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A CRITICAL REVIEW OF THE GEIST PICTURE INTEREST INVENTORY: DEAF FORM: MALE

BRIAN BOLTON, Ph.D.

The Geist Picture Interest Inventory: Deaf Form: Male (Geist, 1962a) is the only commercially available interest inventory designed specifically for use with deaf persons. Other inventories (e.g., Kuder, Strong, Minnesota, etc.) may be used with literate deaf persons if inapplicable items and scales are taken into consideration when interpreting scores, but the Geist Inventory (Deaf Form) is the only instrument which can be used with low-level deaf persons. This instrument, referred to hereafter as the GPII:D:M, suffers from a variety of weaknesses and should be replaced. The purpose of this paper is to specify the most serious deficiencies of the GPII:D:M and to make suggestions regarding a new inventory. (Another pictorial interest inventory is available (Weingarten, 1958.) Although it was not designed for use with deaf persons, it is superior to the GPII:D:M in several respects; e.g., larger item sample, better pictorial representation, higher scale reliabilities, more detailed manual, etc.

Description

The GPII:D:M is composed of 27 sets of three items. Each item is a sketch depicting a vocationally relevant scene. Twenty-four of the triads show three sketches of a single person engaged in some vocational activity—teaching, selling, repairing, drafting, etc., and three triads show sketches of work tools or objects. Each sketch appears only once in the 81-item inventory; therefore, inter-item comparisons can occur only within a triad.

The subject is instructed to choose the one vocation depicted in each triad at which he would most like to work. He is further in-

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structed not to "ask questions about what the pictures are" (first page of the test booklet). The sketches are scored (keyed) on ten interest scales. The scales are the same as those on Kuder Form CH, with the Dramatic scale substituted for the Musical scale. The respondent's raw scores (the distribution of his 27 choices on the ten interest scales) are converted to T-scores using norm tables provided for two types of deaf groups: (1) high school, college, and a general DVR sample, and (2) 15 adult male occupational groups. The interest profile that results can be examined for high and low interests by comparing it to various occupational profiles.

Only those occupations most frequently engaged in by deaf males (as determined by a national survey, *Occupational Conditions Among the Deaf*, 1959) were selected for portrayal in the sketches. The consequence is a rather limited sample of the vocational world. The scoring keys were developed empirically by two techniques (Geist, 1962a, p. 2): (1) "a pool of expert judgments, and (2) "item analysis techniques." Geist does not explain these procedures. The three depictions comprising each triad are considered to be equal in prestige (1962a, p. 30). Again, an explanation is lacking just how the items were equated for prestige is not revealed. Possibly equal prestige was the basis for forming the triads, since a standard psychometric procedure obviously was not (see the cumulative scoring key in Table 1).

The reliability and validity data available for the GPII:D:M can be summarized as follows:

(1) Test-retest reliability. The median retest reliability coefficients (three-month interval) for the 10 interest scales range from .57 for high school students, to .65 for DVR clients, to .73 for Gallaudet students (Geist, 1962a, p. 29).

(2) Internal consistency. The items correlate higher, on the average, with the scales on which they are keyed (Geist, 1962a, p. 30).

(3) Concurrent validity. Occupational groups generally score higher on the interest scales which they could reasonably be expected to (the "respective" scale), based on a common-sense analysis of the occupational activity (Geist, 1962a, p. 35; 1962b).

(4) Congruent validity. For a sample of deaf male students at Gallaudet the median correlation between the GPII:D:M and the Kuder for nine scales was .42 (Geist, 1962a, p. 30).

Criticisms

The critical comments which follow have been divided into three categories: items, norms, and construction.

Items: For several items (sketches) it is difficult, if not impossible, to determine what kind of work or vocation is portrayed. A naive person may not know what a scene depicts because of unfamiliarity with the particular occupation. The items should portray work activities and not occupations per se. (The item selection criterion used by Geist required that each item of the inventory be correctly identified by vocation by at least 85 percent of a sample of deaf high school students.)

Only vocational scenes are presented in the GPII:D:M. Lacking are the more general interest-activity type items—avocational, educational, leisure—that are included in other interest inventories. (Yet, the publisher's catalogue (Western Psychological Services, 1970) states that the purpose of the GPII:D:M is "to assess vocational and avocational interests of deaf males p. 64.") Furthermore, a disproportionate number of items represent mechanical or artistic vocational activities (see Table 2). In general, manual and technical occupations are emphasized and professional occupations are slighted. A more balanced item distribution would be desirable.

Norms. Geist states in the GPII:D:M manual (1962a) that "the purpose of the inventory is to assess the vocational interests of the deaf in determining the vocational interest pattern of deaf children and adults. Since interest profiles are presented for various occupational groups, guidelines are provided for occupations which deaf males may enter" (p. 1). (Italics added.)

When this statement is considered in conjunction with the fact that only those occupations most numerous among deaf males were selected for normative development (Occupational Conditions Among the Deaf, 1959), then it is apparent that Geist's suggested uses of the inventory would tend to restrict the occupational awareness of deaf persons and to limit vocational opportunities to "traditional" deaf occupations. Certainly deaf persons are capable of preparation for entry into a wider variety of occupations than those in which they currently find employment.

It can even be questioned whether deaf norms are necessary or useful for the educational and vocational guidance of deaf persons. Since deaf persons live and work in a "hearing world," it would seem reasonable, if not necessary, to have norms on hearing per-

TABLE 1
Cumulative Scoring Key for the Geist Picture
Interest Inventory: Deaf Form: Male

Triad	1	Item 2	3	Scales Keyed Per Triad
1	M, A	S	P, Ss	5
2		-	A	1
3	S, O	M, A	C	5
4	M	M, A	C, L	5
5	M	C, L	A	4
6	D	O, A	S, Co	5
7	M, A	M	M	4
8	M, O	M	A	4
9	M	M	O	3
10	M, A	M	M	4
11	A	O, Co	C, L	5
12	M, A	M	M	4
13	M	P, C	M	4
14	S	M, A	M, O	5
15	M, A	M, S	A	5
16	A	C	A	3
17	S, Co	P, S, SS	S	6
18	-	A	O	2
19	O	A	D	3
20	M, Co	M	L	4
21	C	-	-	1
22	S	Co	P, Ss	4
23	M, A	O	M	4
24	A	P, O, SS	M, A	6
25	P. Co, SS	M, S, Co	S, Co	8
26	-	O	A	2
27	S	P, L, SS D	Co, A	7

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Legend: P-Persuasive, C-Clerical, M-Mechanical, S-Scientific, O-Outdoor, L-Literary, Co-Computational, A-Artistic, SS-Social Service, D-Dramatic.

This table was constructed by superimposing each of the ten interest scale scoring keys on the answer blank.

sons. In fact, Geist (1962b) concluded (speculatively) that "the interests of the deaf seem to be no different from those of the hearing in similar occupations (p. 55)." Possibly deaf norms could supplement general norms, but not replace them.

Construction. The selection of items and their assignment to the various scales resulted in a very undesirable situation—that of forced correlations between the interest scales. The statistical problems which arise in the treatment of data from non-independent scales are great. From a psychological point of view, the implications are even more serious. Stereotypes and misconceptions regarding interests and occupations are advanced or maintained. The most flagrant example for the GPII:D:M occurs with the keying of Social Service and Persuasive items. All six Social Service items are also keyed as Persuasive items (see Table 1). Thus all persons who have high inventoried persuasive interests are forced to have high social service interests, and vice versa (six of the seven Persuasive items are keyed on the Social Service scale). Thus, it is not surprising that the average correlation between Social Service and Persuasive scale scores for all normative samples is .94. One seriously doubts that social service interests and persuasive interests are identical; at least, it should be an empirical question. Other examples: ten of the 23 Artistic items are keyed on the Mechanical scale, three of the five Literary items are keyed on the Clerical scale, and four of the nine Computational items are keyed on the Scientific scale.

As noted previously, the item triads were not assembled for maximal discrimination, and some are practically useless for this purpose (see Table 2). All three items in triads 7, 10, and 12 are keyed on the Mechanical scale; therefore, the minimal valid discrimination in these triads is put in a mechanical context. All three items in triad 17 are keyed on the Scientific scale and the three items comprising triad 25 are keyed on the Computational scale. There are twelve additional instances of two items in a triad being keyed on one interest scale. Geist (196a p. 2) states that all items are keyed on one or more of the ten scales, but it is apparent from the cumulative scoring key of Table 1 that six items are not keyed on any scale.

A relatively minor point, but one which may be important to counselors using the GPII:D:M, concerns the determination of the intensity of a client's inventoried interests. Geist (1962a, p. 14) states that strong or weak interests are areas in which a person

TABLE 2
Scale Summaries for the Geist Picture Interest Inventory: Deaf Form: Male

Interest Scales	Number of Items Kayed	Number of Triads Keyed	Triple-Keyed Triads	Double-Keyed Triads	Range of Raw Scores	
					High	Low
Persuasive		7			7	0
Clerical		7			7	0
Mechanical	30	16	7, 10, 12	4, 8, 9, 13 14, 15, 20 23	16	3
Scientific	12	9	17	25	9	1
Outdoor	11	11			11	0
Literary	5	5			5	0
Computational	9	7	25		7	1
Artistic	23	20		15, 16, 24	2;	0
Social Service	6	6			6	0
Dramatic	3	3			3	0
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This table was constructed by summarizing the data in Table 1.

scores high or low relative to a selected norm group; he recommends T-scores above 70 (or below 30) as indicating a "significant" interest (or lack of interest). This suggestion constitutes a misuse of the concept of "significance" which is standard in statistical hypothesis testing. The scale scores could be reported as percentiles or stanines (see Durost, 1962).

Suggestions

At this point it may be concluded that the GPII:D:M as a psychometric instrument is deficient. It does not meet the minimal standards of test construction expected of all published tests. This general conclusion has been reached by test reviewers (Tiedeman, 1960; Hahn, 1965; Shimberg, 1965) of Geist's non-deaf picture interest inventory. Shimberg (1965) concluded that the 1964 edition of the Geist non-deaf inventory may be useful as a clinical tool with poor readers, but "any attempt to provide guidance on the basis of normative information currently available would be a serious mistake p. 277)". The most general criticisms of these reviewers concern Geist's tendency to make unsupported (and occasionally erroneous) statements. This tendency has been noted for the GPII:D:M as well.

Therefore, rather than suggest a revision of the GPII:D:M, it is proposed that a new interest inventory for use with the deaf be developed. The recommendations made below are implied in the criticisms previously noted.

Items. The stimuli comprising the interest inventory should portray work activities and not occupations per se. The item sample should include avocational, educational, and leisure activities, all of which are vocationally relevant. Professional-type activities as well as mechanical and technical activities are required for a representative item distribution. Lastly, the inventory should consist of at least 60 triads to insure adequate reliability.

Norms. The norming phase of test construction is actually a carefully planned sampling procedure. Norms should be constructed for deaf and hearing samples (male and female) of well-defined occupational and student groups.

Construction. It is no longer necessary to specify scales or categories of interest (e.g., persuasive, scientific, clerical, etc.) in the development of interest inventories. The occupational "norm profiles" which result from the norming phase can be stored in computers and used to report a client's interest pattern directly, as the extent of his similarity to the average interest patterns of the

various norm groups. A statistical formula has been derived (Clemans, 1958) and used to revise the Kuder Interest Inventory (Kuder, 1968) which now reports a client's pattern of interests as correlations with 50 occupational groups.

To summarize, the accurate assessment of the vocational interests of deaf clients is of sufficient importance in counseling and rehabilitation planning to justify the development of a psychometrically sound instrument. This review has documented the inadequacies of the currently available inventory and provided an outline of recommendations for the development of a new interest inventory for use with deaf adults.

NOTE

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