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PSYCHOLOGICAL EVALUATION OF DEAF REHABILITATION CLIENTS

ROBERT DONOGHUE AND BRIAN BOLTON

Comprehensive psychological assessment is essential to the planning and provision of rehabilitation services to deaf clients. Several authors (Falberg, 1967; Levine, 1960; Vernon & Brown, 1964) have discussed general psychological test procedures with deaf persons. The purpose of this paper is to describe the psychological evaluation program employed at the Community Project for the Deaf (CPD) of the Chicago Jewish Vocational Service (CJVS). The CPD provides a variety of rehabilitation services to deaf clients in a vocational context; accordingly, the primary goal of the psychological evaluation is to gain information about a client's vocational potentials and limitations.

The CPD serves a clientele with diverse social backgrounds and wide-ranging intellectual abilities. Thus the first requirement of our assessment techniques was that they lend themselves to administration to this heterogeneous group. The second requirement was that they not rely on language as the medium of assessment since retarded language development is a common consequence of deafness. Nonlanguage or performance tests do not significantly penalize deaf persons (Vernon, 1967; 1968).

In actual practice, it was not possible to construct a battery based on the criteria of wide applicability and nonlanguage format alone. The achievement of applicability in a diverse group of clients was made more difficult because of the presence of visual defects and motor incoordination in many subjects. It was also difficult to adhere to the nonlanguage criterion because a certain amount of

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verbalization is inherent in the administration of most published tests, despite publishers' claims to the contrary. Tests in the battery had to be such as not to penalize clients who possessed visual or motor difficulties, and their instructions had to be easily translated into signs or pantomimic gestures. Several instruments initially appeared to meet these requirements, and after a period of trial and winnowing, a standard battery was achieved. The battery of tests, described below, admittedly is not perfect; it does, however, reflect the best we were able to assemble, using standardized tests commonly employed with hearing subjects.

The psychological evaluation of each CPD client is conducted in two separate sessions. The first session, Phase I, concentrates on communication skills, intelligence, and psychomotor ability. Phase II is concerned with personality, interests, and work attitudes. A third phase is sometimes employed if it is determined that the client possesses the ability to take tests involving verbal skills.

Prior to testing, both intake and referral records are compiled, checked for accuracy, and forwarded to the psychologist for review. Intake material contains information relevant to rehabilitation goals: medical and emotional history, previous test results, educational levels achieved, vocational experience, family relationships, social activities, personal vocational aims, and a narrative of the intake interview which is conducted by a vocational counselor. In this last-mentioned item, the counselor records his impressions of the client. Referral data generally contain all of the information gathered in the intake record in abbreviated form and also include professional recommendations for placing the client in the appropriate CPD service category.

All testing is done, or is supervised, by the project psychologist who holds an M.A. in clinical psychology and is himself deaf. His broad experience in the deaf community renders him particularly adept at understanding clients who have limited communication skills (and thus require the use of pantomimic techniques during test administration).

The psychological evaluation of CPD clients can be divided into the following areas:

(1) **Communication Skills.**

Each client is evaluated on ten communication skills, four expressive and six receptive. The Communication Rating Form is reproduced in Figure 1. The ratings are made by the project

psychologist assisted, where necessary, by a hearing secretary fluent in the manual language.

FIGURE I

COMMUNICATION RATING FORM

Reception

Unaided Hearing*	5	4	3	2	1
Aided Hearing*	5	4	3	2	1
Speech Reading*	5	4	3	2	1
Reading**	5	4	3	2	1
Manual Signs**	5	4	3	2	1
Fingerspelling**	5	4	3	2	1

5. Excellent. Understands most speakers (signers, fingerspellers). Adapts quickly to new speakers. Seldom must ask speaker to repeat.

4. Very Good. Understands familiar speakers. In time adapts to new speakers. Occasionally asks speaker to repeat.

3. Average. Based on academic level at fourth grade. Understands people he has known for some time. New speakers present some problem. Does miss some of what is said.

2. Fair. Familiar persons must modify speech for understanding. New speakers present real problems. Gains cues from situation in order to get the idea.

1. Poor. Great difficulty in understanding speaker. Relies upon others to translate for him.

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Communication Rating Form

Expression

Oral Speech*	5	4	3	2	1
Writing**	5	4	3	2	1
Manual Signs**	5	4	3	2	1
Fingerspelling**	5	4	3	2	1

5. Excellent. Client is easy to understand. Expresses abstract ideas well. Possesses large vocabulary.

4. Very good. Takes a brief period to adjust to client's mode of expression. Some trouble with abstract ideas.

3. Average. Based on academic level at fourth grade. Takes time to adjust to client's particular pattern of expression. Vocabulary is adequate; some trouble with tenses.

2. Fair. Only familiar persons can understand client without great difficulty. Vocabulary is somewhat limited.

1. Poor. Extremely difficult to understand client. Vocabulary is severely restricted. Often relies on pointing and gestures.

*Hearing Criteria: rated by hearing person and compared to hearing population.

**Deaf Criteria: rated by deaf person and compared to deaf population.

Four criteria are used to assess communication ability: the ability of the client to express himself clearly and distinctly; the ability to present and receive ideas in their normal sequence and tempo; the extensiveness of vocabulary; and, finally, the capacity to express himself in emotionally satisfying terms. Both oral and manual sign language skills are considered in this process. The evaluation of communication skills, aside from its molar aspects, serves also to aid the examiner in his global assessment of general educational level, social attitudes, personality dynamics, and ex-

tent of organic dysfunction.

A factor analysis of the Communication Rating Form, conducted for a heterogeneous sample of 159 clients, revealed that two independent factors accounted for almost all of the variability in the ten ratings: a Manual Communication factor, including manual signing and fingerspelling skills, and an Oral-Verbal Communication factor, including speech and speechreading, reading and writing, and residual hearing (Bolton, (b)). Both communication factors were independent of nonverbal intelligence.

(2) Intelligence.

Intellectual functioning is assessed by two standard nonverbal tests.

Ravens Progressive Matrices Test (RPMT). The RPMT requires education of relations among abstract items. It consists of 60 matrices, or designs, which are divided into five sets. In each set the solution to the first problem is as nearly as possible self-evident; the following eleven problems become progressively more difficult (Raven, 1956). The RPMT is administered to deaf clients via simple pantomimic gestures. The client is shown the first figure (A-1); his attention is next drawn to the supplementary choices beneath the main drawing; he is then directed to the empty "pocket" and instructed to select a choice from the alternatives. This is accomplished by pointing to each of the alternatives in turn and relating them to the "pocket" until a positive response is obtained. Empirical observation over a period of time indicated such an approach offered the greatest degree of initial comprehension. If necessary, verbal instructions are given either orally or by signing, depending on the client's best mode of communication.

Revised Beta Examination. The Revised Beta is a revision of the Army Beta of World War I fame. It consists of six subtests: Mazes, Digit Symbol, Error Recognition, Formboard, Picture Completion, and Identities. Explanations to the examinee rely principally on practice exercises preceding each subtest. Generally, the procedure is to allow the client the opportunity to recognize the required task. If this is not accomplished, the examiner demonstrates by partially completing a given problem and allowing the client to finish the work and subsequent practice items.

Deaf clients of the CPD score at the average level on all subtests except the Formboard. They seem to have difficulty grasping the basic notion of that task. If the Formboard test were omitted from

the scoring of the Revised Beta, the average performance of CPD clients would exceed an IQ of 100. We would suggest the development of a demonstration model for use in introducing the Formboard subtest.

The close-to-average performance on the Revised Beta is in direct contrast to the performance of CPD clients on the RPMT. The average RPMT score corresponds to the 25th percentile. The discrepancy between the performance of deaf clients on these two tests can most parsimoniously be explained by the significant motor-intellective component of the Revised Beta (see Bolton, (b)).

(3) Other Abilities.

Revised Minnesota Paper Formboard Test (MPFB). Although the MPFB is sometimes referred to as a measure of “concrete nonverbal intelligence,” it does measure abilities which are relatively independent of intelligence (Likert & Quasha, 1948). The MPFB test measures the ability to visualize and manipulate objects in space; it is similar to the Formboard subtest of the Revised Beta. Apparently the difference in format is advantageous to deaf persons because the average CPD client’s performance is at the 35th percentile of industrial norms.

Administration of the MPFB is similar to that of the Ravens Progressive Matrices Test. The client is “told” via pantomime first to study carefully the task-item in each practice series. The examiner points with the left index finger at the task-item with a continual tapping motion and, at the same time, indicates possible solutions with the right index finger until the correct response is elicited. This operation is repeated on the next three items until the client demonstrates that he is capable of selecting the appropriate matching construct. This instruction parallels the test’s printed instructions, but does not attempt to duplicate them since they are too sophisticated for the majority of our clients.

Purdue Pegboard. The Purdue is a standard test of manipulative dexterity (Tiffin, 1948). It contains four subtests, two of which are primarily measures of hand speed (Right Hand, Left Hand). The third test, Both Hands, is a measure of gross motor coordination. The fourth, Assembly, which requires the use of both hands in performing a sequential operation, measures finger dexterity as well as motor coordination.

The Purdue is very easily administered by simple demonstration. It thus provides an almost universally applicable measure

of an ability which is important to successful performance on many semi-skilled jobs. For the CPD sample, the average performance for males is close to the median, while females perform at the 25th percentile on the average.

(4) Psychomotor Evaluation.

This is a judgmental evaluation of the possibility and extent of organic involvement. It is based on several sources of information. The ability of the client to reproduce accurately the Bender-Gestalt figures constitutes the examiner's primary evaluative source. Many of the etiological factors involved in hearing impairment do not restrict themselves exclusively to the auditory mechanisms. Psychomotor dysfunction is a frequent side-effect of deafness. Organicity is suspected when the client tends to be perseverative in his actions, has difficulty in organizing his thinking and output, either cannot complete work once begun or cannot find within himself the ability to correct his errors in execution, indulges in concretivity (over-simplification of a task), exhibits dissociative behavior that suggests he cannot retain a given concept for any length of time, and cannot reproduce figures which intercept. With the exception of this last, which is attributed to disturbed perception due to severe lesion in the parietal and occipital areas of the neocortex (Hutt, 1945), little information is available for the purpose of determining specific etiologies.

Judgment, therefore, must necessarily be global and tentative in the absence of clear-cut medical diagnosis. The possibility always exists, moreover, that the client's behavior may be a function of emotional influences, or a combination of physical and emotional problems. Findings on the Bender-Gestalt are therefore checked carefully with the results of other tests which involve motor and visual activity, such as the Purdue Pegboard and the House-Tree-Person.

(5) Personality.

Much controversy surrounds the evaluation of the "deaf personality." (See Mykebus, 1964; Donoghue, 1968.) Brenner and Thompson (1967) have presented a thorough discussion of projective techniques used to assess the personality of deaf adults. Two projective tests, the Bender-Gestalt and the House-Tree-Person, are used at the CPD to evaluate the social and emotional adjustment of the clients.

Bender-Gestalt. The Bender-Gestalt test (Bender, 1946) is composed of nine graphic patterns adapted from Wertheimer's

(1923) original studies of molar perceptive reactions. The client is presented with each pattern in turn and is requested to duplicate it. All instruction is given in pantomime. This test is always the first to be administered, its form and composition being extremely valuable in reducing tensions and resistance to testing. Referrent material employed to assess this test is found in Bender (1938), Hutt (1945), and Weissman and Roth (1965).

House-Tree-Person. The House-Tree-Person test makes use of freehand drawings. Buck (1948) has described this test as being dual-phased in that it is non-verbal, creative, and unstructured, on the one hand, and to some extent, verbal, apperceptive, and structured, on the other. In our use of this test, emphasis is placed on its non-verbal aspects: an attempt is made to determine personality dynamics through an analysis of the client's production. Verbal associations are accepted but not actively solicited. As with the Bender-Gestalt, the House-Tree-Person is primarily useful in the sense that it provides an opportunity for the global assessment of the client's current emotional behavior.

(6) Vocational Interests and Work Attitudes.

Geist Picture Interest Inventory: Deaf Form: Male. The GPII is the only interest inventory designed specifically for use with deaf persons (Geist, 1962). It consists of 27 triads of vocationally relevant sketches. The client's choices of preferred activities can be compared to the choices of defined norm groups. Unfortunately, the GPII suffers from several serious psychometric shortcomings (see Bolton, (a), for an extensive review).

Sentence Completion Test (SC). The SC test was constructed by Professor Walter S. Neff of New York University several years ago when he was chief psychologist at CJVS. The test consists of 50 items, such as "My Mother..." and "Work is..." which are completed by the client. Fifteen of the 50 stems are work-related and are imbedded in the 35 more general stems. Because of their inadequate language ability many clients are not able to complete the SC test. Nevertheless, it has been an important instrument in the assessment of work attitudes, despite the fact that it is clinical in nature and not readily amenable to psychometric treatment. Responses indicate the client's present vocational preoccupations and also give insight into his habitual mode of responding to supervision, his attitude toward social participation, financial security, and vocational ideals and aspirations.

Semantic Differential Work Attitude Scale (SDWAS). The

SDWAS is an experimental instrument developed at the CPD (Bolton & Brown, in press). As the name indicates, the SDWAS is a direct application of Osgood's well-known semantic differential technique. Its primary advantage is its wide applicability; we estimate that it can be administered to at least 85 per cent of all deaf rehabilitation clients. This should not be surprising, considering that the basic assumption underlying the technique is that the Evaluation-Potency-Activity dimensions are innate to the human emotional response system.

For a substantial segment of the CPD clients the most dependable information regarding vocational interests and work attitudes is informally ascertained through discussion between the psychologist and the client.

(7) Supplementary Testing.

In addition to the foregoing, certain other tests are occasionally employed to clarify ambiguous results on the battery. Among the more popular of these are: the Wechsler Adult Intelligence Scale (WAIS), the Otis-Lennon and Stanford achievement batteries, the Rorschach Psychodiagnostik, the Thematic Apperception Test, the Strong Vocational Interest Blank, the Kuder Occupational Interest Survey, the Picture Interest Inventory, the Short Employment Test, and material dealing with specific areas, such as the Meier Art Test, various aptitude tests involving the computer field, etc. Since the content in these tests is often too sophisticated for the majority of our clients, their use is restricted to that number who can definitely demonstrate the ability to take them.

In summary, the psychological evaluation methods we employ at the Community Project for the Deaf can best be described as global. The status of our average client is such that we cannot in good conscience depend completely on instruments which obviously need further study in standardization, reliability, and validity of interpretation when used with deaf clients. We do believe that the testing program described in this paper provides information about our clients which is useful in planning for a maximally effective rehabilitation program.

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