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Comparison of Measures of Interests

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INTERESTS have usually been studied from the point of view of vocational guidance. Different tests have been used for this purpose. Some of these tests may be called subjective since the subject is asked to indicate whether he likes, dislikes, or is indifferent to, a number of things. Other tests may be considered more objective, for they attempt to determine interests indirectly. Among the latter are the so-called information tests which assume that there is a direct relation between the amount of information and interest. The continuous free association test, based upon the supposition that words related to the interest of the subject will be evoked with a frequency proportionate to the degree of such interest, is another form of objective test.

Acting upon a suggestion made by Fryer[1] that it is important to correlate subjective with objective tests of interests, we set out to determine whether the subjective, the information, and the association test of interests measure the same thing. Mr. John W. Greene, a graduate student, contributed valuable assistance to this study.

A subjective interest questionnaire was the first test used. The subjects, 136 students at Howard University (about half of whom were male and the other half female) were asked to draw a circle around the "Yes" if interested, the "?" if doubtful or indifferent, and the "No" if not interested, opposite each of the following twenty-five items:

1. Bridge .... Yes ? No
2. Golf .... Yes ? No
3. Classical Music .... Yes ? No
4. Socialism .... Yes ? No
5. Current Novels .... Yes ? No
6. Advertising Slogans... Yes ? No
7. Stage Plays .... Yes ? No
8. National Politics .... Yes ? No
9. Current Poetry .... Yes ? No
10. Baseball .... Yes ? No

[1] Fryer, D. The Measurement of Interests. New York, Henry Holt & Co., 1931, p. 360.

11. Polar Exploration........ Yes ? No		19. Flowers .... Yes ? No
12. Crime .... Yes ? No		20. Farming .... Yes ? No
13. Paintings .... Yes ? No		21. Trans-oceanic flights... Yes ? No
14. Present day Russia ... Yes ? No		22. Listening to Radio ...... Yes ? No
15. Automobile Mechanics Yes ? No		23. Birds .... Yes ? No
16. Christian Science .... Yes ? No		24. The Bible .... Yes ? No
17. Horse Racing .... Yes ? No		25. Tennis .... Yes ? No
18. Astronomy .... Yes ? No		

About one month later the information test of interests was given to the same subjects. In this test, four questions in multiple choice form, about each of the twenty-five items (100 questions in all) mentioned in the subjective test of interests previously described, were arranged in haphazard order. The subjects were urged to make as high a score as possible on this test but were given no indication that this test was related to the questionnaire they had answered one month before. The following are sample questions used in the information test.

Who is Sherwood Anderson?—an explorer—a novelist—a radio announcer —a diplomat.

For what instrument were Chopin's compositions especially designed? violin—organ—piano—harp.

What is the function of the differential in an automobile?—to regulate flow of gas—to increase speed—to allow one driving wheel to rotate faster than the other—to regulate flow of water.

Who is Katherine Cornell?—an aviatrix—a home economics expert—an evangelist—an actress.

Who painted the Angelus?—Millet—Rubens—Corot—Whistler.

What is the key station of the Columbia Broadcasting System in New York?—WJZ—WABC—WEAF—WNYC.

What soap advertiser uses the slogan ''Keep that school girl complexion?''—Woodbury—Palmolive—Lux—Lifebuoy.

Which of the following golf clubs has a wooden head?—driver—mashie— putter—niblick.

Which of the following flowers often has a fringe on its border?— magnolia—poppy—lily—gentian.

Where is the Preakness run?—Laurel—Saratoga—Bowie—Pimlico.

The free association test of interests was presented to the same subjects one month after the second test. The twenty-five items in the subjective tests were used as stimulus words. The items were printed in large black letters on white card-

board and were exposed by means of a tachistoscope for ninety seconds each, during which time the subjects wrote their associates.

RESULTS

Relation of subjective test to information test. Table I presents a comparison of the subjective test results with those obtained on the information test. For each item the average per cent of correct answers in the information test is presented separately for the interested group, the not interested, and the doubtful.

TABLE I

Relation of Subjective Test to Information Test Scores

INTEREST	YES		?		NO	
	N.	% Correct	N.	% Correct	N.	% Correct
1. Bridge	101	72.0	15	65.0	20	42.5
2. Golf	41	51.8	34	55.4	59	41.5
3. Classical Music	83	46.6	33	36.3	17	30.8
4. Socialism	51	33.2	44	19.8	32	21.0
5. Current Novels	109	45.4	16	46.8	9	44.4
6. Advertising Slogans	59	71.6	28	58.9	47	62.7
7. Stage Plays	108	67.3	18	55.5	9	44.4
8. National Politics	83	66.8	29	55.1	23	44.5
9. Current Poetry	59	28.8	34	28.6	40	23.7
10. Baseball	104	67.5	5	65.0	27	55.5
11. Polar Explorations	28	47.3	48	36.4	57	34.6
12. Crime	72	72.5	32	57.0	30	58.3
13. Paintings	69	49.6	34	41.1	32	36.7
14. Present day Russia	79	57.9	14	44.6	31	45.1
15. Auto Mechancis	55	67.1	18	52.7	80	50.3
16. Christian Science	22	50.0	38	44.0	73	41.7
17. Horse Racing	60	37.0	17	42.6	58	37.5
18. Astronomy	43	53.4	36	52.0	53	48.1
19. Flowers	87	50.8	14	37.5	31	38.7
20. Farming	30	46.6	22	46.5	82	41.6
21. Trans-oceanic flights	67	54.8	27	55.5	39	52.6
22. Radio	126	56.5	7	60.7	2	25.0
23. Birds	65	47.6	28	46.6	35	41.0
24. Bible	95	39.7	24	45.8	17	29.4
25. Tennis	109	65.3	15	45.0	12	33.3

There is only a small difference in the amount of information possessed by those who express interest in an item and the amount of information possessed by those not interested or doubtful. In fact, in five of the items, those who were

doubtful of their interest actually answered more questions correctly than those who expressed interest. In half of the items those who avowed interest had less than ten per cent more information than those who said they were not interested. Where there is a high percentage of correct answers in the interested group, there is also a high percentage in the non-interested group. It seems that information is not dependent especially upon expression of interest but rather upon the nature of the information called for.

Table II shows the relation between the number of interests expressed in the subjective test and the total score in the information test.

TABLE II

NO. OF INTERESTS EX-PRESSED IN SUBJECTIVE TESTS	MEAN TOTAL INFORMA-TION SCORE	NO. OF SUBJECTS EX-PRESSING THIS NUMBER OF INTERESTS
5	63	1
6	67	1
7	48	3
8	40.7	4
9	38.6	9
10	50.1	21
11	50.3	16
12	52.4	10
13	47.3	13
14	51.5	10
15	48.1	18
16	47.5	2
17	55.6	8
18	53.8	7
19	57.5	6
20	43.6	3
21	51.0	3
25	43	1
		N. 136

Although it would be expected that subjects who express an interest in a greater number of these items would have a higher information score than those who express interest in only a few of these items, Table II shows that there is no tendency for the average total score in the information test to increase with the number of interests expressed. The cor-

relation[2] between the total number of interests expressed on the subjective test and the total number of correct answers on the information test is .11 ± .05. It is clear that the subjective interest questionnaire and the information test of interests do not measure the same thing.

Relation of subjective test to the continuous free association test. The average number of associations per item on the subjective test was compared with the expression of interest, lack of interest, or doubt, on the subjective questionnaire. The associations were scored for high relevancy and for low relevancy. Tables IIIa and IIIb give the results in tabular form. The term "Bridge" proved ambiguous and was eliminated.

TABLE IIIa

HIGH RELEVANCY

Relation of Subjective Test to Average Number of Associations Per Item

INTEREST	YES Mean no. asso-ciates	No. sub-jects	? Mean no. asso-ciates	No. sub-jects	NO. Mean no. asso-ciates	No. sub-jects
2. Golf	14.7	32	16.5	29	15.0	50
3. Classical Music	12.5	71	11.2	25	10.8	13
4. Socialism	10.0	27	11.1	23	8.0	18
5. Current Novels	9.1	63	8.1	8	6.0	5
6. Advertising Slogans	10.8	43	8.6	18	9.0	35
7. Stage Plays	11.6	84	9.7	15	11.8	5
8. National Politics	13.7	63	13.0	21	13.0	17
9. Current Poetry	9.5	36	10.2	22	6.8	19
10. Baseball	18.9	94	16.5	4	16.7	21
11. Polar Explorations	17.3	24	15.0	48	14.9	49
12. Crime	15.8	64	16.7	28	15.0	22
13. Paintings	12.9	50	12.3	25	11.4	23
14. Present day Russia	12.8	53	9.8	19	10.4	22
15. Auto Mechanics	15.2	30	12.9	13	13.0	62
16. Christian Science	10.3	12	12.5	23	10.1	44
17. Horse Racing	15.1	56	13.2	23	16.2	49
18. Astronomy	14.1	31	14.3	25	13.5	44
19. Flowers	17.6	67	17.6	8	15.9	21
20. Farming	17.9	27	17.6	18	14.8	66
21. Trans-oceanic flights	13.0	48	10.7	20	11.4	29
22. Radio	15.2	108	16.4	5	12.0	2
23. Birds	15.6	54	17.9	22	16.0	31
24. Bible	17.8	84	17.9	17	16.0	17
25. Tennis	16.0	91	19.1	13	15.2	13

[2] All correlations in this paper were obtained by the rank order method.

TABLE IIIb

LOW RELEVANCY

Relation of Subjective Test to Average Number of Associations Per Item

INTEREST	YES Mean no. asso- ciates	No. sub- jects	? Mean no. asso- ciates	No. sub- jects	NO. Mean no. asso- ciates	No. sub- jects
2. Golf	20.4	9	28.0	5	20.5	8
3. Classical Music	18.9	12	12.6	8	17.0	4
4. Socialism	15.3	27	12.6	23	12.9	15
5. Current Novels	12.5	46	12.7	8	11.5	4
6. Advertising Slogans	16.5	16	17.6	10	13.1	12
7. Stage Plays	15.9	22	15.3	3	15.2	4
8. National Politics	16.7	20	18.5	8	14.0	6
9. Current Poetry	13.8	23	9.4	12	14.9	22
10. Baseball	18.1	10	26.0	1	20.3	6
11. Polar Explorations	21.5	4	15.5	9	17.8	9
12. Crime	20.8	8	23.0	4	18.3	8
13. Paintings	17.0	19	15.3	9	17.4	9
14. Present day Russia	16.8	26	18.3	6	10.0	9
15. Auto Mechanics	20.4	5	19.2	5	27.2	18
16. Christian Science	13.8	10	16.0	15	14.6	28
17. Horse Racing	21.5	4	16.1	9	22.5	6
18. Astronomy	23.9	12	16.3	11	17.2	9
19. Flowers	18.8	19	20.0	6	20.3	10
20. Farming	21.6	16	22.2	4	21.0	3
21. Trans-oceanic Flgihts	17.7	18	18.7	7	16.3	11
22. Radio	18.1	18	17.5	2	0	0
23. Birds	18.5	12	15.0	6	16.0	4
24. Bible	16.0	9	24.5	7	16.0	3
25. Tennis	18.3	18	34.0	1	24.5	2

It will be seen that with respect to nearly half of the interests tested the doubtful group (questionnaire) actually made more associates than the interested group, and in a few instances the subjects claiming lack of interest made more associations than those claiming interest in an activity. The correlation between the number of subjects interested per item and the average number of associations per item is .31 ± .12 for high relevancy and .71 ± .06 for low relevancy. The correlation between the total number of interests expressed on the subjective test and the total number of associations is .001 ± .05.

Relation between information test and continuous free association test. The correlation between the average number of

correct answers per item of interest in the information test and the average number of high relevance associations is .17 ± .13 and for the total number of associations is .28 ± .08.

There was an inverse relationship between the total number of associations and the degree of relevance, the correlation being .61 ± .03.

DISCUSSION

It is often assumed that the more interested an individual is in a subject the more information he is likely to have about it. We found no significant relation between expression of interest in a subject and the amount of information possessed. If there were a definite relation between expression of interest and amount of information, the subjects who expressed a large number of interests on the subjective test should have a higher total score on the information test than those who expressed fewer interests. Our results do not bear this out. The subjects who expressed an interest in 20 of the 25 items tested had an average information test score of 43.6 while those who expressed interest in only ten items had a score of 50.1 on the information test. There was no tendency for the average total information score to increase in proportion to the number of interests expressed. The scores for both groups are very low for an item such as "Current Poetry" and very high for an item such as "Baseball." A little information about poetry may give the subject the feeling that he is interested, but interest in baseball carries with it much more information. It is quite probable that the amount of information depends as much upon the frequency with which the subject matter is mentioned in the environment as upon the degree of interest expressed. Thus baseball information is common to a high degree in those expressing lack of interest in baseball. Whatever the explanation, it is quite clear that expression of interest and amount of information do not measure the same thing.

The supposed relationship between the subjective test of interest and the association test of interest is also shown not

to exist. A possible explanation of the inverse relationship between the number of associations and the degree of relevance of associations may be the attitude of the subjects. Some subjects wrote down a few relevant associates and then a series of haphazard associates while for others the stimulus word seemed to direct all their associated words. This association test may be a measure of the maintenance of attitude or determining tendency rather than interest.

CONCLUSIONS

1. No significant relation was found between expression of interest on the subjective test and information as indicated by the information test.

2. There was no relation between expression of interest on the subjective questionnaire and the number of associations in the free association test.

3. There was a low correlation between the information test and the continuous free association test.

4. An inverse relation was found between the number of associations and their relevance.

5. Whatever these three tests measure, they do not measure the same thing. There is some evidence that the information test results depend upon current popularity of subject matter rather than on interest. The association test of interest seems to measure the persistence of original set rather than interest.