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The Relationship Between
Selected Personality Variables
And Compulsive Gamblers in Treatment

BY

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B.A., University of Central Florida, 1984

THESIS

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THE RELATIONSHIP BETWEEN SELECTED PERSONALITY VARIABLES

The empirical contributions of researchers on the personality characteristics associated with the identification and treatment of compulsive gambling have been largely piecemeal. As an active four year veteran of the Gamblers Anonymous program, the author has come to recognize that the vast majority of members comprising Gamblers Anonymous are persons typically not well versed in experimental design or research methodology techniques. Compounding this statement is the fact that it was not until the early 1980's that compulsive gambling (or synonymously stated as pathological gambling) became recognized by the American Psychiatric Association as a mental disorder with explicit diagnostic signs and symptoms. As a result of these factors and additional issues presented below, the scientific research and conclusions drawn in the area of compulsive gambling have been limited and shallow.

According to Custer, Glen and Burns (1975), the most widely accepted definition of compulsive gambling suggests that "compulsive gambling is a progressive behavior disorder in which an individual has a psychologically uncontrollable preoccupation and urge to gamble. This results in excessive gambling, the outcome of which is the loss of time and money to the point where it comprises, disrupts, or destroys the

personal life, the family relationships or the vocational pursuits" (p.3). A data based estimate prepared by the National Commission on Gambling in 1976 projected 1.1 million estimated compulsive gamblers and 3.3 million potential compulsive gamblers. In 1981, the study was deemed outdated and Nadler and Bosley (1981) argued the problem had become much more acute.

While the American Psychiatric Association recognizes compulsive gambling as a mental disorder with explicit diagnostic signs and symptoms, it is unfortunate that these proposed signs and symptoms have yet to be established to contain relationships with specific personality characteristics. In fact, Brown (1984) argues a virtual absence of hard data of any kind on compulsive gamblers, persons in Gamblers Anonymous and personality characteristics. Brown attributes this absence of data to the basic structure of the Gamblers Anonymous (GA) program (similar to Alcoholics Anonymous) in relation to the following concerns:

- 1) The principle of anonymity in the GA program means that no actual case histories are kept on members and their treatment success.
- 2) The only form of information in GA is the self report of the individual gambler and thus any measures used are based on completely subjective and perhaps arbitrary data.

- 3) Membership of GA is by self selection and thus in itself constitutes a sample bias.
- 4) It is difficult to assess the validity or reliability of questionnaires because the membership of any one group is always rapidly changing.
- 5) The criterion of success in the GA program (total abstinence from gambling) may overlook what GA has accomplished for the person and his life.

Among the few empirically oriented studies to date, Moravec and Munley (1983) issued compulsive gamblers the Wechsler Adult Intelligence Scale (WAIS), the Minnesota-Multiphasic Personality Inventory (MMPI), the Edwards Personal Preference Scale (EPPS) and the Personality Orientation Inventory (POI) and found compulsive gamblers to be of bright normal intelligence with elevated scores on the depression and psychopathic deviate scales. These findings are limited by the small sample size (N of 23) and the lack of a control group. The results however are consistent with similar earlier studies (Lowenfeld, 1979; Glen, 1979; and Bolen, Caldwell and Boyd 1975). However, it is noteworthy to point out that none of these studies focus on potential personality characteristics specifically unique to compulsive gamblers, ones which could be more recognizable and susceptible to treatment.

Bolen, Caldwell and Boyd (1975) argue that psychopathic deviate is a personality trait generally found in compulsive gamblers. They suggest that the personality style of the compulsive gambler is typically quite different and sometimes opposite to the personality style of individuals with other obsessive-compulsive difficulties. In fact, they cite the personality style of the pathological gambler as impulsive, unreliable, emotionally explosive and completely irresponsible. The method and conclusions of their study were based on a survey of male compulsive gamblers along with their wives who were suffering from other difficulties and were involved in group therapy. The test measures used were the MMPI and the Shipley-Hartford Intelligence Tests. These findings are limited primarily due to the sample size (N of 10 men and 10 women).

In an excellent and perhaps the best controlled study to date, Roston (1965) compared MMPI profiles of 30 male members of Gamblers Anonymous with 30 psychiatric patients and 30 control subjects. The results indicated significant mean differences on the MMPI personality variables (psychopathic deviate score being the most highly elevated) between compulsive gamblers when compared against mean scores of psychiatric patients and control subjects. These findings suggest a distinctive mean MMPI profile for compulsive gamblers and consistent differences between

compulsive gamblers and both psychiatric patients and control persons.

Yet while the Roston study was well controlled, a review and critique conducted by Knapp and Lech (1981) further states the lack of controlled outcome studies and also argues that general purpose inventories (MMPI, 16PF etc.) are not capable of providing useful information concerning personality characteristics and the prediction of compulsive gamblers. They suggest inventories specific to compulsive gambling. They propose that the 12 recovery steps of the Gamblers Anonymous Recovery Program are as close to a specific treatment program as anything currently available. Furthermore, these steps appear specific enough to stand as control comparison to alternate group and individual treatment plans.

Although less empirical in nature, Custer and Custer (1978) concluded that Gamblers Anonymous is generally recognized as the single most effective treatment of compulsive gambling. In their study, a questionnaire was completed by 150 members of Gamblers Anonymous at the First International Conference of Gamblers Anonymous in August of 1977. Their survey data revealed that 90% of the subjects reported being highly competitive, 94% reported ego building activity, and 92% reported a feeling of needing to be a big shot. The ego strength or ego building variable has

similarly been confirmed in an undated paper by Taber, Russo and Adkins.

Recognizing the concerns of the Brown (1984) paper, and taking into account the following concerns: the lack of empirical data to date, the lack of relevance of this data, coupled with the suggestion provided by Knapp and Lech (1981) of utilizing the GA Recovery Program and the 12 steps of recovery of the GA program, the author found it logical to utilize these suggested sources for control comparisons of specific personality characteristics. In fact, it is clearly stated in the GA program that compulsive gamblers are quite different than social gamblers and the rest of society. It further emphasizes that the most time consuming and difficult problem (objective) the compulsive gambler will face is that of bringing about a progressive character change, a problem which should be worked on immediately and continued throughout one's life.

In reviewing the 12 steps of recovery of the GA Recovery Program (Appendix 5), and performing a conceptual cluster analysis, the author concluded that four distinct variables exist in which personality changes are emphasized. These variables include: Variable 1 - becoming less egocentric and ego building in nature with an emphasis on humility (steps one, four, five, seven and ten). Variable 2 - becoming less competitive (win at all costs) in succeeding at gambling and in nature (steps one, five, six,

eight and nine). Variable 3 - becoming more externally oriented by establishing a spiritual faith and by admitting a powerless lack of control over gambling (steps two, three, seven and eleven). Variable 4 - becoming more altruistic and less self centered in nature (steps eight, nine and twelve). As stated earlier, the personality changes in relation to egocentrism and competitiveness are consistent with the Custer and Custer (1978) survey identification of personality variables among compulsive gamblers.

The purpose of this study was two-phase. Phase I was to evaluate the degree of change of selected personality characteristics of compulsive gamblers with reference to their treatment effort in the Gamblers Anonymous program. Phase II was to compare the personality characteristics of compulsive gamblers and their degree of treatment effort with the personality characteristics of non-gambling control subjects. This was to be accomplished by classifying the treatment effort of the compulsive gamblers into three distinct groups consisting of substantial effort, moderate effort and minimal effort treatment groups.

The following hypotheses in regard to Phase I were proposed: Variable 1 - a negative linear relationship between an egocentrism score and degree of treatment effort. Variable 2 - a negative linear relationship between a competitiveness score and degree of treatment effort. Variable 3 - a positive linear relationship between an

external locus of control score and degree of treatment effort. Variable 4 - a positive linear relationship between an altruism score and degree of treatment effort.

The following hypotheses with regard to Phase II were proposed: 1) Significant differences evidenced between mean scores of the minimum effort treatment group and mean scores of the control group on all four personality variables. These differences yielding the minimum effort group of compulsive gamblers being more egocentric, more competitive, more internally oriented and less altruistic than the control group. 2) An absence of significant differences between mean scores of the substantial effort treatment group and mean scores of the control group on all four personality variables.

METHOD

Phase I utilized 42 male compulsive gambler subjects, persons who were recruited from various GA groups throughout the country. These subjects completed the following measures: The P scale (empathy vs. egocentrism) of the Comrey Personality Scales (Appendix 1), the Am scale (altruism) of the Omnibus Personality Inventory (Appendix 2), the Nowicki and Strickland Locus of Control Scale (Appendix 3), a self developed competitiveness questionnaire (Appendix 4), a measure of treatment effort on the 12 steps of the GA Recovery Program (Appendix 5), and additional questions on the following variables: age, current monthly attendance of GA meetings, career history attendance of GA meetings, percentage of annual income spent when gambling, degree of abstinence from gambling since entering Gamblers Anonymous, and length of time spent in the GA program (Appendix 6). Descriptions of the measures completed are provided below.

The P scale (empathy vs. egocentrism) of the Comrey Personality Scales consists of 20 items in which subjects rank statements on a scale of 1 to 7. These statements generally represent the extent to which an individual reacts to the needs and desires for himself vs. the needs and desires of others. A low score represents the egocentric

end of the low scale, hence these persons are primarily concerned with their own goals, are relatively uninterested in dedicating their lives to serving their fellow man, and are not particularly sympathetic. A high score represents the empathetic end of the scale, hence these persons tend to be sympathetic, helpful, generous, unselfish and interested in devoting their lives to the service of other people. For the purpose of interpretation, scores on this measure were inverted, consequently high scorers represented the egocentric end of the scale.

According to the Comrey Personality Scales Manual (Comrey, 1970), the Comrey Scales compare well in terms of both homogeneity and reliability to most other scales. Reliabilities based on 746 subjects range from .87 to .96 with median .93. In general the various Comrey Scales appear to be relatively independent of each other with absolute correlations ranging from 0 to .37 with median .12. The P scale itself yielded a reliability coefficient of .94.

The Am scale (altruism) of the Omnibus Personality Inventory consists of 36 true/false items. Subjects respond to questions dealing with trust, ethics and the feelings and welfare of others. Low scorers tend to view people from an impersonal distant perspective, they would prefer to use leisure time individually as opposed to doing volunteer social or public service work, and feel that people pretend to care more about one another than they really do. A high

score represents the construct of altruism, whereas these persons tend to be trusting and ethical in relations with others, are aroused by descriptions of unfortunate conditions of others and are likely to take people seriously. Because of a typographical error, item #29 of the Am scale was omitted from completion analyses hence potential scores could range from 0 to 35.

According to the Omnibus Personality Inventory Manual (Heist & Yonge, 1968), and based on 7283 subjects, the K-R 21 and split-half estimates of internal consistency range from .67 to .89 for the substantive scales and test-retest coefficients vary from .79 to .94. Intercorrelations between the Am scale and the remaining OPI scales range from 0 to .46 with a median of .19. The Am scale itself yielded an internal consistency coefficient of .74.

The Nowicki and Strickland Locus of Control Scale consists of 40 dichotomous items. Subjects respond yes or no to questions designed at measuring their perception of a connection between ones actions and its consequences. Low scorers tend to be internally oriented, believing that the events and consequences received during their life-time are shaped and controlled by their governing interaction with the environment. High scorers tend to be externally oriented, believing that many of the events and consequences received during their life-time are the result of chance, fate or other uncontrollable factors.

According to the Nowicki and Strickland Locus of Control Manual, split-half reliabilities are consistently found in the 60s with reported test-retest reliabilities ranging from .56 to .83 depending upon the time interval utilized between testing sessions. In addition, consistent evidence of both discriminate validity and construct validity are reported.

The self developed competitiveness questionnaire consists of 22 items in which subjects rank statements on a scale consisting of strongly disagree, disagree, undecided, agree or strongly agree scored as 1 to 5. These statements allegedly represent the overall competitiveness of persons and their willingness to win or succeed at all costs, regardless of the ramifications or consequences. Low scorers tend to become involved in games or events for the purposes of recreation and leisure, with a limited emphasis placed on winning. High scorers tend to be highly competitive when involved in games or events and place great emphasis on winning (perhaps at all costs) and succeeding in comparison to others. Internal consistency reports are yet to be performed and established.

The treatment effort of the 12 steps of the GA Recovery Program is measured by 12 statements (steps) where subjects indicate the amount of effort they have directed in accomplishing the proposed statements. Statement scores range from 0 to 4 with scale points of no time and effort

spent, minimal time and effort spent, moderate time and effort spent, substantial time and effort spent, and the step has been worked to capacity. Low scorers perceive that they have spent little time and effort pursuing the objectives (steps) of the GA Recovery Program. High scorers perceive that they allocated a great deal of time and effort pursuing the objectives of the GA Recovery Program. There are no empirical reports of reliability estimates of the GA Recovery Program to date.

The remaining survey measures are descriptive variables intuitively acknowledged as providing potential useful contributions. The reader is encouraged to review these variables located in Appendix 7.

Phase II utilized 19 male control subjects, persons who were recruited from various local affiliations such as Kiwanis, Elks, etc. as well as various occupations such as sales representatives, reporters, self employed retailers etc. The controls appeared equally matched with the experimental group across education level and were well matched in age (Control \bar{M} = 45.98, SD 12.8; Experimental \bar{M} = 47.05, SD 14.1). These persons completed the same scales as the compulsive gambler groups in Phase I, excluding the GA Recovery Program measure and the descriptive survey measures with the exception of the age variable. Also was the addition of a question confirming their status as a non-compulsive gambler (see item #7 of Appendix 6).

RESULTS

Phase I

Two of the four hypotheses proposed were supported. Egocentrism correlated with degree of treatment effort ($r = -.60$, $p < .001$). Therefore, those individuals who perceived themselves as putting effort forth in the Gamblers Anonymous Recovery Program tended to score lower on the egocentrism measure. Secondly, altruism correlated with degree of treatment effort ($r = .42$, $p = .003$). High scorers on the altruism measure tended to perceive themselves as placing more effort in the Gamblers Anonymous Recovery Program.

Addressing the unsupported hypotheses, locus of control was not significantly related to degree of treatment effort ($r = -.22$). Furthermore, the moderate relationship evidenced was opposite the direction predicted. Those persons who scored high on treatment effort were clearly not more likely to be externally oriented than low scorers of treatment effort. Additionally, competitiveness was not significantly related to degree of treatment effort ($r = .09$). Consequently, there was no evidence supporting the hypothesis that effort in the GA Recovery Program tends to be accompanied by a decrease in perceived competitiveness.

Phase II

In order to perform the ANOVA calculations, the effort scores of the compulsive gamblers were broken down into three categories consisting of: substantial effort, moderate effort and minimum effort. This breakdown was arrived at on a percentile basis with the top third scores comprising the substantial effort group, the middle third scores comprising the moderate effort group, and the bottom third scores comprising the minimum effort group. Sample sizes and ranges for each group are provided in Table 1.

TABLE 1

Breakdown of Effort Scores of Compulsive Gamblers into Three Groups

<u>Effort Group</u>	<u>n</u>	<u>Range of effort scores</u>
Minimum effort	13	15-26
Moderate effort	13	27-34
Substantial effort	16	36-48

Predictions for the Phase II analysis yielded mixed results. The set of hypotheses stating that significant differences would occur between mean scores of the minimum effort group and mean scores of controls were not substantiated on any of the four personality variables. That is, minimum effort persons were not established to be more egocentric, more competitive, more internally oriented or less altruistic than control counterparts.

Regarding the second set of hypotheses, three of the four predictions were supported. As proposed, there was an absence of significant differences between mean scores of the substantial effort group and mean scores of controls on altruism, locus of control and competitiveness. However, a significant mean difference was evidenced on the egocentrism variable (F probability of .0210) between the substantial effort group and the control group. In this case, the substantial effort group indicated a significantly lesser degree of egocentrism than the control group. Mean scores of all groups and variables are presented in Table 2.

TABLE 2

ANOVA Summary Table of All Groups and All Variables

<u>Group</u>	<u>Count</u>	<u>Mean Ego-</u> <u>centrism</u>	<u>SD Ego-</u> <u>centrism</u>	<u>Mean</u> <u>Altruism</u>	<u>SD</u> <u>Altruism</u>	<u>Mean</u> <u>Locus</u> <u>of</u> <u>Control</u>	<u>SD</u> <u>Locus</u> <u>of</u> <u>Control</u>	<u>Mean</u> <u>Competi-</u> <u>tiveness</u>	<u>SD</u> <u>Competi-</u> <u>tiveness</u>
Minimum Effort	13	70.23	14.37	20.67	5.25	10.77	5.17	67	8.66
Moderate Effort	13	68.23	15.97	21.33	7.63	11.15	5.41	73.85	14.16
Substan- tial effort	16	52.37	12.76	24.19	5.53	8.93	3.56	71.81	8.09
p = .0210									
Control	19	65.63	20.43	21.53	6.3	9	4.6	68.32	7.73
TOTAL	61	63.69	17.53	22.03	6.19	9.89	4.69	70.13	9.81

As Table 2 indicates, the smallest mean difference on the egocentrism variable occurs between the substantial effort group and the control group. Since this planned comparison reached statistical significance ($p=.0210$), the reader should deduce that the substantial effort group also differs significantly from the moderate effort group and the minimum effort group on the egocentrism variable.

Additional Analyses

While no other predictions were proposed, the data yielded several additional significant relationships. While degree of effort (treatment) was already established to be related to egocentrism and altruism, it was also significantly related to the following variables: current attendance (# of meetings) in GA ($r=.38$, $p=.006$), time (months) in GA ($r=.51$, $p < .001$), percentage of income spent while gambling ($r=.43$, $p=.003$), the ability to abstain from gambling since entering Gamblers Anonymous ($r=.39$, $p=.006$) and age ($r=.43$, $p=.003$).

Similar to degree of effort, the variables time in GA and age also significantly correlated with the personality variables egocentrism and altruism. Time in GA yielding a coefficient of $-.38$ ($p=.006$) with egocentrism, and a coefficient of $.27$ ($p=.039$) with altruism. Age yielding a coefficient of $-.42$ ($p=.003$) with egocentrism, and a coefficient of $.41$ ($p=.003$) with altruism. Table 3

TABLE 3

Correlations Between Personality Variables
and Additional Variables Surveyed

<u>Variable</u>	<u>Ego- centrism</u>	<u>Altruism</u>	<u>Locus of Control</u>	<u>Competi- tiveness</u>	<u>Effort</u>	<u>Age</u>	<u>(months) Time In GA</u>	<u>% of income spent when Gambling</u>	<u>(# of meetings) Current attend- ance in GA</u>	<u>(# of meetings) Career attend- ance in GA</u>	<u>Ability to abstain from gambling since entering GA</u>
<u>Ego- centrism</u>	1.0	-.71*	.40*	.30*	-.60*	-.42*	-.38*	-.17	-.29*	-.19	-.42*
<u>Altruism</u>		1.0	-.57*	-.40*	.42*	.41*	.27*	.24	.36*	.25	.34*
<u>Locus of Control</u>			1.0	.22	-.22	.00	.08	-.29*	.00	.20	-.18
<u>Competi- tiveness</u>				1.0	.09	-.07	-.11	.02	.00	.11	-.33*
<u>Effort</u>					1.0	.43*	.51*	.43*	.38*	.35*	.39*
<u>Age</u>						1.0	.65*	.05	.38*	.34*	.22
<u>Time in GA</u>							1.0	.12	.15	.18	.15
<u>% of income spent when gambling</u>								1.0	.21	.22	.30*
<u>(# of meetings) current attend- ance in GA</u>									1.0	.60*	.14
<u>(# of meetings) career attend- ance in GA</u>										1.0	.24
<u>Ability to abstain from gambling since entering GA</u>											1.0

*denotes significant at the .05 level

summarizes the relationships between personality variables and additional variables surveyed.

Initial predictions centered around the philosophy that the degree of effort put forth in the Gamblers Anonymous Recovery Program would be chiefly related to scores and variability on selected personality variables. The unsuspected relationships evidenced among age and time in GA with the personality variables egocentrism and altruism warranted alternative considerations. As a follow up to these findings, a multiple regression analysis was performed to determine the unique variability contributions of effort, age and time in GA on egocentrism and altruism. These results are presented in Table 4.

TABLE 4

Multiple Regression Analysis of Egocentrism and Altruism Using Effort, Age and Time in GA

DEPENDENT VARIABLE: Egocentrism

<u>Variable</u>	<u>r</u>	<u>Semi-partial r</u>
Effort	-.60	-.45
Age	-.42	-.15
Time in GA	-.38	.02

DEPENDENT VARIABLE: Altruism

<u>Variable</u>	<u>r</u>	<u>Semi-partial r</u>
Effort	.42	.28
Age	.41	.26
Time in GA	.27	-.08

In both cases, the reader should pay particular attention to the dramatic decline in the time in GA variable when partialled out in the multiple regression equation. This suggests that time in GA alone does not significantly contribute to the variability accounted for on the egocentrism and altruism variables.

The reader should recall from the introduction that the author had conceptualized that four distinct personality variables (changes) described the contents of the 12 steps of the GA Recovery Program. The data however, confirmed only two variables (egocentrism and altruism) being related to degree of effort in the GA Recovery Program. Additionally, as Table 3 indicated, these two variables were highly correlated with each other ($r = -.71$, $p < .001$). Therefore, the four variable hypothesis did not appear to be accurate. In an effort to shed light on these findings, subscores of effort were calculated by the summation of the scores of the particular steps hypothesized to be related to each personality variable. These subscores were then correlated with the actual personality variable scores. Results of these correlations are presented in Table 5.

TABLE 5
Correlations Between Subscores of Treatment
Effort and Personality Variable Scores

<u>Personality Variable</u>	SUBSCORE OF TREATMENT EFFORT			
	<u>Egocentrism</u> (Steps 1,4, 5,7,10)	<u>Altruism</u> (Steps 8, 9,12)	<u>Locus of Control</u> (Steps 2, 3,7,11)	<u>Competi- tiveness</u> (Steps 1, 5,6,8,9)
Egocentrism	-.56 p<.001	-.50 p<.001	-.47 p=.001	-.45 p=.002
Altruism	.31 p=.024	.29 p=.033	.46 p=.001	.26 p=.049
Locus of Control	-.22 N.S.	-.14 N.S.	-.20 N.S.	-.18 N.S.
Competitiveness	.13 N.S.	-.20 N.S.	-.03 N.S.	.12 N.S.

As Table 5 indicates, egocentrism and altruism correlate highly with all of the subscores of treatment effort. Taking into account this high degree of overlap, as well as the magnitude of the intercorrelation between egocentrism and altruism (see Table 3), it appears that one unitary variable (factor) best describes the 12 steps of the GA Recovery Program. To further substantiate this association of steps, a principle component factor analysis was performed. As the data suggested, the one factor extracted accounted for 96 percent of the cumulative variance. In essence, the 12 steps of the GA Recovery Program appear to be best described by a unitary variable

(factor), one which embodies the egocentrism and altruism variables.

DISCUSSION

The Phase I analysis demonstrated the relationship between the amount of effort put forth in the GA Recovery Program and one's perception of their degree of egocentrism and altruism. Based on this relationship, one might ask the question: what benefit is derived by the compulsive gambler when he successfully changes a portion of his personality? One answer lies in the significant relationship between effort in the GA Recovery Program and one's ability to abstain from gambling since entering GA (see Table 3). Excessive gambling (or the results of it) is what brings most compulsive gamblers to recognize their need for treatment. Their ability to abstain from gambling (and its consequences) is proportional to the degree of effort (or the perceived amount of effort) put forth in the Gamblers Anonymous Recovery Program.

And while a significant relationship developed between time in GA and personality variability on two traits, when variation due to treatment effort was partialled out in the multiple regression equation, time in GA alone had virtually no bearing on these personality variable relationships. Consequently, it appears evident that attendance in Gamblers Anonymous alone is not likely to result in personality change or personal recovery. Furthermore, it is unlikely

that it will significantly increase one's ability to abstain from gambling. In short, successful treatment (personality change) and abstinence of compulsive gambling appears most highly related to the degree to which one works (puts effort forth in) the 12 steps of the GA Recovery Program.

Despite the fact that locus of control and competitiveness were not established to be related to treatment effort, these variables provided additional noteworthy insights. As Table 3 indicates, locus of control was found to be significantly related to percentage of income spent when gambling. This suggests that among compulsive gamblers, those persons who indicated greater internal orientation were more likely to risk a greater percentage of their income when pursuing gambling endeavors. This finding is particularly relevant to researchers investigating the issue of illusion of control and risk taking. Of equal magnitude was the significant relationship between competitiveness and the ability to abstain from gambling since entering Gamblers Anonymous. This suggests that decreasing one's level of competitiveness tends to be accompanied by an increased ability to abstain from gambling.

Addressing the lack of association between effort and the locus of control and competitiveness variables, two plausible explanations are provided. The Nowicki and Strickland Locus of Control Scale is perhaps too general for

compulsive gamblers, and a more gambling situationally oriented measure would be more appropriate. Secondly, the self-designed competitiveness measure was not internally validated. Consequently, some of the items might not have accurately represented the competitiveness construct.

The Phase II analysis yielded both disappointment and surprise. There were no significant differences evidenced on any of the four personality variables between the minimum effort treatment group and the controls. The author had suspected that persons in the minimum treatment (effort) group would represent the deviate pathological gamblers, a personality style characterized by lying, cheating and stealing in order to satisfy one's needs and feed one's habits, and that these persons would indicate significant differences from controls.

One potential explanation for this absence concerns the range of effort indicated by the minimum effort group (Table 1). With an n of 13, subject scores ranged from 15 to 26 on the GA Recovery Program (effort) Scale. Therefore, all of the minimum effort subjects perceived themselves as allocating on the average somewhere between a minimum and a moderate level of effort. Consequently, this group did not adequately represent the no treatment to minimum treatment (effort) group as envisioned. The ideal methodology for future researchers would be to identify and sample compulsive gamblers prior to the initiation of treatment

effort. Practicality concerns make this approach most difficult to employ.

From a more envisioned standpoint, no significant differences were evidenced between the substantial effort group and the control group on the altruism, locus of control and competitiveness variables. These findings, while accurate, are limited by the lack of substantiated differences which were predicted between the minimum effort group and controls discussed in the preceding paragraph. In essence, the minimum effort group and the substantial effort group did not significantly differ from controls on altruism, locus of control and competitiveness. Therefore, they were similar to each other on these three variables.

The surprise finding however, was the significant difference noted between the substantial effort group and all other groups on the egocentrism variable. This suggests that persons who allocate a great deal of effort in the GA Recovery Program tend to indicate a reduced level of egocentrism and possess a level of humility in excess of lesser treatment (effort) groups and the general population. The explanation that seems most likely is that compulsive gamblers who place a great deal of emphasis in the GA Recovery Program, are persons that become highly sensitive to the issue of egocentrism. Consequently, they attempt to avoid it. Secondly, they develop a strong commitment to the

value of humility, one in which they practice in their daily affairs.

Among the additional analyses performed (Table 3), two significant relationships warrant discussion. An interesting relationship was the degree of effort expended and the percentage of income spent by the compulsive gambler when gambling. This relationship essentially suggests that "the harder the fall" the greater the likelihood the individual will put forth effort into the GA Recovery Program. Secondly, the percentage of income spent (the harder the fall), the greater the ability to abstain from gambling upon entering Gamblers Anonymous. In both AA and GA, this phenomenon is also referred to as "hitting bottom".

From this standpoint, the family, society and Gamblers Anonymous all have a responsibility to educate and suggest treatment to persons suspected of harboring a pathological gambling illness. Ideally, some of these persons would then elect to receive treatment (initiate effort) at earlier stages in their gambling. To the author's knowledge, GA has yet to arrive at an effective strategy for earlier recognition and treatment of compulsive gamblers. In the majority of cases witnessed, most persons turn to Gamblers Anonymous only when their lives have become unmanageable, and when they have absolutely no other place to turn.

Another unsuspected relationship evidenced was the significant relationship between age and the personality

variables egocentrism and altruism (Table 3). In this case, older persons were more likely to indicate less egocentrism, and were more likely to perceive themselves as more altruistic. Additionally, they tended to have spent more time in Gamblers Anonymous, and allocated greater effort in the GA Recovery Program than younger persons. When variation due to treatment effort was partialled out in the multiple regression equation, the relationships between age and egocentrism and age and altruism decreased (Table 4). Yet in both cases, the corresponding coefficient remained near or better than the .05 significance level.

These findings suggest that some personality changes, particularly ones which many GA veterans associate with immaturity and self-centeredness, occur as a function of the aging process ("growing up"). This does provide a plausible explanation, one often cited in Gamblers Anonymous as to why many persons do not seek treatment until late in their gambling careers and late in life. That is, they are just not ready (mature enough) to face their responsibilities and problems, hence they avoid them by escaping reality into the dream world of gambling. Gamblers Anonymous has indicated that this phenomenon occurs as a subconscious behavioral pattern. In further support of this aging and personality change theory, age was related similarly to egocentrism and altruism among control persons ($r = -.37$, $p < .05$ and $r = .40$, $p < .05$ respectively).

Addressing the nature of the 12 steps of the GA Recovery Program, the principle component extracted in the factor analysis was highly demonstrative. Furthermore, both egocentrism and altruism significantly correlated with all other personality variables (see Table 3). Therefore, it appears that those persons who have allocated extensive effort in the GA Recovery Program, have encompassed at least two concepts (lack of egocentrism and increased altruism) if not additional ones into their daily affairs. Despite these results, the author still contends that a unique factor (a spiritual one) exists and it encompasses steps 2,3,7 and 11 of the GA Recovery Program. Future researchers might wish to investigate and attempt to tap this perceived spiritual component.

Additional suggestions for researchers seeking to replicate and/or expand on this study include:

- 1) Utilize a locus of control scale which is more gambling situationally oriented.
- 2) Identify or validate a measure of competitiveness in order to determine if effort in the GA Recovery Program tends to be accompanied by a decrease in competitiveness. Secondly, to determine if compulsive gamblers tend to be more competitive than the general population.
- 3) Obtain a larger sample of control persons and attempt to match them against non-treated

compulsive gambler subjects. This to establish a distinct and relevant pathological gambler profile, and to identify relevant personality differences between the pathological gambler (not the arrested gambler) and the general population.

- 4) Employ a longitudinal design when feasible in order to assess individual personality change as a function of effort allocated in the GA Recovery Program.

Ideally, when these conditions are met, and when a distinctive pathological gambler profile has been empirically established, larger steps can be made in the identification and treatment of compulsive gamblers. A product of this research might be the development of a personality profile measure, one which assesses the current status of the compulsive gambler on critical personality variables. This measure could be issued over regular time intervals monitoring treatment progress and degree of personality change experienced by the compulsive gambler.

We know that the scientific research on compulsive gambling is still in its infancy, and the scope of research methodology is virtually limitless. This is fortunate, because with the rapid increase in state lotteries, casinos, pari-mutuel wagering and sports betting, there is much to be concerned about.

APPENDICES

APPENDIX 1

The following statements have been designed to show where you should be placed on various personality traits. There are no "right" or "wrong" answers, therefore it is impossible to get a "good" or a "bad" score. Answer each question using the numbered scale at the right of the question page.

- | | |
|---|--|
| <p>_____ 1. I would like to devote my life to the service of others.</p> <p>_____ 2. I enjoy helping people even if I don't know them very well.</p> <p>_____ 3. I would try to avoid a job in which I had to help people with their problems.</p> <p>_____ 4. I would hate to make a loan to a poor family I didn't know very well.</p> <p>_____ 5. It would be hard for me to spend my life serving other people.</p> | <p style="text-align: center;"><u>SCALE</u></p> <p>7. DEFINITELY</p> <p>6. VERY PROBABLY</p> <p>5. PROBABLY</p> <p>4. POSSIBLY</p> <p>3. PROBABLY NOT</p> <p>2. VERY PROBABLY NOT</p> <p>1. DEFINITELY NOT</p> |
|---|--|

- | | |
|--|---|
| <p>_____ 6. I am very kindhearted.</p> <p>_____ 7. If someone is looking for help, I try to make myself scarce.</p> <p>_____ 8. I am generous with the poor.</p> <p>_____ 9. I take care of myself before I think about other people's needs.</p> <p>_____ 10. I am inclined to be unsympathetic.</p> <p>_____ 11. I like to help people even if they don't know who did it.</p> <p>_____ 12. I have a strong desire to do something for the good of humanity.</p> <p>_____ 13. My inclination is to give as little to charity as my conscience will allow.</p> <p>_____ 14. I think it is more important for those I love to be happy than it is for me to be happy.</p> <p>_____ 15. I am a very sympathetic person.</p> <p>_____ 16. I try to get out of helping other people if I can.</p> | <p style="text-align: center;"><u>SCALE</u></p> <p>7. ALWAYS</p> <p>6. VERY FREQUENTLY</p> <p>5. FREQUENTLY</p> <p>4. OCCASIONALLY</p> <p>3. RARELY</p> <p>2. VERY RARELY</p> <p>1. NEVER</p> |
|--|---|

- _____ 17. I am willing to share what I
can with others less fortunate.
- _____ 18. I am a rather insensitive to the
difficulties that other people
are having.
- _____ 19. I like to look after the welfare
of the ones I love before I worry
about myself.
- _____ 20. I am a rather selfish person.

APPENDIX 2

Read each of the statements and decide whether it is TRUE as applied to you, or FALSE as applied to you. If a statement is TRUE or MOSTLY TRUE for you, check the space marked T. If a statement is FALSE or NOT USUALLY TRUE for you, check the space marked F.

- | | <u>T</u> | <u>F</u> |
|--|----------|----------|
| 1. A strong person doesn't show his emotions and feelings. | _____ | _____ |
| 2. I don't blame anyone for trying to grab all he can get in this world. | _____ | _____ |
| 3. I would enjoy showing foreigners around my town or state. | _____ | _____ |
| 4. Assuming that I had sufficient leisure time, I would prefer to use it to develop a favorite skill rather than to do volunteer social work or public service work. | _____ | _____ |
| 5. I am curious about people but I don't feel close to them. | _____ | _____ |
| 6. The best way to handle people is to tell them what they want to hear. | _____ | _____ |
| 7. I am aroused by a speaker's description of unfortunate conditions in a locality or country. | _____ | _____ |
| 8. People pretend to care about one another than they really do. | _____ | _____ |
| 9. I tend to ignore the feelings of others when accomplishing some end that is very important to me. | _____ | _____ |
| 10. I am active on the committees of school organizations. | _____ | _____ |
| 11. Most people inwardly dislike putting themselves out to help other people. | _____ | _____ |
| 12. When prices are high you can't blame a person for getting all he can get while the getting is good. | _____ | _____ |

- | | <u>T</u> | <u>F</u> |
|---|----------|----------|
| 13. There are certain people I dislike so much that I am inwardly pleased when they are catching it for something they have done. | _____ | _____ |
| 14. I discuss the causes and possible solutions of social, political, economic or international problems. | _____ | _____ |
| 15. I would rather remain free from commitments to others than risk serious disappointment or failure later. | _____ | _____ |
| 16. If I could get into a movie without paying and be sure I was not seen, I would probably do it. | _____ | _____ |
| 17. I am more realistic than idealistic, that is, more occupied with things as they are than with things as they should be. | _____ | _____ |
| 18. I enjoy listening to debates and discussions on social, economic or political problems. | _____ | _____ |
| 19. When traveling I am more interested in seeing the scenic or historical spots than in making new acquaintances. | _____ | _____ |
| 20. It is all right to get around the law if you don't actually break it. | _____ | _____ |
| 21. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important. | _____ | _____ |
| 22. I become so enthusiastic that my enthusiasm spreads to those around me. | _____ | _____ |
| 23. I would rather not have responsibility for other people. | _____ | _____ |
| 24. Husbands, rather than wives, should have the final voice in family matters. | _____ | _____ |
| 25. It is better never to expect much; then you are rarely disappointed. | _____ | _____ |

- | | <u>T</u> | <u>F</u> |
|--|----------|----------|
| 26. I would enjoy studying the causes of an important national or international event and writing a paper on these causes. | _____ | _____ |
| 27. What is lost in life seems more vivid than what is gained. | _____ | _____ |
| 28. We cannot know for sure whether or not there is a God. | _____ | _____ |
| 29. I am interested in conversations about people whether or not I am acquainted with them. | _____ | _____ |
| 30. I often wonder what hidden reason another person may have for doing something nice for me. | _____ | _____ |
| 31. It is difficult for me to take people seriously. | _____ | _____ |
| 32. I easily become impatient with people. | _____ | _____ |
| 33. I like to serve as a member of a committee in carrying out some activity or project. | _____ | _____ |
| 34. I expect that ultimately mathematics will prove more important for mankind than will theology. | _____ | _____ |
| 35. I enjoy chatting and playing with children. | _____ | _____ |
| 36. I hesitate to ask the assistance of others. | _____ | _____ |

APPENDIX 3

PERSONAL FEELINGS

We are trying to find out what men and women think about certain things. We want you to answer the following questions the way you feel. There are no right or wrong answers. Don't take too much time answering any one question, but do try to answer them all.

One of the concerns during the test may be, "What should I do if I can answer both yes and no to a question?" It's not unusual for that to happen. If it does, think about whether your answer is just a little more one way than the other. For example, if you'd assign a weighing of 51 percent to "yes" and assign 49 percent to "no," mark the answer "yes." Try to pick one or the other response for all questions and not leave any blank.

1. Do you believe that more problems will solve themselves if you just don't fool with them? Yes__ No__
2. Do you believe that you can stop yourself from catching a cold? Yes__ No__
3. Are some people just born lucky? Yes__ No__
4. Most of the time do you feel that getting good grades meant a great deal to you? Yes__ No__
5. Are you often blamed for things that just aren't your fault? Yes__ No__
6. Do you believe that if somebody studies hard enough he or she can pass any subject? Yes__ No__
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway? Yes__ No__
8. Do you feel that if things start out well in the morning it's going to be a good day no matter what you do? Yes__ No__
9. Do you feel that most of the time parents listen to what their children have to say? Yes__ No__
10. Do you believe that wishing can make good things happen? Yes__ No__

11. When you were punished, did it usually seem it was for no good reason at all? Yes___ No___
12. Most of the time do you find it hard to change a friend's opinion? Yes___ No___
13. Do you think that cheering more than luck helps a team to win? Yes___ No___
14. Did you feel that it was nearly impossible to change your parents' minds about anything? Yes___ No___
15. Do you believe that parents should allow children to make most of their own decisions? Yes___ No___
16. Do you feel that when you do something wrong there's very little you can do to make it right? Yes___ No___
17. Do you believe that most people are just born good at sports? Yes___ No___
18. Are most of the other people your age stronger than you are? Yes___ No___
19. Do you feel that one of the best ways to handle most problems is just not to think about them? Yes___ No___
20. Do you feel that you have a lot of choice in deciding who your friends are? Yes___ No___
21. If you find a four-leaf clover, do you believe that it might bring you good luck? Yes___ No___
22. Did you often feel that whether or not you did your homework had much to do with what kind of grades you got? Yes___ No___
23. Do you feel that when a person your age is angry at you, there's little you can do to stop him or her? Yes___ No___
24. Have you ever had a good-luck charm? Yes___ No___
25. Do you believe that whether or not people like you depends on how you act? Yes___ No___

26. Did your parents usually help you if you asked them to? Yes ___ No ___
27. Have you felt that when people were angry with you it was usually for no reason at all? Yes ___ No ___
28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today? Yes ___ No ___
29. Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them? Yes ___ No ___
30. Do you think that people can get their own way if they just keep trying? Yes ___ No ___
31. Most of the time do you find it useless to try to get your own way at home? Yes ___ No ___
32. Do you feel that when good things happen they happen because of hard work? Yes ___ No ___
33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters? Yes ___ No ___
34. Do you feel that it's easy to get friends to do what you want them to do? Yes ___ No ___
35. Do you usually feel that you have little to say about what you get to eat at home? Yes ___ No ___
36. Do you feel that when someone doesn't like you there's little you can do about it? Yes ___ No ___
37. Did you usually feel that it was almost useless to try in school because most other children were just plain smarter than you were? Yes ___ No ___
38. Are you the kind of person who believes that planning ahead makes things turn out better? Yes ___ No ___

39. Most of the time, do you feel that you have little to say about what your family decides to do?

Yes ☐ No ☐

40. Do you think it's better to be smart than to be lucky?

Yes ☐ No ☐

APPENDIX 4

We want to see the way people feel about certain things. There are no right or wrong answers. Please answer all questions with one of the following responses:

STRONGLY AGREE (SA): AGREE (A): UNDECIDED (U):
DISAGREE (D): STRONGLY DISAGREE (SD).

SA A U D SD

-
1. A friend asks you to play a game with him/her. You feel it is a game that you have little or no chance of winning. You would play the game.
 2. In general, losing money in a card game is compensated for by the enjoyment received from playing the game.
 3. There is really no sense in getting involved in a game if you can't expect to perform well in comparison to other participants.
 4. Losers are people who may many times fail to establish clear cut rigid goals to follow.
 5. Strict discipline and overbearing desire are key ingredients to becoming successful in life.
 6. If you lost some money at the race track, you might feel compelled to return to recoup your losses.
 7. You are involved in a major sporting event. Risking a serious injury is warranted when the outcome of the event is still in jeopardy.
 8. Finishing second doesn't stack up very high vs. coming in first.
 9. If you found that using synthetic substances (such as amino acids, steroids, etc.) would give you an edge over your competitors, you would probably consider using them.

SA A U D SD

10. Winning a gold medal at the Olympics clearly outshines winning a silver or bronze medal.
11. People who enter bowling leagues just to drink beer and "be with the boys" are basically just wasting time.
12. People who give up fairly easily will rarely accomplish very much during their lifetime.
13. Witnessing a grown man crying following a loss in a tournament or championship might indicate that the person has begun to take his activity too seriously.
14. The major reason why sports and trivia games have become so popular is that people enjoy competing against each other.
15. In general, pep rallies and pep talks give you more inspiration than most people.
16. Parents that strive for and boast about the superiority and accomplishments of their children are really just normal proud parents.
17. Allowing an agonizing injured runner to finish a marathon is totally uncalled for when the person has no chance of winning the race.
18. When you lose at a game with a friend, you often find yourself thinking or saying "shall we play best two out of three."
19. The person who consistently fails to win and still comes back for more should have the wisdom to recognize his shortcomings and accept the reality of them.

SA A U D SD

-
20. People who take games and events very seriously are of a more intense breed of people than people who take games and events at face value.
21. Without the thrill of a victory, the agony received from many defeats may always linger in the back of one's mind.
22. The really successful people are the ones who possess the strongest desires for succeeding.

APPENDIX 5

The following questions are designed to indicate how closely you have worked the 12 steps of recovery in the G.A. Program. This is not an attempt to grade or evaluate you. Please consider each statement carefully and honestly appraise the amount of effort you have spent on each of the 12 steps of recovery. Utilize the scale provided below:

- 0) I have not spent any time or effort working the particular step in question.
- 1) I have spent limited or minimal amount of time and effort working the particular step in question.
- 2) I have spent a moderate amount of time and effort working the particular step in question.
- 3) I have spent a substantial amount of time and effort working the particular step in question.
- 4) I have worked the particular step in question to what I consider the fullest capacity.

12 STEPS OF RECOVERY

- | | |
|--|-------------------------------|
| _____ We admitted we were powerless over gambling-- that our lives had become unmanageable. | 0-NO TIME AND EFFORT |
| _____ Came to believe that a Power greater than ourselves could restore us to a normal way of thinking and living. | 1-MINIMAL TIME AND EFFORT |
| _____ Made a decision to turn our will and our lives over to the care of this Power of our own understanding. | 2-MODERATE TIME AND EFFORT |
| _____ Made a searching and fearless moral and financial inventory of ourselves. | 3-SUBSTANTIAL TIME AND EFFORT |
| _____ Admitted to ourselves and to another human being the exact nature of our wrongs. | 4-STEP WORKED TO CAPACITY |
| _____ Were entirely ready to have these defects of character removed. | |

_____ Humbly asked God (of our understanding)
to remove our shortcomings.

_____ Made a list of all persons who we had
harmed and became willing to make
amends to them all.

_____ Made direct amends to such people
wherever possible, except when to
do so would injure them or others.

_____ Continued to take personal inventory
and when we were wrong, promptly
admitted it.

_____ Sought through prayer and meditation
to improve our conscious contact with
God as we understood Him, praying only
for knowledge of His will for us and
the power to carry that out.

_____ Having made an effort to practice these
principles in all our affairs, we tried
to carry this message to other compulsive
gamblers.

APPENDIX 6

ADDITIONAL SURVEY DATA QUESTIONS

- 1). AGE: _____
- 2). On the average, how many GA meetings do you currently attend per month? _____
- 3). On the average, how many GA meetings per month have you attended throughout your affiliation with Gamblers Anonymous? _____
- 4). When you were gambling, approximately how much of your annual income did you spend for gambling purposes? (In percentage please) _____
- 5). We all know that many individuals have slips while they are in GA. During the time that you have become a member of GA, what percentage of the time have you stayed clean from gambling? _____
- 6). TIME IN G.A.: YEARS _____ MONTHS _____
- 7). Do you gamble more or less than 10 minutes per week? (Check one)
- MORE _____ LESS _____

REFERENCES

- Bolen, D.W., Caldwell, A.B., & Boyd, W.H. Personality traits of pathological gamblers. Paper presented at the Second Annual Conference on Gambling, Lake Tahoe, Nevada, June 1975.
- Brown, R.I.F. The effectiveness of Gambler's Anonymous. Paper presented at the Sixth National Conference on Gambling, Atlantic City, USA, December, 1984.
- Comrey, A.L. (1970). Comrey Personality Scales Manual. Educational and Industrial Testing Service, San Diego, CA.
- Custer, R.L., & Custer, L.F. Characteristics of the recovering compulsive gambler. Paper presented at the Fourth Annual Conference on Gambling, Reno, Nevada, December 1978.
- Custer, R.L., Glen A., & Burns, R. Characteristics of compulsive gambling. Paper presented at the Second Annual Conference on Gambling, Lake Tahoe, Nevada, June 1975.
- Glen, A.M. Personality research on pathological gamblers. Paper presented at the American Psychological Association Annual Convention, New York, 1979.
- Heist, P. & Yonge, G. (1968). Omnibus Personality Inventory Manual - Form F. The Psychological Corporation, New York, NY.
- Knapp, T.J., & Lech, B.C. Pathological gambling: A review and critique. Paper presented at the Fifth National Conference on Gambling and Risk Taking, South Lake Tahoe, Nevada, October 1981.
- Lowenfeld, B.H. (1979). Personality dimensions of a pathological gambler (Doctoral dissertation, Kent State University, 1979). Dissertation Abstracts International, 40, 456B.
- Moravec, J.D., & Munley, P.H. (1983). Psychological test findings on pathological gamblers in treatment. The International Journal of the Addictions, 18(7), 1003-1009.

Nadler, L.B., & Bosley, J.J. Utility theory and the compulsive gambler: Are they at odds? Paper presented at the Fifth National Conference on Gambling and Risk Taking, Lake Tahoe, Nevada, October 1981.

Nowicki, S. & Strickland, B.R. Nowicki and Strickland Locus of Control Scale Manual. No copyright.

Roston, R.A. (1965). Some personality characteristics of male compulsive gamblers. In Proceedings of the 73rd Annual Convention of the American Psychological Association, 263-264.

Taber, J.I., Russo, A.M., & Adkins, B.J. Ego strength and achievement motivation in pathological gamblers. Cleveland Veterans Administration Center, undated.