Discriminating between rejectors, premature terminators, short-term successes, and long-term continuers using 16 PF scores

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DISCRIMINATING BETWEEN REJECTORS, PREMATURE TERMINATORS, SHORT-TERM SUCCESSES, AND LONG-TERM CONTINUERS USING 16 PF SCORES[1]

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ABSTRACT

A multiple discriminant function analysis was performed to determine what, if any, personality differences can be identified for clients who refuse counseling, terminate prematurely, attain their goals in short-term counseling, or continue for long-term counseling. The 16 PF was administered to 282 adult clients in a community mental health center and used to predict their response to counseling. Two significant canonical discriminant functions were obtained. A hit rate of 51% was obtained which is considerably better than the 33% rate than would be expected on the basis of random assignment.

INTRODUCTION

In the course of a recent review, Garfield (1986, p. 246) stated, " . . . the problem of what kinds of personal attributes of clients are related to outcome in psychotherapy is clearly a complex one that does not appear readily answerable by the kinds of research data currently available." Garfield's (1986) formulations provide some helpful insights about procedures that might be used to improve upon this state of affairs. One of his suggestions involved the need to distinguish between clients who voluntarily seek psychotherapy, those who are referred for psychotherapy, those who are selected for psychotherapy, and those who refuse psychotherapy (Garfield, 1986, p. 214).

The distinctions which Garfield (1986, p. 219) proposes between premature terminators/dropouts and rejectors is especially important because it can be useful in clearing up some of the confusion in the research. According to Garfield, a premature terminator/dropout, " . . . is one who has been accepted for psychotherapy, who actually has at least one session of therapy, and who discontinues treatment on his or her own initiative by failing to come for any future arranged visits with the therapist" (p. 219). Since "acceptance for psychotherapy" implies some type of intake procedure, it seems safe to assume that Garfield (1986) does not consider the intake interview as a therapy session. Thus, an individual who

shows up for an intake interview but does not return for at least one counseling/psychotherapy session would not be considered a premature terminator/dropout. Instead, he or she would be treated as a rejector which Garfield (1986, p. 219) described as follows: "Individuals who never show up for their first appointment would be viewed as rejectors of therapy . . . since therapy has not yet been instituted." This distinction has a great deal of intrinsic value, and, if consistently applied, should provide the basis for a more refined approach for describing clients' responses to counseling/psychotherapy.

Several studies are available to document the number of clients who reject counseling/psychotherapy after the intake interview, but, as noted by Garfield (1986, p. 216), "We still do not have a completely adequate explanation for this phenomenon." Using a large sample, a recent study by Phillips and Fagan (1982) indicated that almost half (49%) of the clients in a university counseling center did not come for their first therapy appointment. The results of a study involving a large sample of clients from several community treatment centers showed a 41% refusal rate (Sue, McKinney, & Allen, 1976). The results of three earlier studies with smaller sample indicate a refusal rate of 30-40% (Garfield & Kurz, 1952; Rosenthal & Frank, 1958; Weiss & Schaie, 1958). The findings from these studies are illustrative of the extent to which clients reject counseling/psychotherapy.

Garfield's (1986) distinction between rejectors and premature terminators is compelling since there is reason to believe that different processes are involved for these two groups. Rejectors eliminate counseling/psychotherapy without actually trying that treatment option whereas premature terminators actually try counseling/psychotherapy before deciding that they do not view it as an appropriate treatment strategy for them. One of the more obvious implications of Garfield's distinction between premature terminators and rejectors is that the dynamics involved in clients' negative decisions regarding counseling/psychotherapy should be studied for both groups. Another more practical advantage of Garfield's distinction is that it highlights the fact that interventions designed to reduce rejection must be implemented at the time of the intake interview. In contrast, interventions designed to reduce premature termination should probably be directed toward the dynamics involved in the first, second, and third interviews.

A great deal of research on premature termination is now available but the dynamic processes involved in the decision are not well understood. However there is general consensus that a high proportion of adult outpatient clients terminate prematurely (see Garfield, 1986, pp. 217-232). For example, Kahn and Heiman (1978) found that 75% of the clients in their low socioeconomic status sample came for only one counseling interview. In their study of three urban mental health centers, Fiester and Rudestam (1975) found premature termination rates ranging from 37% to 45%. These studies are illustrative of the extent to which premature termination can be a problem in adult outpatient facilities.

A great deal of research and clinical folklore is available about clients who are most likely to benefit from brief counseling/psychotherapy (see Koss & Butcher, 1986). However, the research findings from brief counseling/psychotherapy and time-limited counseling are not necessarily applicable to clients who attain their goals quickly in response to regular counseling. Garfield's (1986, p. 217) observation that the median length of treatment for adult outpatient facilities clusters

"around 6 interviews" provides a convenient reference point for the demarcation line between short-term counseling and long-term continuance in counseling. A wide range of criteria have been proposed for distinguishing between long-term and short-term counseling but none of them are generally accepted. The distinction proposed above has the advantage of being anchored in an empirical data point.

Thus far personality tests have not been effective in predicting clients' response to counseling/psychotherapy. The Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway & McKinley, 1967) has been widely used in such endeavors, but, as noted by Garfield (1986, p. 225), "Generally, investigations utilizing the MMPI, or scales derived therefrom, have not reported any consistent results with regard to continuance in psychotherapy." Other measures of psychopathology such as the Millon Clinical Multiaxial Inventory (MCMI) (Millon, 1983) or the Clinical Analysis Questionnaire (CAQ) (Krug, Cattell, & IPAT Staff, 1980) might have potential value for the prediction of response to counseling/psychotherapy but further work with scales derived from the MMPI seems questionable at this point in time. Given this state of affairs an alternative approach seems warranted. The Sixteen Personality Factor Questionnaire (16 PF) (Cattell, Eber, & Tatsuoka, 1970) has considerable potential since it provides objective measures of the basic dimensions of normal personality development and is supported by an extensive array of validity data. Another advantage of the 16 PF is that it was carefully developed on the basis of psychological theory rather than constructed on an ad hoc basis (Cattell, 1986).

Consequently, the present study was designed to determine the extent to which the 16 PF can be used to predict clients' response to counseling/psychotherapy and identify personality differences for clients who reject counseling, terminate prematurely, attain their goals in the course of short-term counseling, and continue on for long-term counseling.

METHOD

SAMPLE

The sample for the present study consisted of those clients who were assigned to the Adult Outpatient Department of a comprehensive community mental health center for a four month time period extending from April 15,1985 through August 15,1985. A total of 307 clients were assigned to the department during this time period but 25 clients either declined to participate or were excluded from the study because they were unable to understand the directions for the 16 PF because of mental retardation and/or severe psychotic reactions. Thus, the final sample consisted of 282 clients (307-25) which included 111 men and 171 women. The racial/ethnic breakdown consisted of 206 whites and 76 nonwhites. The mean age for the sample was 34 years with an age range extending from 18 through 78 years. The DSM-III diagnoses for this sample are summarized in an earlier paper by Williams, Wallbrown, and Reuter (1990) which also provides a comparison of the 16 PF scores for the present sample with these for the standardization sample and a sample of private practice clients.

PROCEDURE

Form A of the 16 PF was administered to participants at the end of the intake interview when a tentative decision was made about assignment to the Adult Outpatient Department by the intake therapist and the director of the Intake and Emergency Department. For purposes of the present study, the first subgroup of clients, refusers, was comprised of those clients who did not return for counseling/psychotherapy after the intake interview. This group included 40 clients who refused counseling when contacted by telephone by the assigned therapist, scheduled an appointment but failed or canceled three successive appointments scheduled by the assigned therapist, or failed to respond to letters requesting that they contact the agency for an appointment (in the case of clients without telephones). The clients in this group met Garfield's (1986, p. 216) criterion for rejectors since they failed to show for their first counseling/therapy appointment.

The second group consisted of 105 clients who terminated prematurely during the first 7 counseling/therapy sessions, i.e., those who have had, ". . . at least one session of therapy, and who discontinues treatment on his or her own initiative by failing to come for any future arranged visits with the therapist" (Garfield, 1986, p. 219). Through use of Garfield's (1986) criteria it was possible to achieve a clear separation between the premature terminators in this group and the rejectors included in the previous group.

The third group consisted of the 23 clients who attained their counseling goals within 7 sessions. For this short-term success group, the decision to terminate counseling/psychotherapy involved mutual agreement between the client and therapist that the treatment goals had been attained and that the development of further treatment goals was not necessary. The policy of the participating agency requires that the individual client treatment plan contain a statement of treatment goals for the client which are developed on the basis of mutual agreement between the therapist and client. The fourth group (long-term continuers) consisted of the 114 clients who did not attain all of their treatment goals by the end of the seventh session and decided to continue on for additional counseling/psychotherapy.

RESULTS AND DISCUSSION

The results of the forward stepwise discriminant analysis with 16 PF primaries as predictors resulted in the selection of several variables. The results of this analysis are summarized in Table 1. Thirteen predictors (independent variables) were selected in the course of this analysis. This included the Faking Good and Faking Bad scales as well as eleven regular 16 PF primaries. Examination of the sequential decreases in Wilk's lambda (λ) in Table 1 suggests that each of the selected variables made a small contribution to improving discrimination among the four groups of counselees.

The means (Ms) and standard deviations (SDs) for the four different response groups are included in Table 2 along with the means and standard deviation for the total group. These data are potentially useful because they show how the total sample and individual subgroups actually scored on the 16 PF primaries and the two validity scales. The mean 16 PF profiles for these groups are also potentially

TABLE 1
SUMMARY OF STEPWISE DISCRIMINANT FUNCTION ANALYSIS

Variable	Step	λ	p<
M (Imaginative)	1	.95	.005
H (Venturesome)	2	.92	.001
L (Suspicious)	3	.89	.001
N (Shrewd)	4	.87	.001
B (Abstract-Thinking)	5	.86	.001
E (Dominant)	6	.84	.001
Ql (Radical)	7	.82	.001
F (Impulsivity)	8	.81	.001
I (Emotionally Sensitive)	9	.80	.001
Faking Bad	10	.79	.001
O (Guilt Prone)	11	.78	.001
Faking Good	12	.76	.001
G (Conscientious)	13	.75	.001

Function 1: eigenvalue = .15, Variance = 50.4%, R_c = .36, λ = .75, x^2 = 77.4, df = 39, p ≤ .001

Function 2: eigenvalue = .11, Variance = 35.6%, R_c = .31, λ = .87, x^2 = 38.9, df = 24, p ≤ .03

useful in case others might wish to use them in computing coefficients of profile similarity (r_p) as suggested by Cattell (1986). However, a note of precaution is in order. The nature of multiple discriminant function analysis is such that the results cannot necessarily be understood in terms of mean comparisons on individual predictor variables.

Two significant canonical discriminant functions were determined in the course of the analysis. The summary statistics for these two functions are reported at the bottom of Table 1. The λ for the first function is .75 (x^2 = 77.5, df = 39, p < .001) which indicates that the centroids for the four groups shown in Table 3 differ significantly. The magnitude of these mean differences on this canonical function is evident from inspection of the centroids in Table 3. Premature terminators (.43) scores highest on this function whereas those in the successful short-term counseling group scored lowest (-.58). The centroid for the rejectors was -.07 and the centroid for the long-term counseling group was -.25. Based on these means (centroids) for the first canonical discriminant function, one would suspect that this function is most effective in differentiating between premature termina-

TABLE 2
MEANS AND STANDARD DEVIATIONS BY GROUP

Scale	Group 1 n= 40 Rejectors		Group 2 n= 105 Premature Terminators		Group 3 n= 23 Short-Term Successes		Group 4 n= 114 Long-Term Continuers		All Groups n= 282	
	M	SD	M	SD	M	SD	M	SD	M	SD
A: (Reserved vs. Outgoing)	5.18	1.99	5.11	1.83	5.43	2.41	5.00	1.78	5.10	1.88
B: (Concrete vs. Abstract Thinking)	5.05	1.24	5.52	1.77	5.35	1.61	5.27	1.78	5.52	1.70
C: (Weak vs. Strong Ego)	4.60	1.89	4.57	1.94	5.17	1.90	4.19	1.73	4.47	1.86
E: (Submissive vs. Dominant)	5.58	1.93	5.43	2.06	5.61	2.15	5.43	1.79	5.46	1.94
F: (Sober vs. Impulsiveness)	5.33	1.97	5.30	2.13	5.70	2.42	5.09	2.22	5.25	2.16
G: (Expedient vs. Conscientious)	5.10	1.92	5.43	2.13	5.04	2.34	5.01	1.87	5.18	2.02
H: (Shy vs. Venturesome)	5.10	2.49	5.54	2.18	4.96	2.33	4.61	2.07	5.05	2.22
I: (Tough-minded vs. Emotionally Sensitive)	6.40	1.41	6.15	1.74	6.30	1.58	5.89	1.64	6.09	1.64
L: (Trusting vs. Suspicious)	6.70	1.81	6.94	1.82	5.48	1.93	6.75	1.91	6.71	1.89
M: (Practical vs. Imaginative)	4.18	1.53	4.39	1.95	5.70	1.69	4.25	1.75	4.41	1.83
N: (Forthright vs. Astute)	5.33	1.70	5.86	2.00	5.22	1.86	6.20	2.04	5.89	1.98
O: (Secure vs. Guilt Prone)	6.65	2.06	6.77	1.96	6.57	1.78	7.11	1.77	6.88	1.89
Q1: (Conservative vs. Radical)	5.50	1.68	5.99	1.90	5.22	1.91	5.69	1.89	5.74	1.87
Q2: (Group-Dependent vs. Self-Sufficient)	5.98	2.12	6.27	1.82	6.44	1.88	6.57	1.95	6.36	1.92
Q3: (Low vs. High Ability to Bind Anxiety)	5.15	1.96	5.30	1.78	5.52	2.25	5.00	1.77	5.18	1.84
Q4: (Low vs. High Free-Floating Anxiety)	6.83	2.09	6.91	1.92	6.35	1.53	7.13	1.93	6.94	1.92
Faking Good	4.80	1.64	4.93	1.96	5.39	2.33	5.02	1.79	4.99	1.88
Faking Bad	6.33	2.18	6.77	2.03	5.78	2.81	6.59	2.20	6.55	2.20

tors and those clients who attain their goals as a result of shortterm counseling. Mean differences are evident when the centroids for all four groups are considered together but the magnitude of the other mean differences is not nearly as great as it is in the case of the premature terminators and short-term successes.

This first canonical discriminant function accounts for 50.4% of the between groups variance and has an eigenvalue of .15. The eigenvalue indicates the ratio of between to within groups sums of squares so a larger eigenvalue means a stronger function. In fact, the canonical discriminant function is computed so as to maximize the ratio of between groups to within group variability, i.e., obtain the largest possible eigenvalue. The canonical correlation coefficient (Rc) of .36 indicates the degree of relationship between scores on the discriminant function and group membership. The λ of .75 reported above shows the percentage of the variance in the discriminant scores which is not attributable to group membership. Thus, 25% of the variance in the discriminant scores is explained by function 1 and 75% of their variance remains unexplained by this function. All told, these statistics suggest that function 1 is only moderately successful in differentiating between the four groups even though one can be highly confident that it represents systematic group differences on the predictor variables.

TABLE 3
CENTROIDS FOR FOUR GROUPS

Group	Function 1	Function 2
Rejectors (n = 40)	-.07	-.60
Premature Terminators (n = 105)	.43	.01
Short-Term Successes (n = 23)	-.58	-.45
Long-Term Continuers (n = 114)	-.25	.29

The second canonical discriminant function shown at the bottom of Table 1 accounts for 35.6% of the between groups variance and has a λ of .87 ($\chi^2 = 38.9$, df = 24, $p < .03$) thus indicating the presence of significant differences between the means (centroids) for the four groups on this function. The magnitude of this λ indicates that 13% of the variance in the discriminant scores for function 2 is explained by group membership in contrast with 87% of the variance which remains unexplained. As noted earlier, the eigenvalue of .11 shows the ratio of the between to within groups sums of squares and, in this case, suggests a function of modest strength. The Rc of .31 shows the degree of association between scores on function 2 and group membership. The magnitude of this Rc also suggests that although this function is statistically significant, the strength of its relationship with group membership is relatively modest.

Examination of the group means (centroids) for the four groups on function 2 provides some insights as to how this function contributes to differentiating between the four groups. The centroid for the longterm counseling group is .29 in comparison with much smaller centroids for the rejectors (-.60) and the successful short-term counseling group (-.45). The centroid for premature terminators is .01 which falls closer to the centroid for the long-term counseling group than the centroids for rejectors and premature terminators. The relative magnitude of these mean differences suggests that function 2 should be most effective in discriminating between the long-term counseling group versus both the rejector group and the short-term success group.

It is worth mentioning that a third canonical function accounting for the remaining 14% of the between group variance was also obtained in the analysis. This function is not reported since it was neither significant at the .05 level nor accounted for much of the between group variance.

Several alternative approaches are available for use in describing and interpreting discriminant functions. As noted by Cooley and Lohnes, (1971) "The discriminant model may be interpreted as a special type of factor analysis that extracts orthogonal factors of the measurement battery for the specific task of capitalizing upon differences among criterion groups." (pp. 243-244). Thus, the task of interpreting discriminant functions is analogous to the interpretation of factors obtained through regular principal factor analysis even though there are certain differences between these two types of methodology. One approach is to interpret the standardized canonical discriminant coefficients reported in Table 4. A second approach is to interpret the rotated standardized canonical discriminant coefficients. The potential advantage of these two approaches is that the relative magnitude of the squared standardized coefficients can be taken as an indication of their contribution to the function if the predictor variables are not correlated. A third approach is to interpret the structure coefficients shown in Table 4. The structure coefficients are obtained by computing the correlations between the predictor variables and the discriminant function within each group and then pooling these within groups correlations. The fourth approach consists of simply computing the correlations between scores on the discriminant function and the predictors for all subjects taken together.

The most appropriate approach for the present study probably consists of interpreting the structure coefficients because there is a moderate degree of colinearity among the 16 PF primaries. Both the structure coefficients and the standardized canonical discriminant coefficients are reported in Table 4. The discrepancies between these two sets of coefficients are quite pronounced in some cases. Consequently, it would be highly questionable to use these standardized canonical discriminant coefficients to make inferences about the relative contribution of the predictor variables. It is also worth mentioning that it probably would not be wise to use the rotated standardized canonical discriminant coefficients for interpreting 16 PF primaries since that test was not developed in accordance with the assumptions involved in making Varimax rotations. Finally, use of the structure coefficients has some theoretical advantages over the use of straight zero-order correlations (r's) even though both statistics often provide similar information.

TABLE 4
STANDARDIZED CANONICAL DISCRIMINANT COEFFICIENTS AND STRUCTURE COEFFICIENTS

Variable	Standardized Canonical Discriminant Function Coefficients		Structure Coefficients	
	Function 1	Function 2	Function 1	Function 2
B (Concrete vs. Abstract Thinking)	.23	.52	.05	.37
E (Submissive vs. Dominant)	-.46	.02	-.06	-.07
F (Sober vs. Impulsive)	-.40	.06	-.08	-.19
G (Expedient vs. Conscientious)	.13	-.29	.18	-.14
H (Shy vs. Bold)	.83	-.33	.29	-.40
I (Tough-Minded vs. Emotionally Sensitive)	.05	-.53	-.02	-.35
L (Trusting vs. Suspicious)	.46	.20	.49	.15
M (Practical vs. Imaginative)	-.41	-.08	-.38	-.22
N (Naive vs. Shrewd)	.10	.50	.07	.47
O (Secure vs. Guilt-Prone)	-.27	.47	.02	.33
Q1 (Conservative vs. Radical)	.45	.06	.31	.05
Faking Bad	.36	.00	.30	.13
Faking Good	-.21	.54	-.15	.05

The unstandardized canonical discriminant coefficients are shown in Table 5 for use by other researchers who might be interested in cross-validating the results of the present study with different samples of adult outpatient clients. These unstandardized coefficients can be applied directly to sten scores from the 16 PF to obtain discriminant scores on the two functions. The classification functions reported in Table 6 are included for the benefit of counselors and psychologists in applied settings who might wish to try crossvalidating the findings from the present study in a less formal manner with their clients. Use of the classification coefficients is relatively straightforward and involves relatively simple computations. One needs only to multiply the client's 16 PF sten scores by the coefficients and perform the necessary addition to obtain a score for each of the four functions. The client would then be assigned to the group for which he or she obtained the highest score. A hit rate could then be calculated based on the follow-up of the client's response to counseling.

Description of Function 1

Using the structure coefficients, high scores on function 1 can be operationally defined in terms of L+ (Suspiciousness), Ql+ (Rebelliousness), H+ (Boldness),

Faking Bad, and M- (Practicality). The importance of L (Suspiciousness) in this function is suggested by the fact that its structure coefficient is considerably higher than the coefficient for any of the other primaries. According to Cattell, Eber, and Tatsuoka (1970, p. 96) persons scoring high on L tend to be jealous, dogmatic, suspicious, tyrannical, irritable, intolerant of mistakes, and likely to dwell on frustrations. These authors also note that projection, inner tension, and social insecurity are salient aspects of a high scores on this factor (pp. 96-97). Karson and O'Dell (1976, p. 57) suggest that anxious insecurity is the hallmark of this dimension and go on to describe a high scorer as follows: " . . . insists on getting his point across, feels that people are talking about him behind his back, cannot endure human frailties, is oppositional, likely to fight back, antagonistic and quick to take offense . . " (pp. 56-57). These authors also note that, ". . . someone with a high score on L is probably going to be difficult to get along with ...." (Karson & O'Dell, 1976, p. 57). These formulations provide a good idea of what is involved in the L+ element of function 1. The positive structure coefficient for Ql (Radical/ Rebellious) suggests some further ideas about what might be involved in function 1. A high score on Ql suggests analytic thinking, disdain for custom and tradition, a willingness to experiment with new ideas and disregard for authority figures (Karson & O'Dell, 1976, pp. 66-67). Another way to describe Ql+ is to note that it involves a desire to dispense with social customs and experiment with radical new solutions for societal problems. A high score on Ql suggests conflicts with authority figures and difficulties functioning in a subordinate role.

TABLE 5
UNSTANDARDIZED CANONICAL DISCRIMINANT COEFFICIENTS

Variable	Function Coefficients	
	Function 1	Function 2
B (Abstract Thinking)	.05	.35
E (Dominant)	-.28	-.11
F (Impulsive)	-.14	.00
G (Conscientious)	.17	-.07
H (Bold)	.46	.03
I (Emotionally Sensitive)	.07	-.34
L (Suspicious)	.11	.12
M (Imaginative)	.01	.04
N (Shrewd)	.00	.29
O (Guilt Prone)	-.17	.22
Q1 (Radical)	.24	.13
Faking Bad	.19	.09
Faking Good	-.19	.25
Constant	-2.99	-5.80

TABLE 6
CLASSIFICATION FUNCTIONS FOR THE FOUR GROUPS

Variable	Classification Functions			
	Rejectors (n= 40)	Premature Terminators (n= 105)	Short-Term Successes (n= 23)	Long-Term Continuers (n= 114)
B (Abstract Thinking)	1.95	2.19	1.97	2.25
E (Dominant)	.51	.30	.60	.46
F (Impulsive)	.92	.87	1.14	.96
G (Conscientious)	.99	1.05	1.01	.91
H (Bold)	.59	.84	.37	.53
I (Tender-Minded)	1.42	1.23	1.21	1.08
L (Suspicious)	1.64	1.72	1.31	1.68
M (Imaginative)	1.44	1.53	1.94	1.53
N (Shrewd)	2.32	2.50	2.41	2.58
O (Guilt-Prone)	2.30	2.37	2.55	2.55
Q1 (Radical)	1.64	1.84	1.51	1.71
Faking Bad	2.33	2.40	2.51	2.59
Faking Good	1.17	1.33	1.12	1.22
Constant	-55.45	-59.74	-58.13	-59.16

There are relatively high structure coefficients for two other 16 PF primaries and one validity scale. The positive coefficient for H (Boldness) suggests that a high score on function 1 involves being adventuresome, thick-skinned, and willing to take risks. The negative coefficient for M (Imagination) is indicative of a concern for practical, day-to-day, reality-based concerns as opposed to enthusiasm for art, literature, and other cultural pursuits. Another way of understanding M- is to note that it suggests a prosaic approach to life which emphasizes practicality rather than fantasy and creative imagination. Finally,the positive coefficient for Faking Bad suggests that a high score on function 1 involves a tendency for clients to present themselves in an unfavorable light and/or exaggerate their problems and concerns.

The opposite interpretation is necessary for persons who score low on function 1. At an operational level, this would be evident in the form of the following pattern of scores: M+ (Imaginative), L- (Trusting), Ql- (Conservative), H- (Shy), and low Faking Bad. In brief, persons with low scores on this function could be described as more imaginative, having a richer fantasy life, being relatively shy, tending to trust others, and making no attempts to exaggerate their problems and concerns. It is worth noting the fact that premature terminators are the group with

the highest centroid (mean) on this function which suggests a tendancy toward anxious insecurity, projection, suspiciousness, hostility toward authority and tradition, difficulties in interpersonal relations, lack of creative imagination, and a certain degree of boldness in expressing the hostility that is implicit in these attributes. Such a pattern of personality development is congruent with the clinical folklore regarding premature terminators.

As noted earlier, clients who attained their goals in short-term counseling scored lowest on this function. This finding is congruent with the clinical folklore regarding the attributes of persons who respond positively to counseling/psychotherapy. Specifically, those scoring low on this function can be described as imaginative, creative, conservative, shy, and trusting.

Description of Function 2

At an operational level, function 2 shows noteworthy positive structure coefficients for N (Shrewd), B (Abstract Thinking), and O (Guilt-Prone) and negative coefficients for H (Boldness), I (Emotionally Sensitive), and M (Creative Imagination). The largest coefficient is evident for N (.47) which suggests that social awareness, social polish, self-insight, lack of sentimentality, shrewd calculation, sophistication, and social poise are important aspects of this function. Cattell, Eber and Tatsuoka (1970) note that a high score on N indicates a person who is, ". . . ingenious, sharp at clinical diagnosis, flexible in viewpoint, inclined to 'study the angles', alert to manners, to social obligations and to the social reactions of others." (pp. 99-100). At another point, high scores are described as follows: "Their approach to people and problems is usually perceptive, hardheaded, and efficient — an unsentimental approach to situations, an approach akin to cynicism." (IPAT Staff, 1986, p. 29). The description of N+ offered by Karson & O'Dell (1976) states that it measures, ". . . the socially important personality trait of poise or sophistication, or, as it is called on the 16 PF profile sheets, 'shrewd, calculating, and worldly' " (p. 62).

The structure coefficient for H (Boldness) is -.40 which suggests that persons with low scores on this dimension ". . . tend to be shy, withdrawing, cautious, retiring 'wallflowers' . . . usually tend to have inferiority feelings and tend to be slow and impeded in speech and in expressing themselves." (IPAT Staff, 1986, p. 27). In the 16 PF Handbook, Cattell, Eber, and Tatsuoka (1970, p. 91) list "shy, timid, restrained, (and) threat sensitive" as the salient characteristics of individuals with low (H-) scores on this dimension. Karson and O'Dell (1976, p. 51) imply that a reluctance to engage in risk-taking is an important aspect of low scores on this factor.

The positive structure coefficients for B (Abstract Thinking) and O (Guilt-Proneness) indicate that these two dimensions are also noteworthy aspects of function 2. Interpretation of the structure coefficient for B (.37) is rather straightforward and suggests that high scores on function 2 are associated with high abstract thinking, academic aptitude, general intelligence, insightfulness, adaptability, and fast learning. The positive structure coefficient for O (.33) suggests that guilt proneness, worry, depression, brooding, apprehension, anxiety, insecurity, and phobic symptoms are important facets of function 2. In their discussion of the clinical use of the 16 PF, Karson and O'Dell (1976, p. 64) note that obses-

sional worrying is an important facet of O+ scores. They also state that O is one of the three most important 16 PF scales for clinical work. Their observation that, ". . . the guilt behind O+ is very difficult to extinguish even after intensive individual or group psychotherapy" (Karson & O'Dell, 1976, p. 65) is especially helpful in understanding the nature of function 2.

The negative structure coefficients for I (Tender-Minded) and M (Imaginative) not only indicate that low scores on these dimensions are associated with higher scores on function 2, but also suggest some further insights about what may be involved in this function. Specifically, the structure coefficient for I is -.35 and the structure coefficient for M is -.22. Low scorers on the I factor can be described as self-reliant, toughminded, focused, unsentimental, practical, unaffected by fancies, hard and rejecting of illusions. Low scores on M suggest a behavior pattern including practicality, good reality contact, conventionality, dependability, good judgement, task orientation and a lack of creative imagination/fantasy.

Referring back to Table 3 it is important to recall that long-term continuers were the group with the highest scores (centroid = .29) on this function. Thus, it would appear that persons with the following pattern of 16 PF primaries can be expected to score highest on this function and to continue longer in counseling: N+, B+, O+, H~ , and M-. In contrast, rejectors (centroid = -.60) and short-term successes (centroid = -.45) scored considerably lower on this function. One would tend to anticipate the following score pattern for both groups since their means (-.60 vs. -.45) do not differ substantially: N- (Naive), B(Concrete Thought), O- (Self-Assured), H+ (Bold), I+ (Tender-Minded), and M+ (Imaginative). In brief, persons scoring low on this function can be described as socially clumsy, unpretentious, and forthright (N-); adventurous, friendly, socially bold, and spontaneous (H+); tender-minded, emotionally sensitive, dependent, and theatrical (I+); self-assured, complacent, secure, and resilient (O-); more concrete in thought (B-); imaginative, unconventional, absent-minded, and inclined to creative fantasy (M+).

Accuracy of Prediction

The results of the statistical tests reported earlier indicate that the two discriminant functions reflect group differences which cannot be attributed to random errors. However, these statistics do not show how effective these two discriminant functions are in predicting group membership. The hit rates for the four groups summarized in Table 7 show how well group membership can be predicted by the discriminant functions. The overall hit rate for the four groups is 51%. This hit rate is not particularly impressive but it is considerably better than the hit rate of 33% that one would expect to obtain based on random assignment. The hit rates for rejectors and short-term successes are about what one would expect on the basis of chance alone but the hit rates for premature terminators (54.3%) and long-term continuers (68.4%) are considerably better than one could expect to obtain on the basis of random assignment (37.2% for premature terminators and 40.4% for long-term continuers).

The findings from the present study, especially the overall hit rate of 51% suggest the need for further research designed to refine the prediction of clients' responses to counseling. Alternative assessment procedures such as the CAQ and

TABLE 7
HIT RATES USING DISCRIMINANT FUNCTIONS TO PREDICT RESPONSE TO COUNSELING

Actual Group Membership	Predicted Group Membership			
	Rejectors	Premature Terminators	Short-Term Successes	Long-Term Continuers
Rejectors (n= 40)	5 (12.5%)	18 (45.0%)	1 (2.5%)	16 (40.0%)
Premature Terminators (n= 105)	3 (2.9%)	57 (54.3%)	3 (2.9%)	42 (40.0%)
Short-Term Successes (n= 23)	0 (0.%)	6 (26.1%)	4 (17.4%)	13 (56.5%)
Long-Term Continuers (n= 114)	2 (1.8%)	33 (28.9%)	1 (.9%)	78 (68.4%)

Hit Rate = 51%

MCMI should be considered. This is especially true if one hopes to identify the potential rejectors who are unlikely to return for treatment after the intake interview. The hit rate for this group is so low that the classification equations obtained in the present study would not be effective in identifying potential rejectors. The same situation holds true for the short-term successes. The hit rate for this group is not sufficient to be of practical value. In contrast, the hit rate for long-term continuers and premature terminators represent considerable improvement over what one would expect on the basis of chance alone. If the present findings can be cross-validated through further research, then the classification equations for these two groups should have value for predicting clients' response to counseling.

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Footnotes

1. This study is based on a doctoral dissertation conducted by the first author at Kent State University under the direction of the second author.

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