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## **PERSONALITY ASSESSMENT OF ENTERING HEARING—IMPAIRED COLLEGE STUDENTS USING THE 16PF, FORM E**

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**RAYMOND J. TRYBUS, Ph.D.**

The difficulties encountered in the psychological evaluation of hearing-impaired persons have been frequently noted (e.g., Levine, 1960; Vernon, 1967 and 1968; Myklebust, 1960) and appear to relate to two main factors. One is a factor of familiarity with the procedures and format of standardized testing; e.g., alternating between reading items on the test blank and putting answers on a separate answer sheet, pacing oneself in time-limited tests, following printed directions, evaluating one's own ideas and preferences in self-report items with no "right" or "wrong" answers. This is an especially important variable in the use of self-administered tests in group settings. The second and greater problem is that of the language level of the test items. Some accommodations to these two problems have been made in the areas of intelligence and academic achievement testing, but the area of personality evaluation remains an especially difficult one for workers with the deaf. Most standardized tests are of very limited value because of the two problems noted above, and because of the lack of data on appropriate normative populations of deaf persons against which to compare the individual being evaluated. These difficulties are present in the one-to-one evaluation setting as well, but there the clinician's sensitive and skillful use of himself and his reactions to the client as diagnostic information can compensate for the limits and shortcomings of the tests themselves. This additional compensating information is not available, however, when tests are used for screening, for group assessment for research purposes, or for identifying in a population those "high-risk" individuals who may need special services. It is in these latter usages that counseling centers and other service agencies are particularly interested, although the value of this kind of personality information for the individual client contact situation can also be substantial.

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The Sixteen PF (for Personality Factors) Test is an objective instrument with respect to item content, response alternatives, scoring, and profiling; it is designed to measure the dimensions of personality as derived from extensive factor-analytic study of real life behavior and self reporting answers on questionnaire items. For practical purposes the test uses the 16 primary factors which will be described below; for special purposes and research use other factors, including higher order factors, can be computed. Each of the 16 factors is defined as a dimension with two poles or end-points; thus, an individual can be described as exhibiting either end of a dimension or any point in between. For example, Factor B, an intelligence factor, can be labeled as dull, low intelligence at one pole, vs. bright, high intelligence at the other pole. An individual's score on this factor then places him at one end or the other of this continuum, or at some point in between. The location of an individual's score on this factor thus places him at some relative standing on the personality factor in question, by comparison with some specified comparison group (norm group). An individual who is exceedingly bright by comparison with the general population will thus have a score at or near the pole labeled "bright, high intelligence." On the other hand, if this individual were to be compared with a norm group consisting entirely of nuclear physicists, the same score might locate him, say, near the middle of this exceptionally bright group of people on the dimension of intelligence.

There are many ways to express, statistically, where an individual's score on some dimension locates him with respect to the comparison group. The 16 PF uses "sten" scores (from "standard ten") to do this. The possible sten scores thus run from 1 to 10, with a mean of 5.5 and a standard deviation of 2.0. A person whose score is exactly at the mean or average for his comparison group would have a sten score of 5.5 on that dimension. Scores higher or lower than 5.5 indicate relative standing away from this mean toward one or the other of the poles or endpoints which define the dimension.

Each of the 16 dimensions (or factors or scales) has its endpoints defined in terms of technical labels that encompass the relevant research findings; these endpoints can also be defined more simply and approximately by the use of a few descriptive terms giving the "flavor" of the dimension. The following are such descriptions of the endpoints of the 16 dimensions:

<b><u>FACTOR</u></b>	<b><u>MEANING OF LOW SCORE</u></b>	<b><u>MEANING OF HIGH SCORE</u></b>
A	Reserved, aloof	Outgoing, warmhearted
B	Dull, less intelligent	Bright, more intelligent
C	Emotional, affected by feelings	Emotionally stable, mature
E	Submissive, humble, mild	Dominant, assertive, aggressive
F	Sober, serious, prudent	Enthusiastic, happy-go-lucky
G	Casual, expedient	Conscientious, moralistic
H	Timid, shy, restrained	Adventurous, bold, uninhibited

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<b><u>FACTOR</u></b>	<b><u>MEANING OF LOW SCORE</u></b>	<b><u>MEANING OF HIGH SCORE</u></b>
I	Tough, practical	Imaginative, sensitive, artistic
L	Trusting, easy to get along with	Suspicious, hard to fool
M	Conventional, proper, careful	Unconventional, eccentric
N	Simple, unpretentious	Sophisticated, shrewd
O	Confident, self-assured	Insecure, apprehensive
Q1	Conservative, traditional	Experimenting, liberal
Q2	Group-dependent, sociable	Self-sufficient, independent
Q3	Undisciplined, impulsive	Self-controlled, considerate
Q4	Stable, calm, relaxed	Tense, restless, impatient

The results of an individual's scores on the 16 scales of the test thus form a "profile" which indicates his standing compared to the norm group on the 16 factors of normal personality. The norm group to which the individual is compared is thus of crucial importance in the understanding of the results of the test. For example, it might be interesting to compare an individual to the hypothetical group of nuclear physicists mentioned above, but the results of such a comparison would be of no use in estimating how the individual will compare to the student body in a school for the deaf or how well he is likely to fit in at Gallaudet College. Comparing the individual to an appropriate norm group is thus of critical importance, and it is the problem to which the present paper is addressing itself.

The 16 PF first consisted of parallel forms A and B for high-school literate adults; forms C and D followed, shortening the test and reducing the reading level to about that of newspaper literacy. Even this was inadequate for large numbers of low-literate adults, and in 1967 Eber and Cattell devised Form E for this group, with a reading level between grade 3 and 6. As a result, it is a potentially valuable instrument for use with deaf adults who typically read in this literacy range. Its usefulness is being investigated at Gallaudet College, where the majority of incoming students do not meet minimal standards for college admission, and are assigned to a preparatory year.

In addition to the lower reading level, Form E also incorporates a different response system, having only two alternatives instead of the three alternatives used in the other forms. This two-choice option reduces the number of incorrectly answered protocols and simplifies the judgmental task involved in responding to each item. In Form E the individual selects either the left-hand or the right-hand alternative of a pair, and marks the corresponding left-hand or right-hand box of a pair on the answer sheet. It is also shorter in length than the original forms, with a total of 128 items as compared with the 187 items of Forms A and B. The present study will report on the use of this instrument with the group of deaf and hard of hearing students who entered Gallaudet College in the summer of 1971, and will present preliminary norm tables based on this population.

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### Procedure

The 16 PF, Form E, was administered to a total of 280 incoming students, 142 female and 138 male. All students accepted for admission to Gallaudet College have a hearing loss and related special communication needs sufficient to make it very difficult or impossible for them to profit from a college setting designed for the normally hearing. Beyond this definition of functional disability, figures are not available regarding precise extent of hearing loss for the group as a whole at the present time. The 121 incoming students who attended the summer session took the test near the beginning of that session. The remaining 159 students took the test in mid-August during the orientation program for new students. All testing was done in a group setting in a classroom. In accordance with the standard procedure, no time limit was imposed; most students, however, finished within one hour. The t-test for the difference between group means was then used to compare this Gallaudet sample with various appropriate normative groups on whom data was presented in the Interim Manual Supplement for Form E (Eber and Cattell, 1971). Comparisons were also made between males and females within the Gallaudet sample, establishing the appropriateness of separate data presentation and separate norm tables for the two sexes.

### Results and Discussion

For each sex, norm groups are available for ages 14-20 and for ages 21-59. The Gallaudet sample had a mean age of 19.6 years for the total sample, 19.7 for males and 19.5 for females. The standard deviations for these three groups were 3.0, 2.7, and 3.3 years, respectively. This poses some questions as to which age norm group is the more appropriate for comparison, and thus comparisons were made with both age groups for both sexes. For the Gallaudet females, compared with the age 14-20 norm group, differences between the corresponding scales were non-significant for scales A, E, G, H, I, M, and N. Differences significant beyond the .01 level were found for the remainder of the scales of the test. By comparison with the older (21-59) norm group females, the Gallaudet females showed no significant differences on scales A, N, and Q3. Differences on scales M and O were significant beyond the .10 level; scale I beyond the .05 level; and all other scales showed significant differences beyond the .01 level. In a rough sense, then, the Gallaudet female sample showed a closer "fit" with the younger age group.

Among the Gallaudet males, in comparison with norm group males aged 14-20, differences were nonsignificant on scales M, N, and Q4. Scale O showed differences significant at the .05 level, and all other differences were significant beyond the .01 level. By comparison with the older male group

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(aged 21-59), differences were not significant on scales N and Q3. The difference on scale M was significant at the .10 level, and all other scales showed differences significant beyond the .01 level.

The direction and meaning of these differences can be summarized as follows, in each case for the comparison with the age 14-20 norm groups. For the females, the greatest difference was on Factor B, an intelligence factor, with the Gallaudet females being substantially brighter than the norm group; this is as would be expected for a college group by comparison with general norms. Gallaudet females were also more emotionally stable, more happy-go-lucky, more liberal in their thinking, and more controlled and self-disciplined than the normative average. They were also less suspicious, less apprehensive and troubled, less self-sufficient, and less tense than the norm.

For the males, again the intelligence factor displayed the greatest difference, in favor of the Gallaudet group. Gallaudet males were much more liberal in their thinking, more sensitive and tender-minded, more impulsive and happy-go-lucky, more outgoing, emotionally stable, assertive, and aggressive, more bold and venturesome, more suspicious, and more

TABLE 1

Sten Table, 16 PF, Form E\*  
Gallaudet College Females

FACTOR	STEN SCORES										Group	Group
	1	2	3	4	5	6	7	8	9	10	Raw Score	Raw Score
											Mean	S.D.
A	0-2	3	4	5	-	6	7	-	8	-	5.7	1.4
B	0-3	4	5	6	7	-	8	-	-	-	6.8	1.2
C	0-1	-	2	3-4	5	6	-	7	8	-	5.0	1.8
E	-	0	1	-	2	3	4	5	6	7-8	2.7	1.6
F	0-1	2	3	4-5	6	7	-	8	-	-	5.9	1.8
G	0-2	-	3	4	-	5	6	7	-	8	4.9	1.5
H	-	0	1	2	3	4	5	6	7	8	3.5	2.1
I	0-2	3	4	5	6	7	-	8	-	-	6.0	1.6
L	0	-	1	2	3	-	4	5	6-7	8	3.3	1.5
M	0-1	-	2	-	3	4	-	5	6	7-8	3.6	1.3
N	0-1	2	-	3	4	-	5	6	-	7-8	4.2	1.3
O	0	1	2	3	4	5	6	7	8	-	4.6	1.9
Q1	0	1	2	3	4	5	6	-	7	8	4.6	1.7
Q2	-	0	-	1	2	3	4	5	6	7-8	2.4	1.8
Q3	0-1	2	3	4	5	6	-	7	-	8	5.3	1.6
Q4	-	0	1	2	3	4	5	6	7	8	3.5	1.8

\*Based upon 142 cases, mean age 19.5 years, s.d. = 3.3 years. Entering Gallaudet College freshmen and preparatory students. All deaf or hard of hearing. Body of table contains raw scores; read to top line for Sten scores.

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controlled and self-disciplined. They were less conscientious, less apprehensive, and less self-sufficient than the reference group.

Tables 1 and 2 are the preliminary norm tables based on this deaf population of 142 females and 138 males. It is imperative to bear in mind that all these students were of sufficient intellectual and personal capacities to have been admitted to Gallaudet College, and they are therefore not at all representative of the general deaf population in this age range. These tables are presented, however, since they may prove of some use to those who are concerned about the likelihood of a given individual being able to "fit in" at Gallaudet, and may serve to point up possible areas of special difficulty in adjusting to the people who now constitute Gallaudet's student body. It would be a serious error at this point to use these data in anything more than this suggestive fashion; it would be particularly premature to use divergences from these norms as a reason for discouraging or preventing an individual from applying to or attending Gallaudet. As our data base increases in the next year or two, these norm tables will become more definitive. In addition, studies are underway and will be continued each semester, to relate 16 PF scores at the time of admission to such criterion variables as survival into

**TABLE 2**

**Sten Table, 16 PF, Form E\*  
Gallaudet College Males**

FACTOR	STEN SCORES										Group	Group
	1	2	3	4	5	6	7	8	9	10	Raw Score	Raw Score
											Mean	S.D.
A	0-1	2	3	4	5	—	6	7	8	—	5.0	1.6
B	0-3	4	5	6	7	—	8	—	—	—	7.0	1.3
C	0-1	2	3	—	4	5	6	7	—	8	4.8	1.5
E	0	—	1	2	3	—	4	5	6	7-8	3.2	1.6
F	0-1	2	3-4	5	6	7	—	—	8	—	5.9	1.8
G	0-1	—	2	3	4	5	—	6	7	8	4.3	1.4
H	—	0	1	2	3	4	5	6	7	8	3.8	2.0
I	0	—	1-2	3	4	5	6	7	—	8	4.2	2.0
L	0	1	2	—	3	4	5	6	—	7-8	3.8	1.6
M	0	1	2	—	3	4	5	—	6	7-8	3.6	1.4
N	0-1	—	2	3	4	—	5	6	—	7-8	4.2	1.4
O	0	—	1-2	3	—	4	5	6	7	8	4.0	1.8
Q1	0	—	1-2	3	—	4	5	6	7	8	4.7	1.6
Q2	—	0	—	1	2	3	4	5	6	7-8	2.6	1.9
Q3	0-1	2	3	4	5	6	—	7	8	—	5.2	1.6
Q4	—	0	—	1-2	3	4	5	6	7	8	3.2	2.0

\*Based upon 138 cases, mean age 19.7 years, s.d. = 2.7 years. Entering Gallaudet College freshmen and preparatory students. All deaf or hard of hearing. Body of table contains raw scores; read to top line for Sten scores.

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succeeding semesters and years of college, likelihood of seeking counseling assistance for academic or personal problems, likelihood of being seen as a problematic individual by college authorities, leadership abilities demonstrated in campus organizations, and so on. In addition, test scores will be related to such demographic and historical variables as level of hearing loss, preferred method of communication, residential vs. day school education, etc. These data will assume real predictive value when, and only when, the relationships of test scores to criteria of this kind have been established.

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