considered.

* The average annual per pupil cost, which is considered to be a reasonable estimate of school standards, has not been included here since the U. S. Office of Education does not have these data separately for Negro and white schools.

TABLE V

A.G.C.T. Average Army Grades for White and Negro Men, Inducted at
20 Reception Centers; Length in Days of School Year, and Esti-
mation of Average Teacher's Salary for Territory Adjoining
the Reception Centers

Reception Center	A.G.C.T.		Length		Average		No. of	
	Aver. Army		in Days of		Teacher's		Cases	
	W	N	W	N	W	N	W	N
1. Ft. Devens, Mass. (1)	2.77	3.39	179.6	179.6*	1450	1450*	27182	318
2. Ft. Niagara, N.Y. (2)	2.76	3.76	180.1	180.1*	1807	1807*	9804	195
3. Ft. Dix, N. J. (2)	2.73	3.87	185.1	182.7+	1741	1636+	32246	2282
4. Camp Upton, N.Y. (2)	2.55	3.65	181.6	181.6*	1946	1946*	31120	2039
5. Ft. Meade, Md. (3)	2.80	4.08	181.7	180.2+	1660	1559+	25128	9516
6. Ft. Benning, Ga. (4)	3.38	4.42	166.4	154.7	950	429	470	14257
7. Camp Blanding, Fla. (4)	3.15	4.31	172.0	160.8	1011	447	6051	261
8. Ft. Bragg, N. C. (4)	3.42	4.47	165.0	165.0*	855	700+	12218	4825
9. Camp Shelby, Miss. (4)	3.30	4.45	159.6	130.1	728	304	10699	5327
10. Ft. Thomas, Ky. (5)	3.23	3.93	170.8	173.6+	1203	1203*	23212	1601
11. Ft. Hayes, Ohio (5)	2.84	3.70	177.8	177.8*	1301	1301*	16198	742
12. Ft. Benjamin Harrison, Ind. (5)	2.83	3.83	170.5	174.2+	1273	1273*	22273	1562
13. Ft. Custer, Mich. (6)	2.74	3.82	175.2	175.2*	1423	1423*	18410	3868
14. Jefferson Bar- racks, Mo. (7)	2.78	3.86	167.2	174.3	898	898*	10317	1133
15. Ft. Leavenworth, Kansas (7)	2.70	3.61	175.4	178.7	950	950*	18924	378
16. Ft. Robinson, Ark. (7)	3.54	4.49	167.4	149.8	754	550+	8392	1833
17. Ft. S. H., Tex. (8)	3.36	4.37	172.0	159.1	1013	1013*	9702	1287
18. Ft. Sill, Okla. (8)	3.30	4.21	174.0	167.0	1026	952+	9122	1999
19. Ft. McArthur, Cal. (9)	2.79	3.75	171.6	171.6*	1868	1868*	15839	738
20. Pres. of L., Cal. (9)	2.78	3.67	175.0	175.0*	1833	1833*	14190	273

* Only one figure reported for both white and Negro.

+ Part of adjoining territory reported separate figures for white and Negro.

For other Reception Centers, entire territory reported separate figures for white and Negro.

Figures in parentheses immediately following names of Reception Centers indicate Service Commands.

INTERPRETATION OF RESULTS

As has been mentioned previously, such test score data may be interpreted in a number of ways. Such results may be interpreted as (1) evidence of potential ability (2) evidence of achievement and (3) evidence of general availability for immediate training. If the proper assumptions are made, irrespective of their validity, the data presented may be used as evidence to support any one of these interpretations. In the discussion to follow, the assumptions necessary to make these interpretations will be examined in an effort to arrive at an interpretation which is more likely to be valid.

In interpreting the results as direct evidence of potential ability, it is implicitly or explicitly assumed that comparable conditions for the various races exist (1) for the economic, social, and cultural factors and (2) with respect to educational opportunities and background. However, such conditions do not prevail in the U. S. Otto Klineberg has said that the environmental handicaps faced by the Negro--more particularly his unsatisfactory social and economic status, and his inadequate schooling, especially in the South-- definitely and significantly penalize him in the test situation, and vitiate any comparisons with the norms obtained by more favored whites. That such factors do show a relationship to "intelligence" test scores has been suggested by a number of separate studies, only a few of which will be mentioned here. Klineberg found a "rather close correspondence between test results and the social and occupational status of the group tested." The studies of the intelligence test scores of the Canal Boat children, Gypsy children, and Hollow Folk, nursery schools, placement of foster children, identical twins, urban and rural children all have indicated a relation between test scores and economic and social status. Arlett's work on Negro and white children indicated that the variability between groups classified by social status was several times greater than between racial groups. In the British West Indies, where the socio-economic factors tend to be more nearly comparable for the two races, the lines of social cleavage being more strictly on a social and occupational basis than in the U. S., the difference between Army Alpha averages of Negroes and whites of comparable status was about one Army Alpha grade point in favor of the whites. At the same time the Negroes averaged two grade points above the average of some five thousand whites tested at Ft. Dix on the same test. The grade points used in this comparison were values assigned to the score ranges as A+, A, A-, etc. where a difference of two grade points would correspond to the difference between A+ and A-.

That educational opportunities for Negroes are not comparable in the Southern States to those for whites is indicated by the comparisons between teachers' salaries and length of school term given in Table V above. The studies of Klineberg in New York show that test scores of Negro emigrants from the South are lower than those of Negroes born in the North. He also found an increase in test score associated with number of years of education in New York in the elementary schools. The reports of testing programs carried out in Los Angeles, California;

Chicago, Illinois; Gary, Indiana; and New York City indicate that comparable educational opportunities tend to result in comparable test scores. The low test scores of both white and Negro selectees from the South are more probably traceable to the low educational standards found in the white schools of Southern states, with even lower standards existing in the Negro schools. Educational opportunities appear to be a highly significant factor in test score comparisons. Individual differences do exist but only when these differences are found in groups homogeneous with respect to education and social economic status can the differences be interpreted in term of differences in native ability. It is suggested that since the Negro and white population are not homogeneous with respect to these factors, comparisons in terms of native ability are not valid.

An interpretation of test score differences in terms of achievement might be made by (1) assuming constant educational, economic, cultural, and social conditions for each race or (2) estimating the educational opportunities and assuming the other conditions constant. The results of such a study probably would add little to the results already obtained in Northern school systems in which relatively comparable educational opportunities are available. Although educational opportunities in the North are fairly equal for the two races, social, economic and cultural factors are by no means equivalent. The average income of whites and Negroes in comparable occupations are not equal in general, and the educational and cultural backgrounds are usually different. The socio-economic standards are higher in the North than in the South for both races, but the Northern Negroes are still largely in the lower economic levels and are still discriminated against in social and cultural matters. For these reasons comparisons of test scores as evidence of achievement do not hold.

Test score differences may be more reliably interpreted in terms of the availability of the men for specialist training. Since the Army service schools must provide the maximum number of trained men in a minimum of time, only those men capable of mastering such materials quickly can be recommended for training. Because of the poor educational opportunities and low cultural background, in general, of the Negroes in the U. S., many are not ready for advanced training. Those Negroes who have had comparable opportunities and who do make test scores above the given critical scores, should be able to profit from additional training nearly as well as whites of the same educational level. The data collected by the Development and Special Training Control Group, have suggested that a Negro making a G.C.T. Grade V score is a better bet for basic training as a soldier than are whites in the Army Grade V range. The influence of education on the test scores tend to penalize the Negro selectee and to rank a Negro below what might be termed his "true rank" as far as basic Army trainability is concerned, but such differences have not been reported in the selection of men for the Army service schools. In such schools, ability to succeed in academic-type work is important, and such ability appears to be directly related to past experience and to G.C.T. scores.

In summary, the common sources of error in making studies of racial test-score differences are:

- (1) not holding constant factors of selection as
 - (a) home environment - general cultural level
 - (b) social status
 - (c) occupational status
 - (d) effective educational opportunity
 - (e) language and test response facility

- (2) not equalizing testing conditions with respect to
 - (a) rapport of subjects
 - (b) attitude towards tests
 - (c) general attitude of criticism or submission
 - (d) familiarity with tests - particularly appreciation of speed factor

- (3) not measuring the same abilities in so far as
 - (a) there may be racial differences in the patterns of special abilities
 - (b) there are racial differences in emphasis on different abilities, as speed or accuracy.
 - (c) the tests are based on assumption of common cultural meanings and experiences.

It is suggested that the results obtained in this study are (1) evidence of average achievement of the two races in more or less academic materials and (2) indicative of the relative availability of the two races, at the present time, for advanced training in specialist schools.

Figure 1.
 Showing the Percentage in Each Army Grade of Men in Four Educational Categories
 for White and Negro Separately
 (Selectees received by Replacement Centers, June 1941 to Feb. 1942)

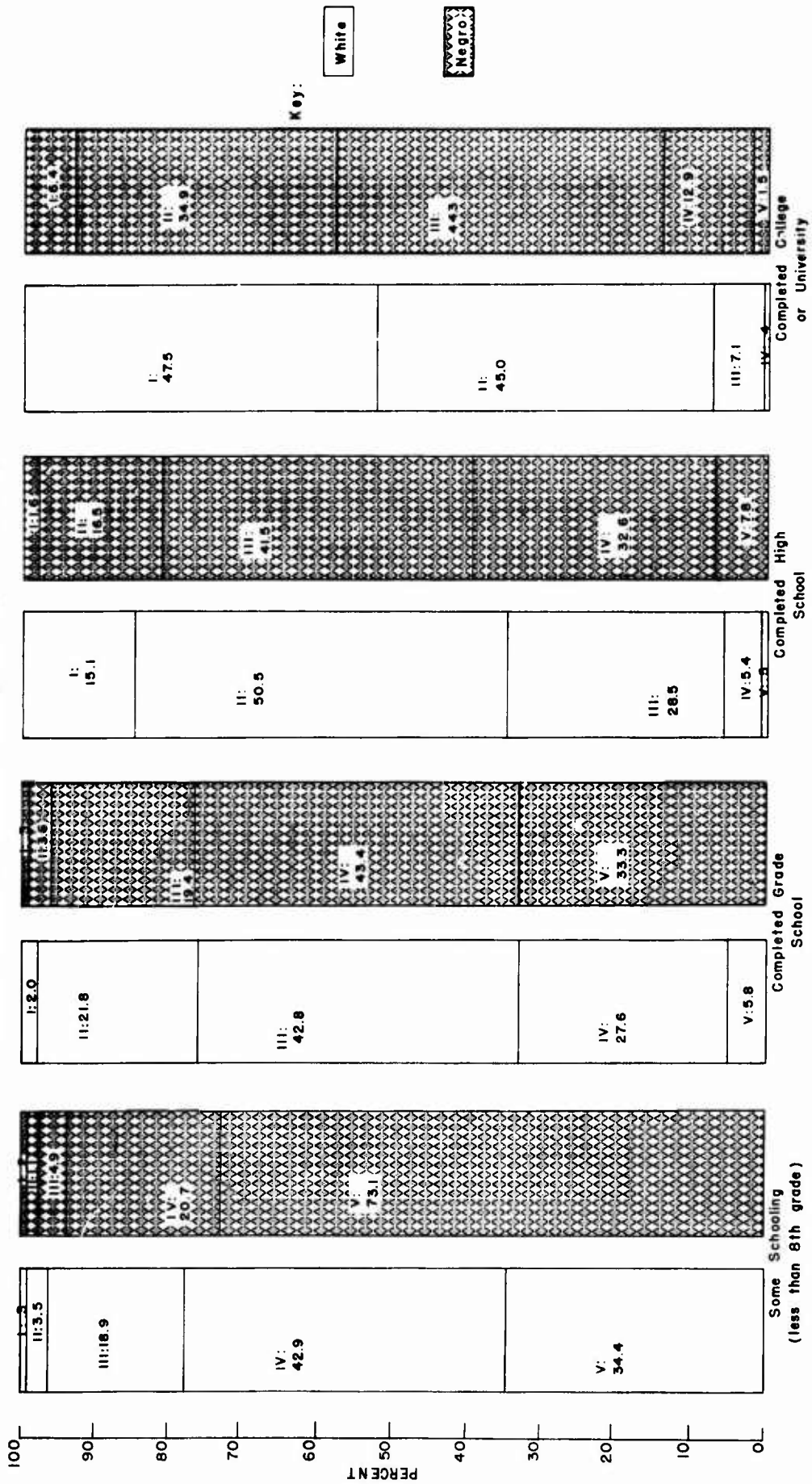
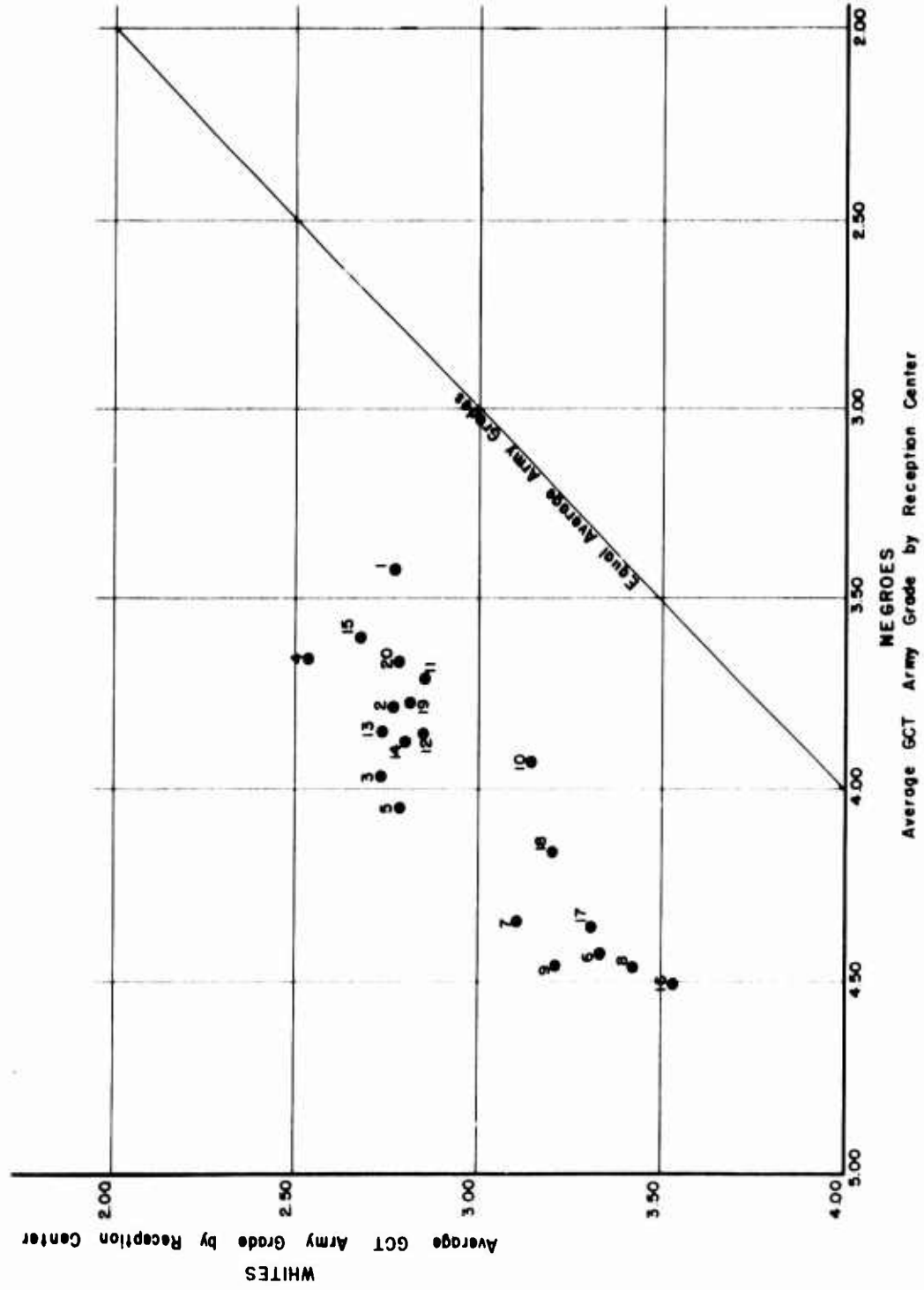
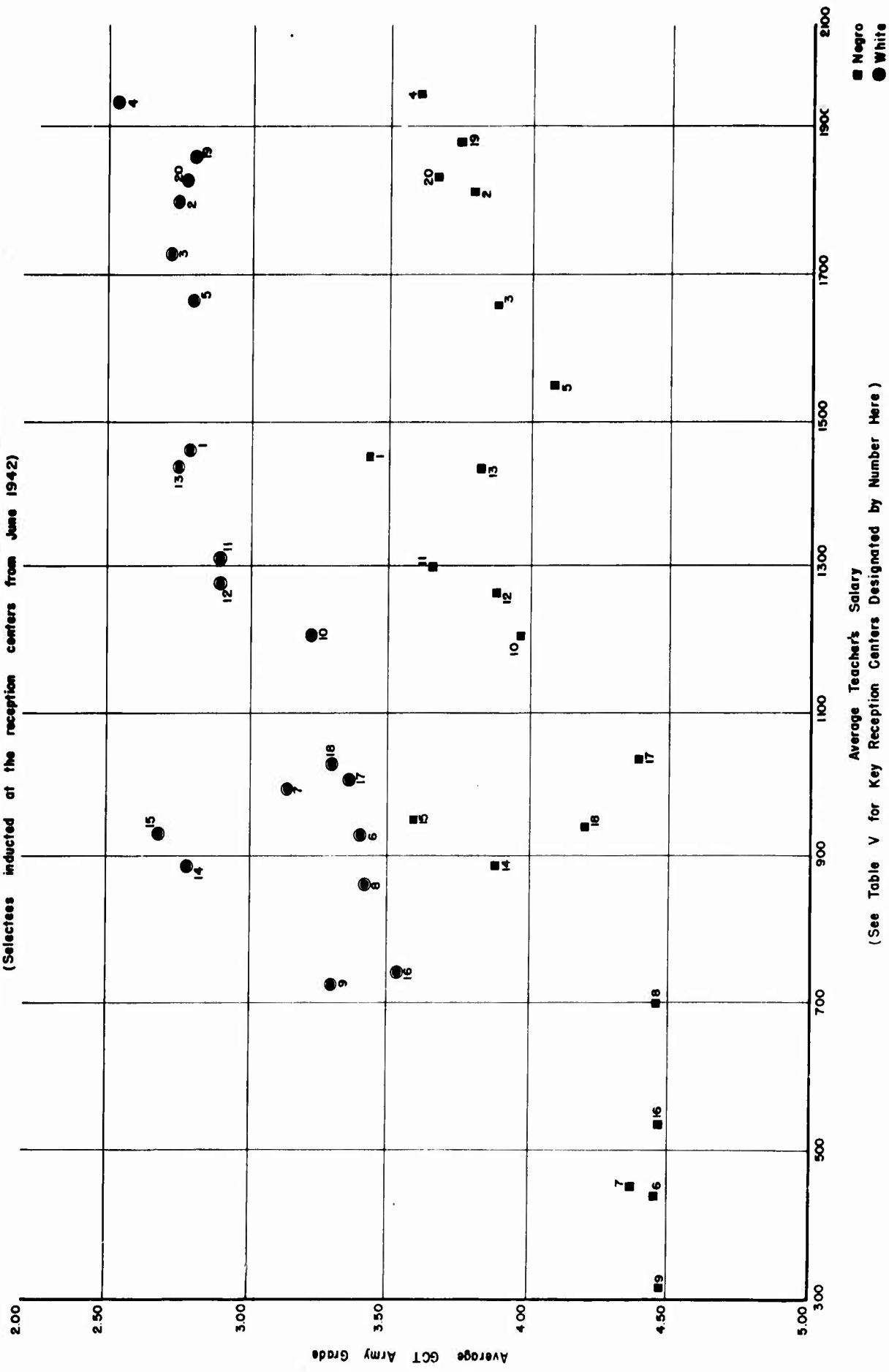


Figure 2.
 The Relation Between Average GCT Army Grades
 of White and Negro Men Inducted at the Same Reception Centers.
 (Data from Summer, Fall, and Winter Quotas Combined)
 (See Table V for Key to Reception Centers Designated by Numbers Here)



Relation Between Average GCT Army Grade for Men Inducted at Twenty Reception Centers and Estimated Average Teacher's Salary for Territory Adjoining the Respective Reception Centers.
(Selectees inducted at the reception centers from June 1942)



(See Table V for Key Reception Centers Designated by Number Here)