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Personality Factors In Substance Abuse

A Report to the U.S. Army

**Committee on Substance Abuse
and Habitual Behavior**

**Commission on Behavioral and Social
Sciences and Education**

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This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

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"Addictive Personality: A Viable Construct?" by Alan R. Lang appears in Peter K. Levison, Dean R. Gerstein, and Deborah R. Maloff, eds., Commonalities in Substance Abuse and Habitual Behavior (1983) Lexington, Mass.: Lexington Books.

"Screening Army Enlistees to Identify Individuals With Potential Substance Abuse Problems" by Edwin I. Megargee is available from the Committee on Substance Abuse and Habitual Behavior, 2101 Constitution Avenue, Washington, DC 20418.

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PREFACE

Problems of substance abuse and habitual behavior are the standing concern of this committee. While most of our attention has focused on scientific research questions regarding substance abuse in civilian life, there are special reasons for concern about the relationship of substance abuse to military personnel and institutions, in peacetime as well as in combat. Service in the military involves a substantial number of young adults, whose military training absorbs a heavy investment of public resources and who are in many cases entrusted with expensive, sophisticated, and powerful weaponry or other instruments, often used in demanding and difficult peacekeeping missions. The potential of substance abuse to damage morale and discipline, lives and property, security and other objectives of the military services is clear.

It is less clear how to improve the current substantial efforts of the military services to prevent such damage. Commonsense reasoning and occasional research reports encourage a desire to try weeding out by preinduction screening techniques actual or potential individual abusers before they enter military service. The U.S. Army Medical Research and Development Command in 1980 asked that this committee undertake a special review of individual personality factors in drug and alcohol abuse, with two specific objectives: to evaluate critically the major scientific studies that shed light on whether any particular, identifiable configuration of personality factors predisposes individuals to excessive substance use or abuse; and to advise the Army on the efficacy of methods for screening

inductees with personality assessment instruments to prevent the enlistment of individuals at high risk of excessive substance use or abuse.

To carry out this assignment, we commissioned and critically reviewed two state-of-the-art studies of relevant research knowledge, each examining one of these questions in depth. "Addictive Personality: A Viable Construct?" by Alan R. Lang examines the question of an addictive personality. "Screening Army Enlistees to Identify Individuals With Potential Substance Abuse Problems" by Edwin I. Megargee focuses on screening methods and personality assessment. Our report is based principally on these two studies, which were completed after detailed review and comment by the committee and are readily available to interested readers (see p. ii).

We are indebted to the authors of the studies, Alan Lang and Edwin Megargee of Florida State University, for their thorough analyses and lucid presentations as well as their rapid and constructive responses to the committee's inquiries and comments. We are grateful to Gardner Lindzey, Gerald McClearn, Charles O'Brien, and Albert Stunkard, committee members, and to Peter Levison, the committee's former study director (currently seconded to the Walter Reed Army Institutes for Research), for taking the principal role in commissioning, advising, and reviewing these special studies. We were also assisted by Christine L. McShane, editor of the Commission on Behavioral and Social Sciences and Education. Finally, we are pleased to thank Dean Gerstein, study director, who joined in drafting the committee's report and generally supervised completion of the project.

Louis Lasagna
Chairman, Committee on Substance
Abuse and Habitual Behavior

PERSONALITY FACTORS IN SUBSTANCE ABUSE

The idea of addictive personality derives from the clinical experience of psychiatrists and psychologists in treating cases of drug addiction and alcoholism. It originally described the features observed most often in the psychopathology and clinical behavior of drug addicts and alcoholics. Since psychodynamic theories have generally held that stable personality "traits" formed in early childhood make comprehensible much of the variation in individual adult (and adolescent) behavior, it was natural that clinicians and researchers with psychodynamic training should try to explain addictive behavior in terms of a common personality type (Pihl and Spiers, 1978; Cox, 1979). In contrast, later "situationist" psychologists have argued that behavior is best understood and predicted by knowing how to measure the sequence of situations that people encounter, to which they respond in situation-specific ways. An attempt to combine these contrasting views is "interactionist" psychology, which holds that behavior results from the interaction of personality factors with situational factors: Sometimes situations are so powerfully constraining as to suppress most differences arising from personality factors, while at other times personality differences can lead to behavioral variation (Bem and Allen, 1974; Mischel, 1977; Epstein, 1979, 1980).

Is enough known about the measurement of personality differences and the circumstances of substance abuse to permit useful predictions of future problem behavior at the time of induction into military service? To answer this question requires some understanding of the theory and practice of personality assessment and behavioral

prediction and review of specific applications to substance abuse in civilian and military environments.

A variety of diagnostic instruments exist for assessing personality and related aspects of psychological functioning (Wiggins, 1973; Sechrest, 1976). Most of these instruments are multiple-item questionnaires; some involve the performance of specially designed physical or cognitive-perceptual tasks. Modern views on personality assume that there are a number of fundamental, independently measurable dimensions of personality (e.g., introversion/extraversion, impulsiveness, conformity/rebelliousness, masculinity/femininity, hypochondriasis), the number varying from a few to several dozen depending on the theory, the test constructor, or the analyst. The dimensions may be theoretical constructs based on the interpreted content of a series of questions, or they may be strictly empirical—that is, aggregate scores, on the questions that most consistently discriminate one sort of person (as revealed by an independent "criterion" measure) from other sorts, with no attempt to discern further interpretive or theoretical significance in these questions. When individuals take psychometric tests, they display particular combinations of high and low scores on these different dimensions. A personality "type" is a characteristic pattern of such high and low scores, shared by a set of individuals, that differs from the general norm of scores or from the scores of some particular comparison group.

For a psychometric test to associate a particular personality type with a particular pattern of behavior, the test must have (a) applicability to all or almost all of the population of interest, (b) reliability, that is, the ability to show reasonably consistent scores for an individual at different times, and (c) criterion validity, which means that the test correlates reasonably well with an independently measured criterion behavior. The criterion behavior may be in the past, present, or future—in which cases one speaks of a test's validity being, respectively, postdictive, concurrent, or predictive.

Addictive behavior, the object or criterion of the theories considered here, is itself somewhat complex. It generally refers to ways of using psychoactive

substances that can provide short-term "highs" or changes in mood or perception but often damage health, social well-being, and psychological functioning or efficiency at work. Tolerance, dependence, and resistance to treatment efforts are also characteristic parts of the addictive syndrome, which is generally thought to involve several stages of development--beyond any one of which further development may not occur--from experimentation with one or more substances through intensified use to dependence and multiple relapses (Seevers and Deneau, 1963; Lettieri et al., 1980).

Measuring addictive behavior can be troublesome. The presence of contingent stages rather than a simple presence or absence means that measures may need tuning to relatively subtle differences. The absence or uncertainty of information about the erratic dose-potency of illegal substances, the simplifying assumption that more frequent use is equivalent to more addictive use, and the general reliance of criterion measures on self-report or on specialized samples produced by institutional treatment populations all raise cautions about the available measures for assessing addictive behavior.

Beyond the issues involved in separately measuring personality factors and addictive behavior is the problem of assessing the the relationship between them. At minimum, a test instrument ought to have convergent validity, which means that it is sensitive enough to give positive results in most cases in which the criterion behavior is observed, even though it also may give positive results for other kinds of behavior. More useful is discriminant validity, which means that, in addition to positive or convergent results when the criterion behavior is present, the test yields negative results when the criterion behavior is not observed and hence is not only sensitive but also specific to the behavior in question, capable of discriminating it from other behaviors.

Typical research approaches, such as matching a sample of clinical alcoholics or imprisoned addicts with a comparison group and examining differences between the personality assessment scores of the groups, can establish the convergent validity of a personality test, its capacity to detect the criterion behavior, on a postdictive or concurrent basis. If studies of this

sort are performed with an array of comparison groups, the level of discriminant validity (still on a postdictive or concurrent basis) may be established. But these approaches have limited utility for predictive analysis. The best way to develop predictive validity is by prospective longitudinal studies: drawing random or stratified samples of the populations of interest, testing these individuals initially, and following their behavior (and retesting with personality instruments) through later points in time.

The largest number of prospective studies have reported on precursors of alcoholism, heavy drinking, and serious alcohol-related problems (Robins et al., 1962; Jones, 1968; Fillmore, 1975; Jessor and Jessor, 1975; Kellam et al., 1980). In general, these studies indicate that, as a group, children or adolescents who later present these behavioral criteria had a general early tendency toward assertive, aggressive, nondeliberative personal styles; they valued personal independence over achievement; and generally they would have been deemed more "deviance-prone" than other children. In short, they were assessed as more impulsive, nonconforming, and liable to "act out" conflicts or hostile wishes. These early tendencies were relatively benign at the test points and represented a quantitative difference rather than a distinct qualitative type relative to the usual run of children in these samples.

Clinical and retrospective studies using the Minnesota Multiphasic Personality Inventory (MMPI) and related instruments reinforce the impression that this early, comparatively mild group tendency is relevant to later alcohol abuse (Loper et al., 1973; Apfeldorf, 1978; Clopton, 1978; Barnes, 1979; Owen and Butcher, 1979). Studies of clinical alcoholics show a considerable diversity in individual scores and do not reveal any single, universal pattern on the 10 diagnostic MMPI scales. But there is uniformly a group mean elevation in different samples on scale 4, which is labeled "psychopathic deviate" (Pd). As Alan Lang (1983) summarizes: "High scorers on this scale would appear to share common characteristics (including impulsivity, readiness to manipulate or act out, social deviance, etc.) with individuals who would probably receive a psychiatric diagnosis of 'antisocial

personality.' However, the Pd scale also measures guilt and intropunitive remorse, which are not associated with such a diagnosis."

These last two MMPI-interpretive themes (also characterized as low self-esteem and anxious depression) are logical results of alcoholic life events, while the "antisocial" signs of impulsivity and nonconventional or rebellious values and additional findings of heightened "sensation seeking" seem to represent extensions of the personality predispositions identified in childhood. Thus the common elevation of scale 4 probably reflects both precursors and sequelae of alcoholism. However, the elevation of scale 4 (and scales 2 and 7, which generate the MMPI code type most often manifest in alcoholics) is also associated with incarcerated criminals, neurotics, and a number of other clinical groups without drinking problems.

Studies of substances other than alcohol are diverse, but their results move in similar directions. Studies of marijuana use are not generally focused on addictive behavioral criteria and are more social-psychological than psychodynamic in orientation (Kandel 1978; Jessor, 1979). These studies nevertheless reinforce the impression that quantitative differences in personality factors may predispose to more extensive substance use, though not necessarily to addictive behavior as such. Rebelliousness, tolerance for deviance, preference for independence over achievement, and sensation seeking are likely to be higher initially among youths who later use the most alcohol or illegal drugs, but again, these early signs are generally too benign and too common among the children studied to promise predictive discriminant validity vis-a-vis later substance abuse or addictive behavior.

Studies of heroin and polydrug addiction are virtually all based on comparisons of prison and treatment-based samples with assorted control groups. These studies show an excess of psychopathology of all sorts among addicts or very heavy users, with some degree of bias toward the "antisocial personality" configuration (Platt, 1975; Craig, 1979a, 1979b).

In summary, while no single and unique personality type seems either necessary or sufficient for substance use, substance abuse, or addictive behavior, certain broad factors--a high valuation of independence and

nonconformity versus conventional achievement goals, impulsivity, sensation seeking, and an overall deviance-prone or antisocial personality--have some degree of convergent and predictive validity. But these personality factors discriminate the criterion behaviors mainly in comparison with specialized psychiatric groups, not in relation to the general population or to groups that include delinquent or troubled individuals of less specialized sorts.

How do these findings apply to the possibility that personality assessment instruments could be used to screen inductees and predict which individuals would be likely to abuse substances or engage in problem behavior associated with substance abuse?

No studies are available that show directly whether personality assessment techniques are capable of efficiently identifying potential substance abusers among inductees, but a number of studies have demonstrated the potential benefits and drawbacks of psychological screening of inductees. These older studies illustrate that it is possible to identify groups of military inductees with psychiatric casualty rates considerably higher than the average--but that such identification in no way rules out the possibility of successful military careers (Matarazzo, 1978). Predicting behavior is never as accurate in characterizing performance as actually studying individuals in specific situations of interest. False positives and false negatives are inevitable; this consideration requires an attempt to select cutoff scores that maximize the type of correct predictions most desired and minimize the type of errors most important to avoid. In addition, practical considerations such as time and cost must influence the choice of instruments. Paper-and-pencil tests that can be administered easily to large groups and are readily amenable to quantification seem most practical. The most widely used and well-validated device of this sort is the MMPI (Megargee, 1982).

Although the regular MMPI scales and some of the specialized scales are sensitive to personality factors associated with problem drinking or drug abuse, no pattern is uniquely so associated and not all prospective alcoholics or drug abusers are likely to be detected (Owen and Butcher, 1979; MacAndrew, 1981;

Zager and Megargee, 1981). The MMPI is better able to postdictively or concurrently detect alcohol problems than to predict them, and is likely to yield a significant number of false positives. No study has been made of the practical validity of the instrument among young people motivated to present themselves favorably, such as to enhance their chances of admission into military service.

Empirical research would be necessary to establish and maximize the usefulness of the MMPI to identify present or future alcohol and drug abusers at the time of induction. An appropriately designed study among Army inductees would show how well the MMPI could predict patterns of maladjustment including but probably not limited to substance abuse. This study would have to be of longitudinal design, testing all individuals under real-life conditions, and should include one sample for deriving the best predictor scales and a second sample for cross-validation. After initial testing, the subsequent military careers of the samples should be tracked for a period of one to two years, focusing on problems related to substance abuse. The total number of participants would have to be on the order of 20,000, and several years would be required to complete the study.

As a quick, less expensive, but less definitive alternative, the Army might perform initially a rapid small-scale study of the concurrent validity of the MMPI with well-matched samples of maladjusted and well-adjusted personnel, numbering around 200 each. This study would be capable of demonstrating whether the MMPI instrument was patently unsuitable for the screening mission: negative findings--insufficient degrees of discriminant validity--would constitute strong evidence against the potential utility of the MMPI, while positive results would be encouraging but not conclusive.

The MMPI could be used without further research as a screening instrument to help choose inductee candidates who should be assessed in greater depth by skilled clinicians and whose performance and behavior during basic training might merit special scrutiny. There is sufficient knowledge to permit this kind of use, but a program evaluation component would be required in order to assess cost and benefit to the Army.

REFERENCES

- Apfeldorf, M.
1978 Alcoholism scales of the MMPI: Contributions and future directions. International Journal of Addictions. 13, 17-53.
- Barnes, G. E.
1979 The alcoholic personality: A reanalysis of the literature. Journal of Studies on Alcohol. 40, 571-634.
- Bem, D., and Allen, A.
1974 On predicting some of the people some of the time: Search for cross situational consistencies in behavior. Psychological Review. 81, 506-520.
- Clopton, J.
1978 Alcoholism and the MMPI. Journal of Studies on Alcohol. 39, 1540-1558.
- Cox, W.
1979 The alcoholic personality: A review of the evidence. Progress in Experimental Personality Research. 9, 89-148.
- Craig, R.
1979a Personality characteristics of heroin addicts: A review of the empirical literature with critique-Part I. International Journal of the Addictions. 14, 513-532.

- Craig, R.
1979b Personality characteristics of heroin addicts: A review of the empirical literature with critique-Part II. International Journal of the Addictions. 14, 607-626.
- Epstein, S.
1979 The stability of behavior I: On predicting most of the people much of the time. Journal of Personality and Social Psychology. 37, 1097-1126.
- Epstein, S.
1980 The stability of behavior II: Implications for psychological research. American Psychologist. 35, 790-806.
- Fillmore, K.
1975 Relationships between specific drinking problems in early adulthood and middle age. Journal of Studies on Alcohol. 42, 409-417.
- Jessor, R.
1979 Marijuana: A review of recent psychosocial research. In R. Dupont, A. Goldstein, and I. O'Donnell, eds., Handbook on Drug Abuse. Washington, DC: U.S. Government Printing Office.
- Jessor, R. and Jessor, S.
1975 Adolescent development and the onset of drinking. Journal of Studies on Alcohol. 36, 27-51.
- Jones, M.C.
1968 Personality correlates and antecedents of drinking, drinking patterns in adult males. Journal of Consulting and Clinical Psychology. 321, 2-12.
- Kandel, D., ed.
1978 Longitudinal Research on Drug Use: Empirical Findings and Methodological Issues. Washington, DC: Hemisphere Publishing Company (Halstead of Wiley).
- Kellam, S., Ensminger, M., and Simon, M.
1980 Mental health in the first grade and teenage drug, alcohol and cigarette use. Drug and Alcohol Dependence. 5, 273-304.

- Lang, A.R.
1983 Addictive personality: A viable construct? In P.K. Levison, D.R. Gerstein, and D.R. Maloff, eds., Commonalities in Substance Abuse and Habitual Behavior. Lexington, MA: Lexington Books.
- Lettieri, D., Sayers, M., and Pearson, H.
1980 Theories on Drug Abuse: Selected Contemporary Perspectives. NIDA Research Monographs #30. Rockville, MD: National Institute on Drug Abuse.
- Loper, R., Kammeier, M., and Hoffman, H.
1973 MMPI characteristics of college freshman males who later became alcoholics. Journal of Abnormal Psychology. 82, 159-162.
- MacAndrew, C.
1981 What the MAC tells us about alcoholic men: An interpretive review. Journal of Studies on Alcohol. 42, 604-625.
- Matarazzo, J.
1978 The interview: Its reliability and validity in psychiatric diagnosis. In B.B. Wolman, ed., Clinical Diagnosis of Mental Disorders: A Handbook. New York: Plenum Press.
- Megargee, E.I.
1982 Screening Army Enlistees to Identify Individuals With Potential Substance Abuse Problems. Paper prepared for the Committee on Substance Abuse and Habitual Behavior, National Research Council, Washington, DC.
- Mischel, W.
1977 The interaction of person and situation. In D. Magnusson and N. Endler, eds., Personality at the Crossroads. New York: Halstead.
- Owen, P. and Butcher, J.
1979 Personality factors in problem drinking: A review of the evidence and some suggested directions. In R. Pickens and L. Heston, eds., Psychiatric Factors in Drug Abuse. New York: Grune and Stratton.
- Pihl, R., and Spiers, P.
1978 The etiology of drug abuse. In B. Maher, ed., Progress in Experimental Personality Research (Vol. 8). New York: Academic Press.