

A MULTIVARIATE APPROACH TO PROFILING ALCOHOLIC TYPOLOGIES

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ABSTRACT

The once popular concept of the "alcoholic personality" has recently been called to question. The purpose of this study was to attempt to discover whether quantitative support could be given to a hypothesis of multiple alcoholic types. The 16PF profiles of alcoholics were submitted to cluster analysis and multiple discriminate analysis (MDA), respectively. The results indicate that there is no alcoholic personality, i.e., that the alcoholic population is heterogeneous consisting of at least three typologies.

INTRODUCTION

There has been much work devoted to the concept of the "alcoholic personality," i.e., that persons designated as alcoholic form a homogeneous group by virtue of a single symptom: excessive drinking (e.g. Overall, 1973; Miller, Bentinck, & Pokorney, 1967; Fuller, 1966). This unitary trait concept has led to the establishment of treatment programs which provide a general program for the treatment of persons labeled "alcoholic." The effects of these programs have been questionable at best and, as a result, rehabilitation efforts have met with only minimal success.

Recent findings indicate, however, that the unitary trait model is not adequate in explaining the phenomenon of alcoholism (Wanberg, Horn & Foster, 1977) and that nosologically there seems to be no distinct alcoholic group (Goldstein & Linden, 1969). Various studies have attempted to generate typologies within the alcoholic nomenclature on the basis of the Minnesota Multiphasic Personality Inventory (Goldstein & Linden, 1969), the 16 Personality Factor Questionnaire (Lawlis & Rubin, 1971) and character types (Winokur, Rimmer, & Rieich, 1971). The results of such studies strongly suggest that there are, in fact, distinct differences among alcoholics which preclude the use of the label "alcoholic personality."

The present paper concerns itself with personality dimensions of the alcoholic as measured by the 16 Personality Factor Questionnaire (16PF). Specifically, the purpose of this study was to investigate the hypothesis that there are multiple alcoholic types within the alcoholic population, i.e., that a group of persons exhibiting addictive behavior or excessive drinking patterns is similar only in overt behavioral symptomology.

METHODOLOGY

The 16PF, which is a multidimensional set of sixteen questionnaire scales designed to make available in a practical testing time information about an individual's standing on the majority of primary personality factors (Cattell,

Eber & Tatsuoka, 1970), was the psychometric instrument selected for the present study. The test instrument was administered on a group basis to 37 male alcoholics who were residents of a halfway house located in Southern Tennessee. The mean age of the Ss was 41.2 years. No extraordinary conditions were encountered in the data collection and all 37 interviews were usable.

CLUSTER ANALYSIS

Since the objective of the research was to determine if homogeneous subgroups or clusters of alcoholics could be identified from the overall group, the data were submitted to a cluster analysis routine (Veldman, 1967). The clustering procedure involved comparing the score profiles for the 37 Ss on the 16PF variables. The clustering routine used the raw score data from the 16PF to progressively associate the Ss into groupings in such a way as to minimize the variation within the clusters and maximize the inter-group distance between the groups. The clusters were selected on the basis of minimizing the error increase which would result from combining the Ss into a smaller number of groups. Based on the cluster analysis procedure, three groups were identified. The three groups contained 16, 8 and 13 subjects each.

DISCRIMINANT ANALYSIS

To facilitate comparisons between the three groups, the data were submitted to multiple discriminant analysis (Veldman, 1967). The dependent variable was the type of alcoholic as identified by the cluster program. The independent variables were the 16PF variables. Results from the discriminant analysis revealed two significant functions between the three groups. The Chi-Square values were 38.3 with 17 degrees of freedom and 28.1 with 15 degrees of freedom; the respective significance levels were .003 and .02. To further validate the discriminant function classification matrices were then constructed. Using the weights to classify the Ss, hit-ratios of 97 percent and 73 percent, respectively, were obtained for the two functions. These hit-ratios were extremely high relative to the *a priori* probabilities of 43, 22, and 35 percent, respectively, for the three groups.

The next step was to interpret the results so that a profile of the three groups could be compared and contrasted. The interpretation is based upon the discriminant structure correlations. These correlations indicate the relative significance of the original variables in discriminating between the groups. The structure correlations are Pearson-R's computed between the individual raw score distributions and the discriminant functions. As such, they can be interpreted in a manner similar to factor loadings. The discriminant structure correlation coefficients and their respective ranks are shown in Table 1. As can be noted, 11 of the 16 variables are significant contributors ($R > .40$) to the discriminant functions. Using these 11 variables it was possible to develop a profile of each group.

Table 1
 Summary of MDA Results
 For Three Alcoholic Subgroups

Variable ¹	Function I		Function II	
	Correlation ²	Rank	Correlation ²	Rank
A	.564	5	-.136	9
B	-.271	11	-.077	12
C	.431	9	-.599	4
E	.523	6	.648	3
F	.797	2	.147	8
G	-.157	13	-.075	13
H	.853	1	.043	14
I	-.048	14	.192	6
L	-.032	15	.672	2
M	.441	8	.083	11
N	.007	16	-.030	15
O	-.685	3	.173	7
Q ₁	.259	12	-.076	16
Q ₂	-.650	4	.109	10
Q ₃	.463	7	-.543	5
Q ₄	-.283	10	.680	1

¹The variables are the 16PF questions. See table 2 for the descriptive adjectives which define their nature.

²These coefficients are structure correlations which can be used to identify the relative discriminatory power of the independent variables; they are interpreted in a manner similar to factor loadings (Veldman, 1967).

FINDINGS

Results from the statistical analyses enabled the investigators to identify three distinct subgroups within the sample of alcoholics. Each of these subgroups is described and discussed in the following sections. Also, psychometric test profiles for the three groups are shown in Tables 2-4.

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Table 2
16 PF Profile of
Cluster Type I

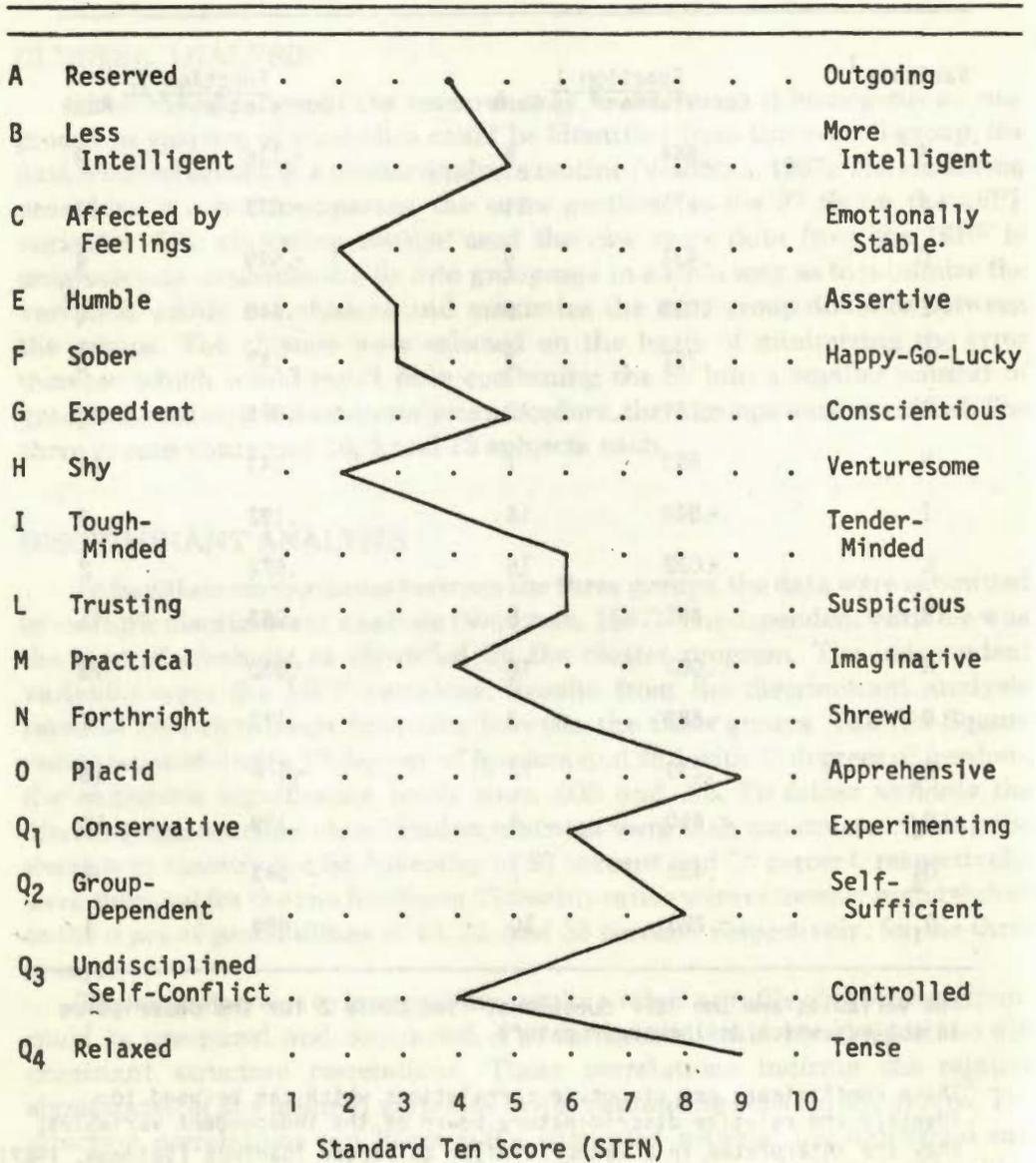


Table 3
16 PF Profile of
Cluster Type II

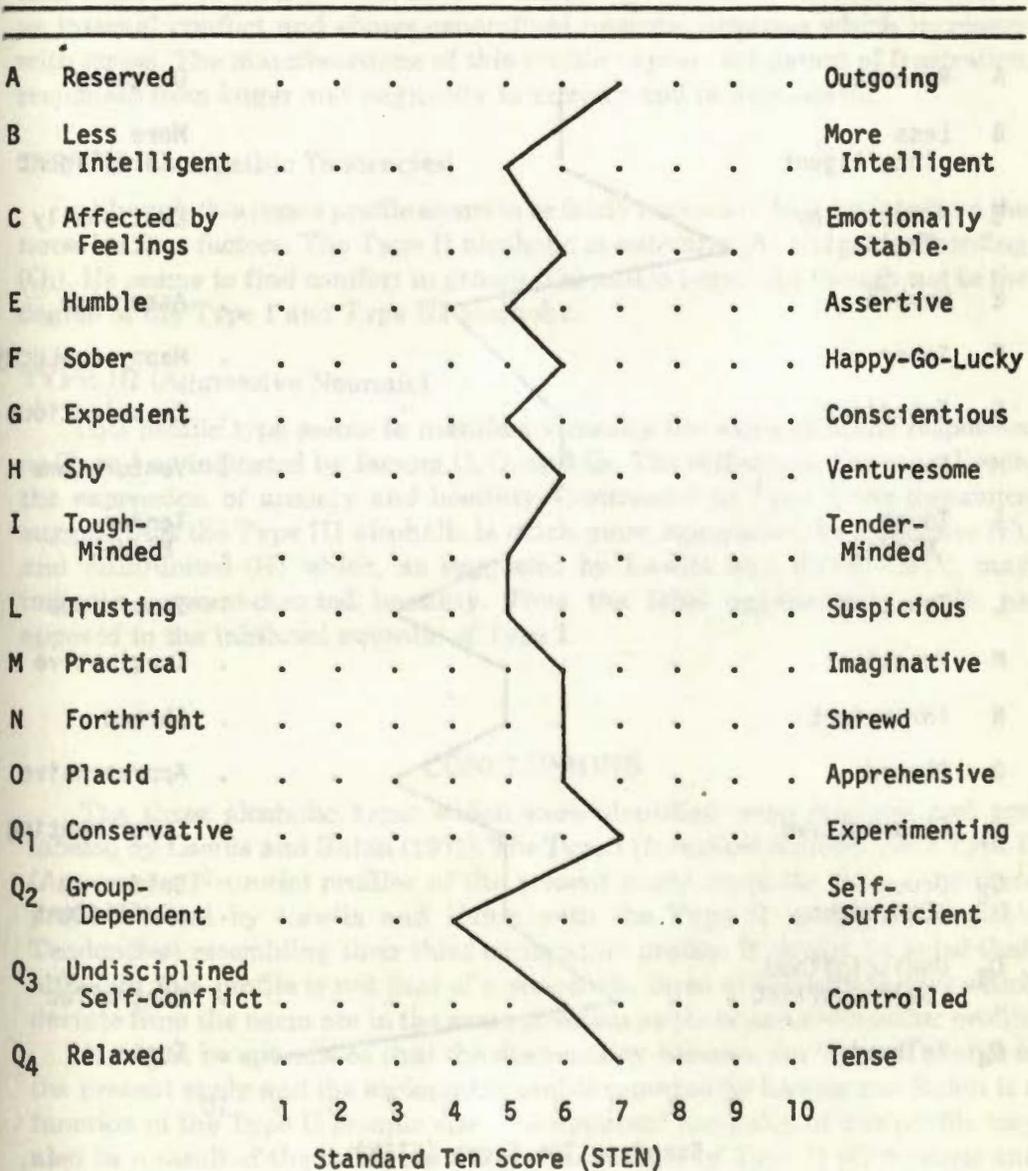
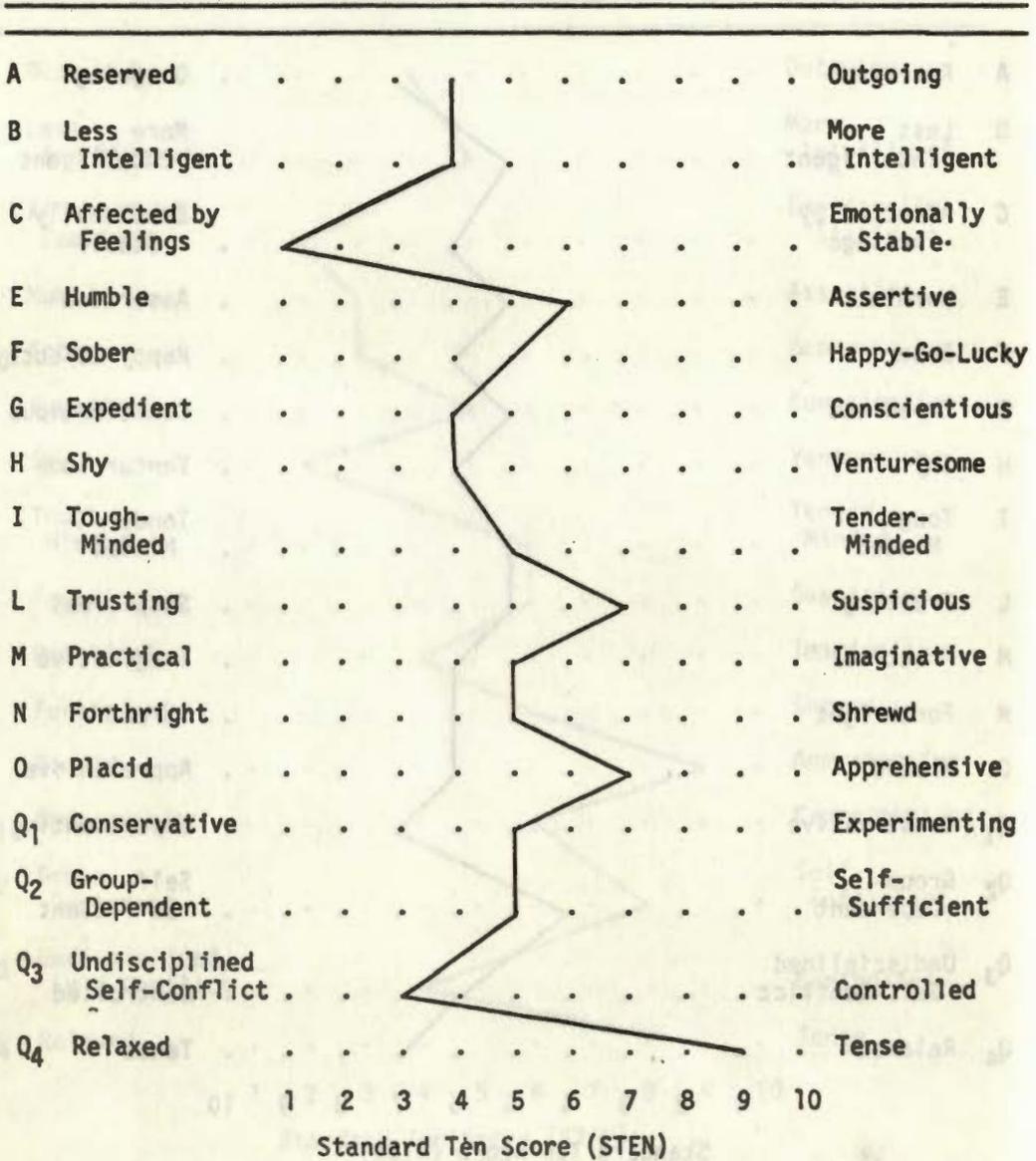


Table 4
16 PF Profile of
Cluster Type III



TYPE I (Inhibited Neurotic)

Judging from the collective dynamics of low C (ego strength), E (humble), F (sober), H (shy), and high O (apprehensive), Q₂ (self-sufficient) and Q₄ (tense), this profile seems to represent a group who is highly anxious and inhibited. The profile indicates a person of high susceptibility to threat who is intensely shy and tormented by an unreasonable sense of inferiority. He suffers his maladjustment as internal conflict and shows generalized neurotic response which increases with stress. The manifestations of this profile express the gamut of frustration responses from anger and pugnacity to anxiety and to depression.

TYPE II (Sociopathic Tendencies)

Although this type's profile seems to be fairly normal, it does deviate from the norm on four factors. The Type II alcoholic is outgoing (A) and experimenting (Q₁). He seems to find comfort in groups (Q₂) and is tense (Q₄) though not to the degree of the Type I and Type III alcoholic.

TYPE III (Aggressive Neurotic)

This profile type seems to manifest virtually the same neurotic responses as Type I as indicated by factors C, O, and Q₄. The difference, however, lies in the expression of anxiety and hostility. Contrasted to Type I, the dynamics suggest that the Type III alcoholic is much more aggressive (E), impulsive (F), and uninhibited (H) which, as suggested by Lawlis and Rubin (1971), may indicate outward-directed hostility. Thus the label aggressive neurotic as opposed to the inhibited neurotic of Type I.

CONCLUSIONS

The three alcoholic types which were identified were also reported and labeled by Lawlis and Rubin (1971). The Type I (Inhibited Neurotic) and Type II (Aggressive Neurotic) profiles of the present study replicate two of the three profiles found by Lawlis and Rubin with the Type II profile (Sociopathic Tendencies) resembling their third sociopathic profile. It should be noted that, although this profile is not that of a sociopath, three of the four factors which deviate from the norm are in the same direction as those of a sociopathic profile.

It might be speculated that the discrepancy between the Type II profile of the present study and the sociopathic profile reported by Lawlis and Rubin is a function of the Type II sample size. The apparent normalcy of this profile may also be a result of the differences in the mean ages of Type II (47.4 years) and those of Type I (38.5 years) and Type III (39.2 year). Again, it may be speculated that the older Type II alcoholic has been in treatment for a significantly longer period of time and has either learned how to respond to test items or as a result of treatment, does not exhibit any psychopathology as measured by the 16PF, but is still addicted to alcohol.

Overall, the results indicate that there are multiple alcoholic types, as measured by the 16PF, within the alcoholic population and that these types can be categorized on a statistical basis, i.e., cluster analysis.

Additionally, the results suggest that the unitary trait approach to alcoholism is invalid and strongly indicate that there are at least three distinct personality types within the population of alcoholics.

The dynamics inferred from the 16PF factors of the three typologies identified also suggest that treatment programs which attempt to apply the same treatment modality to each client labeled "alcoholic" are indeed over simplistic, if not futile. For example, it would be rather erroneous to treat an aggressive neurotic the same as an inhibited neurotic. It is suggested that treatment programs utilizing a differential treatment approach to alcoholism may well be more realistic and effective in dealing with the phenomenon of alcoholism.

It should be noted, however, that a differential treatment approach cannot be determined without a differential model for the diagnosis of alcoholism. For a comprehensive diagnosis one would need to consider the domain of behaviors both specific and non-specific to alcohol use or drinking patterns.

The authors are currently developing a comprehensive differential model for diagnosis based on the client's drinking symptoms, styles, and benefits, various dimensions of his self-concept, perceived reinforcement, as well as a clinical assessment of personality dimensions.

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