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Harold L. Goodearle
University of St. Thomas

Colleen Hester
University of St. Thomas

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Personality Factors Related to Sobriety for Participants in Alcoholics Anonymous

Harold L. Goodearle
and Dr. Colleen Hester

University of St. Thomas

ABSTRACT

The effects of extraversion-introversion (E-I), locus of control (LC), and attitudes towards a "Power greater than ourselves" (PGO) on number of relapse episodes, number of times in treatment, and length of sobriety were explored. Volunteers from local Alcoholics Anonymous (A.A.) groups (n=72) and two inpatient treatment centers (n=52) completed the Eysenck Personality Inventory, the Rotter Locus of Control measure, a questionnaire designed by the author to assess attitudes concerning the concept adopted by A.A. of a PGO, and a brief self report survey. Results of the multiple regression analyses exploring the effects of E-I, LC, and PGO indicated the 3 factors accounted for: 17.69% of the variance in number of relapses, with a significant ($p < .0001$) PGO effect; 5.01% of the variance in number of times in treatment, with ($p < .08$) and LC ($P < .11$) trends when PGO was removed; and 0.67% of the variance in length of sobriety.

INTRODUCTION

There are many facets of addiction and recovery from addiction which need to be further explored and clarified. In particular, the reasons why some people benefit from support groups like Alcoholics Anonymous (A.A.) while others do not, warrant further investigation. A.A. literature reports recovery rates of up to 75% for members who earnestly use their methods (Bourne & Fox, 1973). While successful recovery in A.A. obviously occurs, data about recovery and the components that contribute to recovery need to be scientifically assessed and explicated.

The literature on personality and alcoholism is extensive (Cernovsky, 1986; Cox, 1979; Partington & Johnson, 1969; Skinner, Jackson, & Hoffman, 1974); however, no studies were found which explored E-I, LC, and PGO in relation to recovery. While E-I is a well studied personality construct (e.g., Eysenck & Eysenck, 1966; Myers & McCaulley, 1985), the literature on its relation to recovery from alcoholism or addiction is relatively sparse. Generally, alcoholics have been postulated to be more introverted than the general population (Eysenck & Rachman, 1965; Luzader, 1984; Tarnai & Young, 1983). Alcoholics who participate in a treatment program for their addiction have been found to become more extraverted during the course of treatment (Wilson & Kennard, 1978) and that alcoholics who participate in A.A. have been found to be more extraverted than alcoholics who do not participate (Hurlburt, Gade, & Fuqua, 1984).

LC has been defined as a "generalized expectancy" operating across numerous situations, relating to the individuals' belief as to whether or not they have control over events in their lives (Lefcourt, 1976). The traditional construct of LC (Rotter, 1966) is bi-polar, suggesting that individuals have a general tendency towards either an internal or external LC based on one's social reinforcement history. However, some research supports a multi-dimensional aspect of LC, that there may be a dimension of generalized expectancy and a dimension of situational expectancy within the individual (Rotter, 1975). Pyle (1984) generated mixed findings with respect to alcoholism and LC. While traditional scientific perspectives as well as the perspectives of A.A. have maintained that alcoholics are external in their general orientation prior to recovery (Alcoholics Anonymous, 1975, p.64), the drinking-related locus of control seems to be internal for most alcoholics. While the alcoholic often blames external events or others for his or her drinking, it is with conviction that they state their ability to control their drinking. A fundamental basis for recovery in A.A. is an abdication of this belief in

one's control over alcohol. In subsequent "steps" or actions the alcoholic involved in A.A. is involved in taking more personal responsibility for his/her actions. Across treatment there is a reversal of orientation in addicts with respect to the two dimensions of generalized and drinking-related LC in A.A. based recovery. Initially A.A. members must "surrender" to the fact that they are "powerless over alcohol" and that in order to recover they must adopt a belief that only a "Power greater than themselves" can provide the needed relief from alcohol. The alcoholic's drinking-related internal locus of control is replaced with a drinking-related external locus of control. However, the philosophy of A.A. assumes that alcoholics should not merely quit drinking but should also begin to take control and responsibility for the lives they have damaged by drinking. In several "steps" or actions taken by the A.A. member, the individual is faced with reconciling individual shortcomings and damaged relationships. The supplanting of the generalized external locus of control with an internal locus of control is at the root of these "steps". There is data that suggests that a generalized internal locus of control is related to accepting treatment referral (McGovern & Caputo, 1983) and to success in treatment (Caster & Parsons, 1977). The philosophy of A.A. instills an internal locus of control about life in general, the focus of the LC measure of this investigation.

Simultaneously, the instilling of an external LC in relation to alcohol is also at the basis of A.A. philosophy. This constitutes the adoption of the belief in a PGO, the only "power" that will enable the addict to achieve and maintain sobriety. Although the literature discussing this component of A.A. is extensive, (Booth, 1987; Buxton, Smith, & Seymour, 1987; James, 1958), it tends to be speculative rather than empirical in nature. Several studies have explored the area of drinking-related LC (Donovan & O'Leary, 1978; Pyle, 1984; Bridgman & McQueen, 1987), and at least one measure of drinking-related LC exists (Donovan & O'Leary, 1978). However, none of these adopted the

concept of a PGO in conjunction with the assessment of drinking-related LC.

This investigation sought to generate and assess empirical data on the relationships between one's attitudes towards a PGO, theoretically a drinking-related LC index, the personality variable E-I, LC, and specific success-related dependent variables (number of reported relapses, times in treatment, and reported length of sobriety) in inpatient and outpatient A.A. samples.

METHOD

Subjects

Subjects were volunteers from local A.A. meetings in a large metropolitan area in the Southwest ($n = 72$) and from two local drug and alcohol treatment facilities in the same area ($n = 52$). There were 22 females and 102 males. Subjects' average age was 38.4 years. Educational levels varied greatly, from grade school to graduate school with the modal educational group having some college (31.7X).

Apparatus

Subjects completed: the Eysenck Personality Inventory (EPI) (Eysenck & Eysenck, 1966), a brief personality inventory measuring E-I; the Rotter Locus of Control measure (Rotter, 1966) assessing a generalized LC orientation; and a 10-item survey designed to assess attitudes towards a PGO. Subjects also completed a brief survey soliciting demographic and self-report information, including the subject's length of sobriety, number of times in treatment, number of relapse episodes, first and second drug of choice (drug most used), and preferred size of A.A. meetings.

Procedure

Subjects were recruited by announcements following A.A. meetings and by a brief presentation by the investigators at the treatment centers. Subjects were informed that they would be asked to provide no identifying data and thus were assured of anonymity. Subjects were then asked to read and complete an

informed consent form prior to participation. Those choosing to participate completed the EPI, LC, and PGO measures along with the demographic/information survey. Following data collection subjects were debriefed and their questions were answered.

RESULTS

PGO Psychometric Data

The PGO concept, central to 12-step treatment, had not been empirically explored in the literature. The lack of an instrument to assess the PGO attitudes of subjects lead to the development of the 10-item survey by the senior author. The survey and scoring guidelines are provided in Appendices A and B. Psychometric properties of the PGO were investigated through factor analysis and reliability procedures.

Reliability

Reliability was assessed by computing an equal length Spearman-Brown split half reliability coefficient for the 10 PGO items ($r_{11} = .6345$) and a Cronbach's standardized item alpha ($r_{11} = .6957$). These values are in an acceptable range, though clearly not in the desirable range of .80 or .90. If administered to a more heterogeneous sample, PGO survey reliability coefficients may be found to be more robust since we know that the range of individual differences in the sample is an important factor restricting the size of the correlation coefficient. Our sample consisted entirely of individuals involved in A.A. based treatment programs.

Factor information.

A factor analysis of the 10 PGO items, utilizing Varimax rotation was conducted. Varimax converged in 4 iterations, indicating 3 factors which accounted for 58.8% of the variance. Factor 1, Spirituality, had an Eigen value of 3.38, accounting for 33.8% of the variance, loading positively on items 1, 2, 3, 6, and 8. Factor 2, Drive for Self Control/Introversion, had an Eigen value

of 1.38, accounting for 13.8% of the variance, and loaded positively on items 7, 9, and 10. Factor 3, Sobriety-Related Rejection of a "Power Greater than Ourselves", had an Eigen value of 1.13, accounting for 11.3% of the variance, and loaded positively on item 4 and negatively on item 5.

Inferential Analyses

The effects of E-I, LC, and PGO on the dependent variables (number of relapse episodes, number of times in treatment, and length of sobriety) were explored in both multiple regression analyses and oneway ANOVAs. In the ANOVAs, only subjects scoring at extremes on the measures of E-I, LC, and PGO were included in order to contrast clearly defined groups; thus subjects scoring in the middle were excluded. ANOVA analyses utilized subjects scoring <9 on E-I to define extreme introverts ($n = 29$) and >15 to define extreme extraverts ($n = 46$). LC groups were arrived at using cutoffs <6 for extreme internal LCs ($n = 42$) and >11 for extreme external LCs ($n=42$). While the sample generally endorsed the notion of PGO, discrete groups were defined utilizing PGO total scores <21 for the "higher" endorsement group ($n = 41$) and >28 for the "lower" endorsement group ($n = 43$). In addition, various demographic variables (sex, education level, and treatment type) were explored in oneway ANOVAs to test for their effects on the dependent variables. Finally, correlations were obtained to explore relationships between all of the variables.

Number of relapse episodes.

E-I, LC, and PGO together accounted for 17.69% of the variance on number of relapses for the entire sample, $F(3,120) = 8.60$, $P<.0001$. When LC was removed in a backward step analysis, EI and PGO accounted for 17.67% of the variance, $F(2,121) = 12.99$, $p<.0001$. PGO contributed significantly ($P<.0001$) while E-I contributed at the trend level ($p<.06$) on the relapse variable. The ANOVAs utilizing extreme groups

indicated that extreme extraverts ($M = .89$, $B = 46$) had significantly fewer relapses than did extreme introverts ($M = 3.07$, $n = 29$), $F(1,74) = 8.82$, $p < .004$, as summarized in Figure 1.

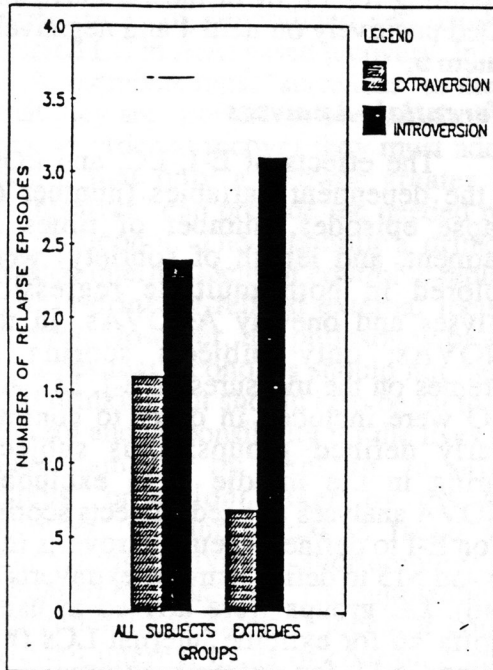


Figure 1. Extraversion-Introversion Mean Scores on Number of Relapses.

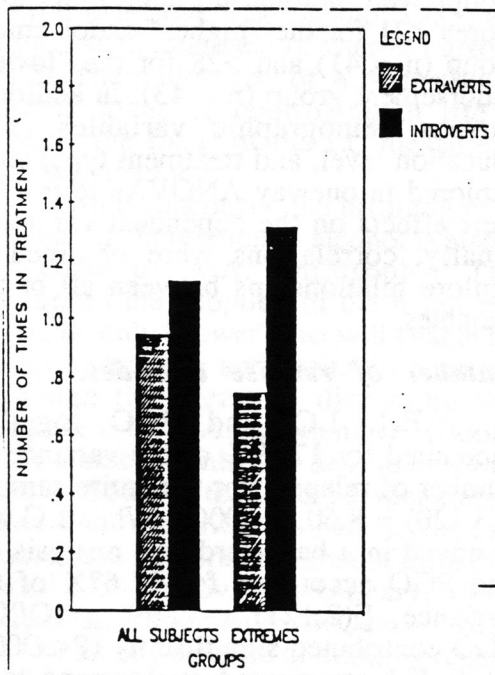


Figure 2. Extraversion-Introversion Mean Scores on Number of Times in Treatment.

Times in treatment

The multiple regression analysis exploring the effects of E-I, LC, and PGO on number of times in treatment indicated that the three accounted for 5.01% of the variance, $F(3,120) = 2.11$, $p < .10$. In a subsequent backward step analysis with the effects of PGO removed, 4.84% of the variance was accounted for, $F(2,121) = 3.074$, $p < .05$, with E-I contributing more to the variance ($p < .08$) than LC ($p < .11$). The oneway ANOVA exploring the effects of E-I on times in treatment indicated a trend, $F(1,74) = 2.65$, $p < .11$. A greater number of times in treatment was associated with greater introversion scores, as indicated in Figure 2.

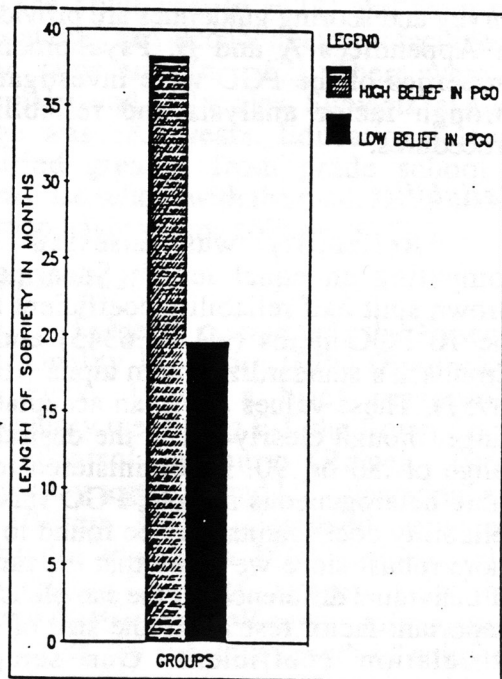


Figure 3. Extreme PGO Scores on Length of Sobriety.

Length of sobriety

While E-I, LC, and PGO together accounted for only 0.67% of the variance on length of sobriety for the entire sample, the oneway ANOVA exploring the effects of PGO on length of sobriety indicated that subjects "higher" in their endorsement of PGO had a longer period of sobriety in 10 months ($M = 42.76$, $n = 41$) than those "lower" in their endorsement ($M = 21.79$, $n = 43$), $F(1,83) = 2.89$, $p < .09$, as

summarized in Figure 3. Also, regression analysis utilizing factor scores from the PGO factor analysis revealed that Factor 2, Drive for Self Control/Introversion, accounted for 10X of the variance on Length of Sobriety, $F(1,122) = 13.86, p < .0003$.

Ancillary Analyses

Subject's report of first and second drug of choice are reported in Table 1.

Table 1
Frequency and Percent of Subjects' First and Second^a Drug of Choice

	First	Second
Alcohol	83 (68.0%)	17 (18.5%)
Cocaine	22 (18.0%)	11 (12.0%)
Marijuana	10 (8.2%)	22 (23.0%)
Sedatives	3 (2.5%)	3 (3.3%)
Amphetamines	1 (0.8%)	3 (3.3%)
Hallucinogens	1(0.8%)	2 (2.2%)
Opiates	1 (0.8%)	2 (2.2%)
Food	1 (0.8%)	0 (0.0%)

^a Thirty two (34.8X) of the subjects did not report a second drug of choice.

Oneway ANOVAs testing the effects of sex, educational level, and type of treatment were conducted on each of the dependent variables. No sex differences emerged. Education level of subjects was found to be related to length of sobriety, $F(6,121) = 4.57, p < .0003$, with higher levels of education related to longer sobriety, as summarized in Table 2.

Table 2
Significant Differences^a Across Educational Levels on Length of Sobriety

Educational Level (Mean)	2	3	4	5	6	7	8
2) Junior High School (1.0)					•	•	•
3) High School (1.37)					•	•	•
4) Trade School (2.86)					•	•	•
5) Some College (56.47)					•	•	•
6) College Degree (59.91)	•	•	•	•			
7) Some Graduate School (62.00)	•	•	•				
8) Graduate Degree (59.91)	•	•	•				

^a $p < .05$

Current treatment type was found to be related to number of relapses [$F(3,121) = 2.75, p < .051$, times in

treatment $1F(3,121) = 4.05, p < .009$], and length of sobriety [$F(3,121) = 10.60, p < .0001$]. Treatment type differences are summarized in Table 3

Table 3
Significant Differences^a Across Current Treatment Types on Number of Relapses, Times in Treatment, and Length of Sobriety

Dependent Variable	Mean	n	Treatment Type ^b			
			1	2	3	4
Number of Relapses						
1	1.47	53		•		
2	4.53	19	•			•
3	0.33	3				
4	1.21	47		•		
Times in Treatment						
1	0.74	53		•		•
2	1.21	19	•			
3	1.00	3				
4	1.19	47	•			
Sobriety						
1	52.62	53				•
2	34.63	19				•
3	6.00	3				
4	1.00	47	•	•		

^a $p < .05$

^b 1 = no current treatment
2 = outpatient group treatment
3 = outpatient individual treatment
4 inpatient group treatment

Correlational analyses utilizing all variables indicated significant relationships between the Lie and Neuroticism scales of the EPI ($r = -0.32, p < .001$); between the PGO total scores and number of relapse episodes ($r = 0.39, p < .001$), with more relapses associated with lower endorsement; and between the number of times in treatment and the number of relapse episodes ($r = 0.43, p < .001$).

DISCUSSION

Most studies found that alcoholic or drug-addicted samples were more introverted than the general public. This sample was slightly more extraverted as a whole than the general population as reported by Eysenck and Eysenck (1966). This may reflect self selection; perhaps more extraverted addicts select A.A.'s group-oriented treatments. Those subjects who scored in an extraverted direction on the EPI (versus introverted) showed better outcomes on number of relapse episodes and times in treatment, in accordance with

the intuitive sense that extraverts would be more comfortable in a socially-oriented program, such as A.A. Findings of this study are in accord both with Wilson and Kennard's (1978) findings of increased extraversion being associated with longer term sobriety and with Hurlburt et al's. (1984), in that both studies associated higher extraversion scores with treatment maintenance or sobriety.

The hypothesis that internal LC is associated with greater success in 12 recovery from addiction was not substantially supported by results of this investigation. Results indicated that LC was, as most, a trend-level contributor to number of times in treatment. Future research may explore LC across time, and utilizing multiple measures of LC, perhaps one that is drinking related.

The measurement of PGO had virtually no precedent in the literature, while PGO has been conceptually associated with success in A.A. since its inception. The 10-item PGO measure provided a functional indicator of success in A.A. in terms of number of relapse episodes and length of sobriety. While the endorsement of this concept by a majority of the subjects is not surprising, the power of the instrument to predict the more "successful" subjects is noteworthy. Findings suggest that future investigation in this area is warranted, perhaps with a refined PGO instrument. Although it might be argued that PGO scores reflect social-desirability of subjects, no significant correlation was found between the Lie scale of the EPI and PGO total scores ($r = -0.069$).

While the sample may be criticized for being homogenous-and thus of limited generalizability, it can be asserted that relatively few studies have sampled individuals in A.A. based treatment. Since A.A. may arguably represent the most frequent treatment modality in our culture given the sheer number of participants, this limited sample can be generalized to shed light on the important population of A.A. participants. The study of participants in A.A. is limited, and this study contributes to our knowledge of this substantial and understudied population.

If a body of literature accrues validating the relationship of E-I, LC, and PGO and sobriety related outcome variables, it may be possible to take these variables into consideration when designing and assessing the efficacy of differential treatments, further improving recovery from alcoholism or addiction.

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Author Notes

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