Free Association Test (FAT) scoring and analysis program

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The Free Association Test (FAT) is designed for quantitative assessment of anxiety and hostility levels (Gottschalk & Gleser, 1969; Gottschalk, Winget, & Gleser, 1969). Each subject is requested to sit alone in a room and record a 5- to 7-min tape on personal experiences reflective of feelings. Subsequently, the tape is transcribed, and the resulting typescript is evaluated by means of content analysis for specific forms of anxiety (Death, Mutilation, Separation, Guilt, Shame, Diffuse) and hostility (Outward Overt, Outward Covert, Inward, Ambivalent). Scores for the six types of anxiety are combined into a summary measure, Total Anxiety. Summary measures for Total Hostility Outward and Total Inward and Ambivalent Hostility are obtained in a similar manner. Gottschalk and Gleser (1969) have developed sets of normative scores which can be used for comparative purposes with samples from several different populations (Silbergeld, Manderscheid, & O'Neill, 1975). Although the test is usually employed for solitary individuals, recent work also suggests the utility of a dyadic test for married couples (Silbergeld & Manderscheid, 1976).

A detailed procedure is required to derive final scores on each variable (see Gottschalk et al., 1969). For each nonsummary measure, the total weight equals the sum of products of subcategory frequencies and respective weighting factors. In general, the subcategories and weighting factors distinguish verbal references to self, animate others, inanimate objects, and denial. To adjust for the total number of words in the typescript and to state results in terms of score per 100 words, the total weight is multiplied by $100/(\text{total number of words})$. The resultant product is called the "raw score." The final corrected score is calculated by taking the square root of the sum of the raw score and $50/(\text{total number of words})$. Addition of $50/(\text{total number of words})$ to the raw score has the effect of minimizing the correlation between the corrected score and the total number of words. The square root

transformation reduces the skewness of the distribution of the final corrected score. For each summary measure, the total weights of the component nonsummary measures are added together before proceeding to the remaining computations. The FAT scoring and analysis program computes corrected scores for the 13 nonsummary and summary variables from the total weights for the 10 nonsummary measures.

Input. Input consists of one program control card, followed by n data cards per person, where n equals the number of sessions scored. The maximum n permitted is 15 sessions. For each person, data cards must be in session sequence, with no cards missing. The control card specifies the number of sessions, the title of the analysis, and the tape output option. Each data card contains the person's identification number, the group identifier, the session number, the total number of words in the typescript (missing values = 0000 and 9999), and the total weights for the 10 nonsummary FAT variables (missing value = 999).

Output. Output for each person includes corrected scores by session on the 13 nonsummary and summary FAT variables, as well as mean corrected scores by 5-session cluster (Sessions 1-5, Sessions 6-10, Sessions 11-15) and by 15-session cluster (Sessions 1-15). For the entire group, mean corrected scores are reported by session, by 5-session cluster, and by 15-session cluster. Standard deviation and sample size are printed with each mean score. The program also generates an optional tape on Unit 8 containing the corrected scores by session for each person, with individual and group identifiers.

Limitations. The program accommodates a maximum of 15 sessions and an unlimited number of respondents per run. A separate run is required for each group.

Computer and Program Language. The program is written in FORTRAN IV for an IBM 370/168. Conversion to other systems should require little or no reprogramming.

Storage. On the IBM 370/168, the storage requirement is 44K bytes.

Running Time. With a test data set of 12 respondents, the running time on an IBM 370/168 is approximately 1.18 sec.

Availability. Write to Dr. Sam Silbergeld, Mental Health Study Center, National Institute of Mental Health, 2340 University Boulevard East, Adelphi, Maryland 20783. A listing of the program, sample output, and source deck, including user's guide, program JCL, deck setup, and format specifications, are available at no cost.

REFERENCES

- GOTTSCHALK, L. A., & GLESER, G. C. *The measurement of psychological states through the content analysis of verbal behavior*. Berkeley: University of California Press, 1969.
- GOTTSCHALK, L. A., WINGET, C. N., & GLESER, G. C. *Manual of instructions for using the Gottschalk-Gleser content analysis scales: Anxiety, hostility and social alienation-personal disorganization*. Berkeley: University of California Press, 1969.
- SILBERGELD, S., & MANDERSCHIED, R. W. Dyadic free association. *Psychological Reports*, 1976, **39**, 423-426.
- SILBERGELD, S., MANDERSCHIED, R. W., & O'NEILL, P. H. Free association anxiety and hostility: View from a junior high school. *Psychological Reports*, 1975, **37**, 495-504.