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CLINICAL SUPPLEMENT
to the
MANUAL for the DIMENSIONAL ADDICAUS QUESTIONNAIRE

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Statement: The opinions and views stated here are those of the author. They do not intend to represent the views of the Ontario Ministry of the Solicitor General and Correctional Services, nor of the Ontario Correctional Institute where the data used here were collected.

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INTRODUCTION

The Manual for the Dimensional ADDICAUS Questionnaire (DAQ) (Quirk, 1996) contains the basic psychometric information required to use the instrument to obtain measures. Of necessity, the Manual is rather cryptic in its presentation. This means that it omits information that might be helpful in specific applications of the device. This Supplement is intended to provide some additional information about uses of the DAQ in characterizing the nature of addictions, and in deriving treatments and measuring subsequent changes in the person.

This Supplement is not intended to function as a book (see Quirk and Reynolds, 1996). It does not contain a discourse on theory nor elaboration of the thinking underlying the test itself. Instead, it offers specific information about two experiments. First, it presents a series of snapshots to characterize various aspects of addictive behaviour. The characterizations include snapshots (regression equations) to represent exclusive and inclusive users of specific substances, classes of substances, and accessory attributes of addictive behaviour. Second, it presents a brief account of a study to demonstrate the construct validity and precision (reliability) of the instrument. The study illustrates and demonstrates the process by which treatments were designed to address the identified 'causes' of addictions, and by which effects of treatment were evaluated.

CLINICAL APPLICATIONS I: ADDICAUS

Although the ADDICAUS Manual demonstrates that adequate levels of prediction (relationship and classification) have been achieved, it remains unclear whether the ADDICAUS axes can be used in clinical applications to identify causes of addictive behaviour and to guide and evaluate treatment. The first section of this Supplement on clinical applications sets out to discover whether

the ADDICAUS axes can be combined to derive meaningful ways to characterize the causes of various types of addictive behaviour. It is necessary to begin by setting part of the stage.

Accessory Variables

Addictions are not solely defined by the chemical substances employed, nor are they represented completely by the causal factors acting within the individual addict. If they were, the utilization indices (Years of use, strength of Use, time Off use and present Want -- see last page of the test form, Appendix A) for various kinds and combinations of chemicals, and the causal indices (S, N and Z scores) from an instrument such as the ADDICAUS, might account fully for addictive behaviour. In addition to utilization and causal indicators, there are various accessory variables or factors that may become integral parts of addictive behaviour.

Inquiry followed by careful consideration led to the conclusion that limitations in respondents' 'insight' would not permit dependable information concerning these 'accessory issues' to be obtained directly by means of test questions. Consequently, another approach to measurement of the accessory variables was sought. It seemed possible that the information acquired about substance utilization might be adapted to provide measures of some of these accessory variables. Accordingly, although acknowledging that there will be major jurisdictional (and even psychologist) differences to reduce their value, expressions were constructed from the utilization (Years and Use) information to represent the role of some accessory independent and/or dependent attributes of addictions, as follows:

1. Substances (Dependent Variables):

(a) Specific Substances: Each of the following was considered separately as an inclusive use expression from the product of Years X Use: Beer, Brandy, Home Brew, Gin or Vodka, Rum, Rye, Scotch, Wine, Cigarettes, Cocaine, Crack, Glue, Hashish, Heroin, LSD, Marijuana, Morphine, Mushrooms, Opium, PCP, Peyote, Speed, Pain remedies, and Tranquillizers.

(b) For those specific substances used exclusively within their classes ('X') of substances by a sufficient number of ADDICAUS sample subjects [Ns > 9], exclusive use variables were computed for X-Beer [N=15], X-Brandy [N=67], X-Wine [N=170], X-Cigarettes [N=10], X-Heroin [N=26], X-Marijuana [N=40] and X-Pain medications [N=67].

(c) Classes of Substances: Each of the following classes of substances was considered separately: exclusive use of Alcohol [N=91](if no drugs were reported), exclusive use of street Drugs [N=109](if no alcohols were reported), exclusive use of Alcohol or Drugs [N=50](if no medications other than pain

relievers were reported), and exclusive use of Medications [N=80](if no alcohol or street drugs were reported).

2. Paraphernalia:

Paraphernalia tend to accumulate over time of use of some substances. Accordingly, Years of use was employed as the source in the selection of the subject group involved, as follows: X-Paraphernalia = Years(Cigarettes + Crack + Hashish + Heroin), IF: Years(Coffee + Cola + Mushrooms + Ritalin) < 1.

3. Availability:

Availability was estimated for the recent local scene from the following Use reports: X-Availability = Use(Beer + Rye + Coffee + Cigarettes + Marijuana), IF: Use(Home Brew + Heroin + Morphine + Mushrooms + Peyote) < 1 [ADDICAUS sample N = 88]

4. Mode of Use:

X-Ingested = Use(Beer + Rye + Wine + Mushrooms + Pain Meds + Valium + Other Tranquillizers), IF: Use(Cigarettes + Cocaine + Crack + Hashish + Heroin + Marijuana + Morphine + Opium) < 1 [ADDICAUS sample N = 88]

X-Inhaled = Use(Cigarettes + Cocaine + Hashish + Marijuana + Opium), IF: Use(Beer + Rye + Wine + Pain Meds + Valium + Crack + Heroin) < 1 [ADDICAUS sample N = 18]

X-Injected = Use(Crack + Heroin + Morphine + Speed), IF: Use(Cigarettes + Pain Meds + Valium + Hashish + Marijuana + Opium) < 1 [ADDICAUS sample N = 13]

5. Setting:

Since 'settings' tend to be 'habitual', Years of use was used to construct both a continuous and a 3-class categorical expression from relative amounts of four groups of substances, as follows: X-Setting = [1 if..] Years(Cigarettes + Pain Meds + Valium) < Years(Beer + Coffee + Marijuana) [Value entered if condition met], or X-Setting = [2 if..] Years(Beer + Coffee + Marijuana) < Years(Crack + Hashish + Opium) [2XValue entered if condition met], or X-Setting = [3 if..] Years(Crack + Hashish + Opium) < Years(Cocaine + Heroin + Morphine) [3XValue entered if condition met]. A better mathematical expression could have been chosen, such as non-linear regression, but the social isolation involved would be less readily understood.

6. Lifestyle Effects:

Although difficult to express meaningfully relative to others, some substances involve or demand considerable investments in lifestyle changes. For example, the costs of maintaining some habits seem to force addicts into criminal lifestyles. A pair of continuous and categorical expressions were calculated to express this as follows: X-Lifestyle = [1 if..] Years(Beer + Coffee + Valium) < Years(Cigarettes + Marijuana + Uppers) [Value entered if condition met], or X-Lifestyle = [2 if..]

Years(Cigarettes + Marijuana + Uppers) < Years(Speed + Hashish + Peyote) [2XValue entered if condition met], or X-Lifestyle = [3 if..] Years (Hashish + Peyote + Speed) < Years (Cocaine + Crack + Heroin) [3XValue entered if condition met].

7. Perceived Strength:

An attempt was made to be too over-inclusive here, so that the expression was constructed to address (i) anticipated rapidity of effect (although Mode of Use handles this better), (ii) believed intractability of addiction to substances, and (iii) imagined social potency of the user. The result from the following was not expected to behave too well: X-Strength = Years(Cocaine + Crack + Heroin + Narcotics + Rum + Rye + Scotch), IF: Years(Coffee + Cola + Marijuana + Hashish + Uppers + Downers + Wine) < 1. [N = 20] Alcohols were included to distinguish this from relevance-to-law variables below. Of course, there will be very real jurisdictional and personal definitional differences on this and several other variables.

8. Relevance to Law

X-Compromise Law = Years(Cocaine + Crack + Heroin + Morphine + Narcotics + Opium), IF: Years(Barbiturates + Pain Meds + Glue + Speed + Home Brew + Rye) < 1 [ADDICAUS sample N = 26]

X-Legal Severity = Use(Cocaine + Crack + Heroin + Morphine + Narcotics + Opium), IF: Use(Barbiturates + Pain Meds + Glue + Speed + Home Brew + Rye) < 1 [ADDICAUS sample N = 42]

9. Purposes of Use:

X-Accompaniment = Years(Cigarette + Chocolate + Coffee + Cola + Gin-Vodka + Wine), IF: Years(Brandy + Cocaine + Crack + Heroin + Uppers + Valium) < 1 [ADDICAUS sample N = 78]

X-Activation = Use(Chocolate + Coffee + Crack + LSD + Speed + Uppers), IF: Use(Brandy + Heroin + Morphine + Opium + Downers + Narcotics) < 1 [ADDICAUS sample N = 82]

X-Different Experience = Years(Barbiturate + Gin-Vodka + Heroin + LSD + Peyote), IF: Years(Beer + Rye + Cigarettes + Cocaine + Marijuana) < 1 [ADDICAUS sample N = 72]

X-Disinhibition = Use(Rye + Scotch + Crack + LSD + Speed), IF: Use(Brandy + Home Brew + Hashish + Marijuana + Opium) < 1 [ADDICAUS sample N = 30]

X-Dreams = Use(Hashish + LSD + Mushrooms + Opium + Peyote), IF: Use(Cocaine + Crack + Marijuana + Morphine + Narcotics) < 1 [ADDICAUS sample N = 41]

X-Experience Enhancement = Years(Chocolate + Beer + LSD + Opium + Peyote), IF: Years(Cola + Rye + Heroin + Morphine + Narcotics) < 1 [ADDICAUS sample N = 60]

X-Mellow = Years(Beer + Hashish + Marijuana + Opium + Valium + Other Tranquillizers), IF: Years(Coffee + Cola + Cigarettes

+ LSD + Speed + Uppers) < 1 [ADDICAUS sample N = 76]

X-Opiate = Use(Heroin + Morphine + Opium + Downers + Narcotics), IF: Use(Coffee + Crack + LSD + Speed + Uppers) < 1 [ADDICAUS sample N = 80]

X-Tranquillity = Use(Downers + Valium + Other Tranquillizers + Marijuana + Opium), IF: Use(Cigarettes + Coffee + LSD + Speed + Uppers) < 1 [ADDICAUS sample N = 70]

10. Psychological Mindedness/Defensiveness

Mostly out of curiosity, a variable was created by summing across substances the total number of explanations or reasons (causes and effects) that had been requested on the third last page of the ADDICAUS form. These had been called the Z scores. Whether they represent the degree of psychological mindedness of the subject, or his/her defensiveness, or justifications, or nothing at all is unclear. However, a new score was computed as: Defensiveness = Sum(Z).

Processing the Data

In the foregoing, several variables were defined that ought to be relevant to addictiveness directly or in accessory ways. These variables were processed for analysis through several steps.

(1) In addition to the distributed variables (prefix 'X'), but not including the specific substances (1a) where numbers were too low for exclusive use processing, a categorical variable was created for each substance, class and attribute to identify the exclusive use subjects and to contrast them against approximately equal numbers of other subjects chosen from the remaining ADDICAUS sample at random. These new variables are identified with a prefix 'XC' (represents an exclusive use categorical variable -- 1b, 1c).

(2) Separately for the S and N axis scores from the ADDICAUS test, step-wise discriminant function analyses were run for each 'XC' variable to identify the ADDICAUS variables that together best classified each substance's exclusive users.

(3) The variables identified in the discriminant analyses were entered to obtain their regression weights from multiple regression analyses seeking to predict the continuous exclusive use ('X') substance or attribute variables.

(4) New regression equation expressions were constructed from the regression weights. In these equations the coefficients were rounded to one decimal place and the constants were omitted. This was done due to obvious risks of sample bias, and because it is clear that ADDICAUS does not identify all the causes of addictive behaviour.

(5) Using the new expressions created from the regression equations, anovas were run for each 'XC' variable. This was

done to confirm whether the thus derived ADDICAUS variable combinations significantly identify uses of the various kinds of substances and attributes of addictive behaviour.

Basic Results of Analyses

The ADDICAUS variables combined as above significantly predicted all of the exclusive use (XC) variables except for the Availability score. It was particularly important that the regression equations for the ADDICAUS variables successfully predict, as they did, the constructed 'purpose' variables since one of the primary aims of the ADDICAUS test was to identify purposive (final cause) elements in addictive behaviour. Of course, the performance of the ADDICAUS-derived equations in predicting specific and general substance uses would be even more important. Consequently, it was fortunate that the equations constructed to predict the continuous substance use variables with ADDICAUS S and N axes significantly predicted the categorical exclusive and/or inclusive use variables for all of the substances investigated.

Variables and Loadings

The purposes of the above exercise were to identify variables that might profitably be addressed in treatment of addictions, and to determine the relative importance that ought to be assigned to each in developing addictions treatments. The achievement of these purposes now appears to be within reach. The regression equations for each addiction variable along with their regression weights ought to provide the information required.

It seems fair to say that the regression equations shown below provide an, albeit slightly blurred, snapshot of the causation of all sorts of variables of addiction. Indeed, they do seem to permit capsule understandings of much addictive behaviour.

ALCOHOLS USES

Exclusive use of any substance should, in principle, pull on reinforcement axes over need axes. Exclusive use of BEER performs as expected ($R_f+rf:N_d+sD = 6:5$) to a slightly greater extent than the inclusive use of beer ($R_f+rf:N_d+sD = 5:9$). This observation is intended to say that the reinforcement consequences of a specific substance ought to be the factors that select it for exclusive use, while the need pressures acting in the person would likely decide its inclusive use. This statement needs to be contrasted with an observation (Quirk & Reynolds, 1997) that generic use of a class of substances seems to pull mainly on reinforcement issues (R_f, rf).

Beer, Exclusive Use

$$\begin{aligned} X\text{-BEER} = & - 1.9(45S) + 1.5(39S) - 0.9(32S) + 0.9(12S) - \\ & 0.5(44S) + 1.1(32N) + (19N) - 0.8(52N) + 0.2(52S) - \\ & 0.7(39N) + 0.7(50N) - 0.6(65N) - 0.2(60N) + 0.1(49N) \end{aligned}$$

18SN: Nd Self Enhancement 17S: sD Grief Reaction
19S: sD Pain Sensitivity 29S: rf Disturbed Emotions
04SN: Nd Stimulus Hunger 14S: Nd Vivid Images
55SN: rf Impaired Self Esteem 63SN: Rf Avoid Boredom
37SN: sD Failure Experiences 20N: Rf Hedonism
10N: Nd Social Contact 54N: Nd Hungry Heart
36N: sD Rigid Moralizations 39N rf Effort Strain [p: .02]

Characterization: The operative needs might include self aggrandizement (18) and feeling special in exaggerated stories (14) to compensate for a sense of failure (37) and feeling put down (55), having fun socially (04, 20, 10) to distract from pain (19) or grief (17), from upset emotions (29), from boredom or depression (63) and from the need to do something in the face of loneliness (54), being with friends (10, 54) with their confirmation of rigid attitudes (36), and the sense of need to relax or 'veg out' in the face of felt pressures.

Treatments might include: Creating Flexibility, Creating Excitement, Goal-Finding (A and D goals), Values Training, Reciprocal Inhibition Therapy, Rational-Emotive Therapy and Grief Therapy.

Examination of accessory information reveals that, in its exclusive use, BEER is perceived as possessing relative 'strength' as a substance. Perhaps this is due to the amount of consensual validation it tends to receive in conversations among beer users. Also, exclusive use seems to serve the purpose of self-enhancement more than anything much else that was measured.

It may be that this latter observation is due to its inclusive use effect as a significant disinhibitor and activator in groups, as BEER also serves the purpose of accompaniment associated with setting and lifestyle features. Inclusive use also allows it to function as a medication, perhaps to achieve the tranquillizing and mellowing effects that are also related significantly to it.

Only seven subjects used HOME BREW exclusively. Consequently, only the inclusive use can be assayed. Again, the need pressures seem to operate quite strongly (ratio: 11:9) in inclusive use. The only accessory features that seem to characterize home brew use are the purposes of achieving tranquillity and sleep (opiate).

While intuitively one might think that HOME BREW use would be found mainly among isolates or family-focused people, the axes

loading with home brew show a surprising concern with social involvements, communication needs and subcultural values. This suggests that the 'home brew culture' may be one involving a lot of pride or preoccupation in home brewing, and in talking about it.

HOME BREW seems to be used by people who are not comfortable relying on others -- perhaps as sources of access to dependency or addictive substances. Another interesting feature of home brew users is their restless energy. This seems counter-intuitive until Home Brew, Inclusive Use

$$\begin{aligned}
 G\text{-HOME BREW} = & 1.6(22S) - 1.2(54S) - 0.8(02S) + 0.8(68S) - \\
 & 0.6(04S) + 0.6(06S) + 0.6(48S) - 0.5(32S) + \\
 & 0.5(55S) + 2(29N) - 1.4(48N) - 1.3(22N) - \\
 & 0.4(15S) - 0.3(17S) + 0.9(04N) - 0.2(58S) + \\
 & 0.8(02N) - 0.8(10N) - 0.8(34N) - 0.6(47N) + \\
 & 0.4(32N) - 0.4(14N) - 0.2(50N) - 0.2(20N) + \\
 & 0.1(37S) - 0.1(37N) \quad [p: .01]
 \end{aligned}$$

22SN: sD Subcultural Values	54S: Nd Hungry Heart
02SN: Rf Social Enjoyment	68S: Nd Substance Dependency
04SN: Nd Stimulus Hunger	06S: Nd Social Influence
48SN: Rf Punitive Rewards	32SN: Rf Group Satisfaction
55S: rf Impaired Self Esteem	29N: rf Disturbed Emotions
15S: Rf Control Effort	17S: sD Grief Reaction
58S: Nd Communication	10N: Nd Social Contact
34N: Nd To Be Different	47N: rf Physiological Anxiety
14N: Nd Vivid Images	50N: Rf Control Sensitivity
20N: Rf Hedonism	37SN: sD Failure Experiences

it is noticed that home brewing requires a fair amount of activity in preparing the substance and, perhaps, something with which to preoccupy attention and thought. Another feature of HOME BREW users is an effort to maintain 'control' over their own lives and destiny -- perhaps associated with self-sufficiency even in access to addictive substances and in addictive behaviour. At least for

Characterization: Operative needs might include values of a particular subculture (22), the need to do something about loneliness (54), something to talk about socially (02), non-reliance on others as a source of dependency substances (68), need for something to do to use up restless energy (04), a reliance on others to obtain information (06) and to afford a community of brewers (32), pride in accomplishment to deal with impaired self esteem (55) and a history of feeling criticized (48), a need to feel 'cool' and be 'in control' of

own life (15) perhaps to cope with distress and upset (04, 29) or grief (17) or discomfort (47), a need for socialization and communication (10, 58) perhaps to exaggerate a bit (14) and to feel luxurious (20) to compensate for a sense of failure (37).

Treatments might include: Creating Values, Creating Success, Creating Excitement, Creating Satisfaction, Reciprocal Inhibition Therapy, Grief Therapy and Time-Line Therapy.

this substance, the needs and the conditions for substance use seem to be coherent with one another.

The same primacy effect of reinforcers is noted in exclusive use of BRANDY, while inclusive use seems to be driven mainly by need states. Accessory data suggests that brandy functions as a drug for its users, apparently relieving some kinds of 'pain'. It seems to be associated with a characteristic (isolated) lifestyle, and serves such purposes as activation or arousal, enhancement of experiences and to foster dreams.

Brandy, Exclusive Use

$X\text{-BRANDY} = - (35S) + 0.8(45S) + 0.4(03S) + 0.1(13N)$ [p: .00]
35S: rf Self Depreciation 45S: rf Hypoglycaemia
03S: sD Reactive Depression 13N: sD Flat Depression

Characterization: The reinforcers might include a 'sugar fix' (45), relief of high stress and depressive feelings (03, 13), feeling important in ruminative self depreciation and in feeling depressed (35, 13). It might be worthwhile to note that self depreciation is usually a product of exaggerated expectations from the self, commonly associated with trained (self) critical faculties, that flat depression is commonly induced by introversive rumination and its often attendant expectation of perfection (ideals) in self and others, and that both generate stress such that stress resources can readily be depleted eventuating in reactive depressions.

Treatments might include: Reciprocal Inhibition Therapy, Values Training, Transcendental Meditation, Conflict Management Training and Hypoglycaemia diet.

The picture of a BRANDY user that emerges from the loading axes is close to one of a slightly dour and dogmatic individual, who feels hard-done-by and who suffers from physiological anxiety sensations and loneliness. Mood is likely depressed, and time may be spent wishing for power, recognition or importance. In general, the picture is likely to be based on strong introverted trends with its heavy verbal mediation of experience, leading to the formation of 'ideals', and thus perfectionism, that leaves the person in a

Brandy, Inclusive Use

$$\begin{aligned}
 \text{G-BRANDY} = & 3.4(44\text{S}) + 1.7(47\text{S}) - 1.1(48\text{S}) + 0.7(33\text{S}) - \\
 & 0.6(54\text{S}) - 1.7(20\text{N}) - 1.1(47\text{N}) - 0.3(10\text{S}) - \\
 & 0.9(35\text{N}) - 0.2(37\text{S}) + 0.2(32\text{S}) - 0.7(50\text{N}) - \\
 & 0.5(33\text{N}) - 0.5(32\text{N}) + 0.4(37\text{N}) + 0.2(22\text{S}) + \\
 & 0.1(54\text{N}) + 0.1(22\text{N}) \quad [p: .02]
 \end{aligned}$$

44S: Nd Fast Lane Living	47SN: rf Physiological Anxiety
48S: Rf Punitive Rewards	33SN: rf Dogmatism
54SN: Nd Hungry Heart	20N: Rf Hedonism
10S: Nd Social Contact	35N: rf Self Depreciation
37SN: sD Failure Experiences	32SN: Rf Group Satisfaction
50N: Rf Control Sensitivity	22SN: sD Subcultural Values

Characterization: The need pressures operating to select brandy use as a part of addictive behaviour might include the use of a luxury item (44) which is sensuously employed (20), at least as it is conceived in certain circles (22), to compensate for the pains of upset and distress (47), lonely feelings (54), a sense of having been criticized excessively (48, 37). The latter would commonly lead to rumination and the development of ideals, high expectations and perfectionism (35) and thus (mediated by a verbally construed world) to rigid beliefs and attitudes (33). The social contact need and group satisfaction (10, 32) seen here likely represent an intensified sense of loneliness (54).

Treatments might include: Creating Success, Creating Values, Creating Health, Creating Satisfaction, Creating Excitement and Anti-Introversion Training.

Wine, Exclusive Use

$$\text{X-WINE} = - 1.5(36\text{S}) + 1.4(31\text{S}) + 2.9(35\text{N}) + 2.7(14\text{N}) -$$

$$2.4(23N) - 0.5(08S) - 0.4(47S) + 0.4(50S) - 0.7(31N) \\ - 0.6(19N) + 0.4(08N) - 0.2(50N) + 0.1(47N)$$

36S: sD Rigid Moralizations 31SN: Nd Put Down Others
 35N: rf Self Depreciation 14N: Nd Vivid Images
 23N: Nd Dependency Inhibition 08NS: Rf Guilt Intolerance
 47SN: rf Physiological Anxiety 50SN: Rf Control Sensitivity
 19N: sD Pain Sensitivity [p: .00]

chronic state of dissatisfaction and disappointment. The person is likely to depend strongly on rationality and to consider him/her self to be sensitive, sophisticated and dogmatic.

The surprising picture of the WINE user that emerges is one of a relatively rigid, defensive person who is anxiously sensitive and who is inclined to seek self enhancement at the expense of others. Perhaps the hedonism is not unexpected, but it seems to be reactive to a rather unhappy temperament, possibly associated with a rather 'empty' feeling within, deriving from inhibited dependency needs. The appearance of guilt intolerance in exclusive wine use suggests that anger too might be inhibited, thus enhancing the probability that the physiological anxiety present may, in this instance, represent hypochondriasis.

Compared with the previously described substance users, overt needs are probably less apparent in our WINE users as drivers of inclusive use, and defenses (creating derived needs) seem more

Characterization: The operative reinforcers might include the enhancement of experiences such as eating (14) and the sense of self-importance often associated with ruminative bitterness about pain (19) and distress (47), which themselves may well be fostered by the damping effect on joyful experiences arising from rumination about rejection by others (23, 31), perceived 'guilt trips' by others (08, 50) and depreciation of self (35).

Treatments might include: Creating Flexibility, Creating Satisfaction, Creating Innocence, Enjoying Guilt and Reciprocal Inhibition Therapy.

involved. It may be that the criminality of our WINE users altered the picture in our exclusive use subjects from that of seeking reinforcements to one of seeking defensive self enhancement and expansiveness. Or it may be that a general characterizing feature of wine users is defensiveness of a fairly complex nature. For

example, it may be that the apparent aesthetic appreciation of some wine tasters may serve in place of genuine emotional experience. Certainly, in inclusive use, our wine drinkers seem to load very strongly in their needs for self enhancement and for external sensory experience as drivers of feelings and to compensate for negative feelings.

Accessory observations paint exclusive and inclusive WINE users as using wine as a disinhibiting agent (perhaps for social involvement) and as an activator or arousing agent. The results support the notion that WINE often serves the purpose of an

Wine, Inclusive Use

$$\begin{aligned}
 G\text{-WINE} = & 1.9(18S) - 1.5(11S) - 1.5(24S) + 1.3(37S) - 1.1(03S) \\
 & - 0.8(17S) + 0.7(60S) - 2.1(02N) + 0.7(20S) + 0.5(55S) \\
 & + 0.4(53S) + 0.4(47S) - 1.6(39N) - 1.3(20N) - 1.2(24N) \\
 & - 0.9(57N) - 0.9(03N) - 0.9(18N) + 0.2(23S) - 0.5(47N) \\
 & + 0.4(50N) + 0.2(37N) - 0.2(17N) + 0.1(60N) + 0.1(41N) \\
 & - 0.1(53N) \quad [p: ,00]
 \end{aligned}$$

18SN: Nd Self Enhancement 11S: Rf Reality Denial
 24SN: Rf Immediate Gratification 37SN: sD Failure Experiences
 03SN: sD Reactive Depression 17SN: sD Grief Reaction
 60SN: Nd Substance Enhancement 02N: Rf Social Enjoyment
 20SN: Rf Hedonism 55S: rf Impaired Self Esteem
 53SN: rf Somatic Depression 47SN: rf Physiologic Anxiety
 39N: rf Effort Strain 57N: rf Felt Rejection
 23S: Nd Dependency Inhibition 50N: Rf Control Sensitivity
 41N: sD Rigid Habits

Characterization: Operative needs might include a strong need for self enhancement or aggrandizement (18, 11, 60) and a careless enjoyment of the present (24, 60, 20, 02) to compensate for a sense of failures (37), impaired self esteem (55), loss and felt rejection (17, 57), bodily distress (53, 47) and distress and despair (03). Presumably, part of the underpinnings of the negative states lies in personal rigidity (41) and an unwillingness to relate closely to others (23).

Treatments might include: Creating Excitement, Creating Satisfaction, Goal-Finding (D goals), Values Training, Assertive Training, Reciprocal Inhibition Therapy, Grief Therapy and Transcendental Meditation.

accompaniment (as with food). But WINE is apparently also used as a medicating agent to achieve a tranquillized or mellow state, or to serve as an opiate.

Self-protective needs seem to drive inclusive use of GIN OR VODKA. The picture seems to be of a person striving for upward mobility and to create an impression on others, perhaps only partly as a compensatory effort. A sense of failure in the history seems to be more marked here than with the users of other alcohols.

Like most of the other kinds of alcohol, the tranquillizing effect or function of GIN OR VODKA stands out among the accessory

Gin/Vodka, Inclusive Use

$$\begin{aligned} G\text{-GIN/VODKA} = & - 2.7(17S) - 2.3(39S) + 1.6(18S) + 1.2(37S) + \\ & 1.1(56S) + (61S) + 0.8(24S) + 0.6(36S) - \\ & 2.1(24N) + 1.4(39N) - 1.1(18N) - (48N) + \\ & 0.2(22S) - 0.4(56N) + 0.4(22N) - 0.3(37N) - \\ & 0.1(47N) \quad [p: .00] \end{aligned}$$

17S: sD Grief Reaction 39SN: rf Effort Strain
18SN: Nd Self Enhancement 37SN: sD Failure Experiences
56SN: sD Masked Disappointment 61S: Nd Forget Failures
24SN: Rf Immediate Gratification 36S: sD Rigid Moralizations
48N: Rf Punitive Rewards 22SN: sD Subcultural Values
47N: rf Physiological Anxiety

Characterization: The needs which drive gin or vodka use might include drowning grief (17), respite or withdrawal from felt pressures (39), relief from a sense of failure (37) and of receiving much criticism (48), forgetting disappointments (56) and failures (61) and soothing physiological distress (47), perhaps by immediate (24) self enhancement (18) and, in use of other substances, participation in counter cultures (22).

Treatments might include: Creating Success, Enjoying Failure, Creating Values, Creating Flexibility, Creating Excitement, Creating Satisfaction and Time-Line Therapy.

observations. GIN OR VODKA, like the other 'hard' liquors, serve an opiate function, as well as serving as accompaniments and activators. It may be their tranquillizing or opiate effects that also allow GIN OR VODKA and the other 'hard' liquors to function as if they were medications.

Again, needs are apparent in driving inclusive use of RUM.

Here there is also some stress and arousal from upset emotions to form part of the driver. Still, some of the latter (eg., Anger/ Hostility, Easy Going Enjoyment and/or Need for Different Experiences) may derive from the criminality in our sample.

Accessory significant factors are essentially the same as those found with gin/vodka, although the opiate effect is less clear with RUM. There is a sense of frustration and discomfort in the picture found of the drivers of RUM use.

Rum, Inclusive Use

$$G\text{-RUM} = 2.2(06S) - 1.6(39S) + 1.4(46S) + 1.3(37S) + 1.1(60S) - 0.7(52S) - 2.6(29N) - 1.9(24N) - 0.4(42S) + 0.4(36S) - 1.4(46N) + 0.7(39N) + 0.7(52N) + 0.6(22N) - 0.5(42N) - 0.2(62N) - 0.1(37N) + 0.1(32N) \quad [p: .00]$$

06S: Nd Social Influence 39SN: rf Effort Strain
 46SN: rf Allergy Stress 37SN: sD Failure Experiences
 60S: Nd Substance Enhancement 52SN: Rf Anger/Hostility
 29N: rf Disturbed Emotions 24N: Rf Immediate Gratification
 42SN: Rf Easy Going Enjoyment 36S: sD Rigid Moralizations
 22N: sD Subcultural Values 62N: Nd Different Experiences
 32N: Rf Group Satisfaction

Characterization: The operative needs might include that for immediate gratification (24) through social contact (32), a good time (42), others' approval (06), respite in the face of felt pressures (39), self enhancement (60) and novel experiences (62), to dispel strain (39), stressors (46), a sense of past failures (37), disturbed emotions (29) which, perhaps mediated by rigid attitudes (36), involve some anger or hostility (52).

Treatments might include: Goal-Finding (A and D goals), Creating Flexibility, Creating Excitement and Creating Values.

RYE behaves in essentially the same way as the other 'hard' liquors. It may be perceived more strongly as a 'mellowing' agent than the others, and it seems to function better as a disinhibiting Rye, Inclusive Use

$$G\text{-RYE} = - 1.9(17S) + 1.8(22S) + 1.4(64S) - 1.3(53S) + 0.8(37S) + 0.6(33S) + 0.5(54S) - 1.9(02N) - 0.9(33N) - 0.8(22N)$$

- 0.8(24N) + 0.8(53N) - 0.3(48N) - 0.3(37N) [p: .00]
 17S: sD Grief Reaction 22SN: sD Subcultural Values
 64S: Nd Assert Confidence 53SN: rf Somatic Depression
 37SN: sD Failure Experiences 33SN: rf Dogmatism
 54S: Nd Hungry Heart 02N: Rf Social Enjoyment
 24N: Rf Immediate Gratification 48N: Rf Punitive Rewards

Characterization: Operative needs might include immediate gratification (24) in social contacts (02) by appearing confident and being assertive (64), perhaps to the extent of being dogmatic (33), in order to cope with loss (17), somatic depression (53) and loneliness (54), and to compensate for a sense of failure (37) and of having been criticized much (48).

Treatments might include: Grief Therapy, Reciprocal Inhibition Therapy, Creating Success, Creating Excitement, Creating Values and Assertive Training.

agent. Otherwise, as with the others, inclusive use appears to be driven largely by need pressures often generated by negative and debilitating feelings.

SCOTCH behaves in a somewhat different way from the other 'hard' liquors. Although it may function as a disinhibiting agent, perhaps fuelled by the Oppressive Inhibitions that load on it, it does not seem to be used for purposes of enhancement, mellowing or

Scotch, Inclusive Use

G-SCOTCH = - 2(34S) + 1.9(37S) + 1.2(44S) - 0.9(26S) -
 0.6(53S) + 1.9(33N) + 0.4(24S) - 1.5(37N) +
 0.8(13N) - 0.5(27N) + 0.3(26N) + 0.3(53N) -
 0.2(15N) + 0.1(52N) [p: .08]

34S: Nd To Be Different 37SN: sD Failure Experiences
 44S: Nd Fast Lane Living 26SN: rf Rationality Defence
 53SN: rf Somatic Depression 33N: rf Dogmatism
 24S: Rf Immediate Gratification 13N: sD Flat Depression
 27N: Rf Oppressive Inhibitions 15N: Rf Control Effort
 52N: Rf Anger/Hostility

Characterization: Operative needs might include the need angrily (52) to break free from felt, self-induced inhibitions which feel oppressive (27), but which are felt to be incapable

of relief, so that the person feels the need to be different and to do different things (34), perhaps including creating external stimuli to feel he/she is in the 'fast lane' (44). The inhibitions are likely derivative of over-control (15) and excessive rationality and rationalizations (26) to support dogmatic views (33). The surface may seem depressive (53).

Treatments might include: Creating Health, Creating Excitement, Rational-Emotive Therapy, Affective Responses Training, Divergent Thinking, Media Proofing, Assertive Training, Transcendental Meditation and Fair Witness Training.

as an opiate. Still, it may have some calming effect -- but this is not referred to here as a tranquillizing effect since, unlike the other 'hard' liquors, it does not seem to function as a medication.

The things that make SCOTCH stand out from the other 'hard' liquors, in addition to the foregoing, are the inclusion of some inhibitive and rationality traits that do not appear with the other 'hard' liquors. The picture emerging from the inclusive use of SCOTCH, in this sample, is one of a moody, brittle and inhibited person who has a strong need to feel different from others.

Exclusive use of ANY kind of ALCOHOL seems to come down to rigidity of habits, and general needs to communicate, relax and to cope in the face of depression. There are few significant accessory factors, including only the setting of use (bars?) and isolating effects upon lifestyle. However, the generic alcoholic probably also shares qualities associated with his/her preferred drinks, which might need to be addressed in treatment in addition to any treatment of generic alcoholism (which involves quite different drivers).

Any Alcohol, Exclusive Use

$$\begin{aligned} X\text{-ANY ALCOHOL} = & 1.4(41S) - 1.3(05S) - 4.1(41N) + 3.7(05N) + \\ & 1.8(58N) - 0.4(49S) + 0.3(67S) - 0.1(40S) + \\ & 0.1(13S) \end{aligned} \quad [p: .00]$$

41SN: sD Rigid Habits	05SN: sD Rigid Self Image
58N: Nd Communication	49S: Nd Avoid Affect
67S: Nd Relaxation/Calmness	40S: Rf Pep Up Effect
13S: sD Flat Depression	

Characterization: The operative reinforcers seem to support rigidity (41, 05) as if ambiguity intolerance lay at the root of general alcoholism. This view would be supported by the comfort achieved by avoiding feelings (49), the accomplishment felt in communication (58) and the rewarding effect of being calm and relaxed (67). The resulting inhibition of emotion (49), with its result in flat depression (13), may itself help the person to feel he/she 'stands apart' from others, but it also requires a means to create stimulation so that the pep up effect (40) can be rewarding.

Treatments might include: Creating Happiness, Reciprocal Inhibition Therapy (for ambiguity, uncertainty), Divergent Thinking, Affective Training and Natural Highs Training.

STREET DRUGS USES

Among the street drugs, HEROIN is listed first because it is considered an important drug, and because there is exclusive use information about it. The picture associated with exclusive use of HEROIN is that of an upset and needy person who feels isolated and anxious. In addition to the obvious associations to lifestyle and setting, HEROIN is seen to serve the purpose of helping the person feel different, and perhaps as an accompaniment for isolation -- that is, could isolation itself become a relapse trigger for HEROIN, or serve as a reward for HEROIN use? It also functions as a medication, although here perhaps mostly as an analgesic in the face of grief, allergy, social anxiety and/or metabolic disorder.

Heroin, Exclusive Use

$$\begin{aligned} X\text{-HEROIN} = & 4.5(57S) - 3.6(55S) - 3.3(17S) + 2.8(46S) + \\ & 2.6(08S) - 2.6(01S) - 2.3(14S) + 2(13S) - 1.9(62S) \\ & - 1.2(43S) - 1.1(21S) + 2.7(17N) - 2.1(40N) + 2(32N) \\ & - 1.8(13N) - 1.8(08N) - 0.4(49S) - 1.7(46N) + \\ & 1.4(19N) + 1.3(43N) + 1.3(23N) + 0.3(11S) + 1.1(49N) \\ & + 0.3(65N) \end{aligned}$$

[p: .02]

57S: rf Felt Rejection	55S: rf Impaired Self Esteem
17SN: sD Grief Reaction	46SN: rf Allergy Stress
08SN: Rf Guilt Intolerance	01S: rf Social Anxiety
14S: Nd Vivid Images	13SN: sD Flat Depression
62S: Nd Different Experiences	43SN: sD Metabolic Disorder
21S: rf Social Withdrawal	40N: Rf Pep Up Effect
32N: Rf Group Satisfaction	49SN: Nd Avoid Affect

19N: sD Pain Sensitivity
11S: Rf Reality Denial

23N: Nd Dependency Inhibition
65N: rf Avoid Attractiveness

HEROIN's inclusive use displays a picture similar to that for its exclusive use, with some variants in order and variables. This fact may be due to the probability that, whether or not other drugs are used, the user views his/her HEROIN use as the most engrossing, and at the same time the most problematic of his/her addictions. Certainly, rigidity, defensiveness and subcultural values figure somewhat more centrally in inclusive as compared with exclusive use. These features probably derive from the generality of addictiveness and from the person's additional social contacts

Characterization: Operative reinforcers might include those of social isolation (21) where fantasized (11) self-importance in group settings (32), themselves made important by social anxiety (01), can be entertained by generating intense images (14) of different experiences (62) to compensate for impaired self esteem (55), felt rejection (57), loss (17) and dependency inhibition (23), intensified by metabolic distress (43) and physiological stress (46). That much of this picture is associated with criminality is seen in the role of guilt intolerance (08) and the sensation-seeking (40), which is also demanded by the flat depression (13), itself partly resulting from affect avoidance (49) and dependency inhibition (23).

Treatments might include: Creating Innocence, Enjoying Guilt, Creating Happiness, Reciprocal Inhibition Therapy (criticism and social anxiety), Conflict Management Training, Grief Therapy and Transcendental Meditation.

arising from his/her other addictions. Moreover, the complex structures that develop from intra-psychic conflict are more clear in the picture of HEROIN use than was encountered in alcohol uses. The paradoxical nature of conflict requires paradoxical methods for intervention.

As expected, MORPHINE behaves very much like heroin. The only differences among the accessory indicators are that MORPHINE serves less than heroin for purposes of self enhancement, and more than heroin to foster dream-like states. MORPHINE'S inclusive use axes stand apart in calming disturbed 'nerves' and dealing with impaired

Heroin, Inclusive Use

$$\begin{aligned} \text{G-HEROIN} = & 2.2(08\text{S}) + 1.8(63\text{S}) + 1.8(43\text{S}) - 1.6(34\text{S}) + \\ & 1.4(37\text{S}) - 1.4(22\text{S}) - 1.1(36\text{s}) + 0.4(41\text{S}) + \\ & 0.4(49\text{S}) + 1.4(22\text{N}) + 1.2(35\text{N}) - 0.9(49\text{N}) - \\ & 0.2(06\text{S}) - 0.8(09\text{N}) - 0.7(37\text{N}) + 0.6(34\text{N}) - \\ & 0.2(47\text{S}) - 0.2(48\text{S}) + 0.6(48\text{N}) - 0.1(20\text{S}) - \\ & 0.5(17\text{N}) - 0.3(27\text{N}) - 0.3(55\text{N}) + 0.2(38\text{N}) + \\ & 0.1(36\text{N}) \quad \quad \quad [p: .00] \end{aligned}$$

08S: Rf Guilt Intolerance 63S: Rf Avoid Boredom
43S: sD Metabolic Disorder 34SN: Nd To Be Different
37SN: sD Failure Experiences 22SN: sD Subcultural Values
36SN: sD Rigid Moralizations 41S: sD Rigid Habits
49SN: Nd Avoid Affect 35N: rf Self Depreciation
06S: Nd Social Influence 09N: rf Loneliness
47S: rf Physiological Anxiety 48SN: Rf Punitive Rewards
20S: Rf Hedonism 17N: sD Grief Reaction
27N: Rf Oppressive Inhibitions 55N: rf Impaired Self Esteem
38N: rf Regulations Intolerance

sleep. They also involve a special attempt to defend against affects, and they seem to have less relevance to criminality variables. The surprise among the MORPHINE-related variables is the appearance of Social Enjoyment.

Aside from the expected similarities between inclusive use of MORPHINE and heroin, it might be surprising that the variables (axes) controlling their uses differ as much as they do. One

Characterization: The operative needs might include defensive avoidance of affect (49) and indifference to others' feelings (08) which, mediated by regulations (38), are experienced as oppressively inhibiting (27), even although much of this is projected since the inhibitions are self-imposed by personal rigidities (36, 41) and by hyper-valuation of social influence (06). The self-imposed isolation permits feelings of being different (34), but also promotes loneliness (09), loss (17), metabolic disorder (43) with its physiological distress (47) and impaired self esteem (55) and self depreciation (35), which may also derive from ruminations about past failures (37) and criticism (48). The participation of this picture in the criminal subculture can be seen in affect avoidance (49), guilt intolerance (08) and subcultural values (22).

Treatments might include: Creating Innocence, Enjoying Guilt, Creating Success, Enjoying Failure, Creating Flexibility, Creating Excitement, Creating Satisfaction, Creating Values, Assertive Training, Conflict Detraining, Transcendental Meditation and Loneliness Coping Strategies.

obvious feature of this difference lies in the variety of axes involved in MORPHINE use, and the fact that, for the most part, only one (S or N) of the axes' scores contributes to its use. This should mean that both needs and reinforcers play a part, but that the needs and reinforcers relate to different drivers. That is, there appears to be a greater degree of specificity and precision involved in MORPHINE than in heroin addiction. Perhaps 'special' treatment programmes would be needed for MORPHINE addicts.

Morphine, Inclusive Use

$$\begin{aligned} G\text{-MORPHINE} = & 3.7(37S) + 2.1(60S) - 1.9(01S) - 1.6(03S) - \\ & 1.2(59S) - 0.8(66S) - 0.7(68S) - 0.6(10S) - \\ & 0.6(02S) + 1.1(58N) - 0.3(48S) - 0.9(27N) - \\ & 0.9(49N) - 0.9(30N) + 0.8(43N) + 0.7(47N) + \\ & 0.7(48N) + 0.6(24N) + 0.5(50N) - 0.5(45N) \end{aligned}$$

37S: sD Failure Experiences 60S: Nd Substance Enhancement
 01S: rf Social Anxiety 03S: sD Reactive Depression
 59S: Nd Calm Nerves 66S: sD Impaired Sleep
 68S: Nd Substance Dependency 10S: Nd Social Contact
 02S: Rf Social Enjoyment 58N: Nd Communication
 48SN: Rf Punitive Rewards 27N: Rf Oppressive Inhibitions
 49N: Nd Avoid Affect 30N: rf Deny Affect
 43N: sD Metabolic Disorder 47N: rf Physiological Anxiety
 24N: Rf Immediate Gratification 50N: Rf Control Sensitivity
 45N: rf Hypoglycaemia [p: .00]

The inclusive use of COCAINE has elements that are found in addiction as a whole (Failure Experiences, Hypoglycaemia and Immediate Gratification effects), some which are found in the major drugs (Reality Denial, Rigid Moralizations and Allergy Stress), and some of which relate one substance to another regardless of class of substance. There is no special character evident that is specific to COCAINE use. That may be why the regression equation, although derived from and predicting to COCAINE uses, loads significantly for almost every other substance. To a lesser

Characterization: Operative needs might include sleep need from sleep disorder (66), perhaps associated with metabolic disorder (43) or hypoglycaemia (45), physiological anxiety (47), social anxiety (01) and oppressive inhibitions (27). Also substance dependency need (68) might derive from need for calm nerves (59) and reactive depression (03), complicated by social anxiety (01) which may enhance the felt needs for social contact (10) and social enjoyment (02), in a context of intolerance for socialization arising from affect avoidance (49) and denial (30), failure (37) and criticisms history (48) and the compensatory need for self enhancement (6) demanded immediately (24). Noteworthy specific axes in morphine use include impaired sleep (66) and affect denial (30).

Treatments might include: Creating Success, Enjoying Failure, Creating Excitement, Creating Satisfaction, Creating Integration, Sleep Training, Conflict Management Training, Transcendental Meditation, Reciprocal Inhibition Therapy, Hypoglycaemic Diet and Anti-Introversion Training.

extent, the same might be said of most of the chemicals assayed. The three that stand apart as unrelated to COCAINE and to most other substances are brandy, home brew and peyote.

In spite of the apparently inclusive commonality among most of the addictive substances, however, there is some variation in the relationships of the substances to the accessory variables. Not surprisingly, COCAINE use is related significantly to the mode of inhalation, to the purposes of disinhibition and activation or

Cocaine, Inclusive Use

$$\begin{aligned}
 \text{G-COCAINE} = & 1.7(37\text{S}) - 1.4(45\text{S}) + 1.4(18\text{S}) - 1.2(03\text{S}) + \\
 & 1.2(05\text{S}) + 1.1(36\text{S}) - 2.2(11\text{N}) - 1.4(68\text{N}) + \\
 & 1.2(08\text{N}) + 0.3(46\text{S}) - 0.9(29\text{N}) - 0.9(36\text{N}) - \\
 & 0.2(56\text{S}) - 0.6(37\text{N}) - 0.2(19\text{S}) + 0.2(08\text{S}) - \\
 & 0.1(22\text{S}) + 0.5(45\text{N}) + 0.5(56\text{N}) - 0.3(24\text{N}) + \\
 & 0.2(46\text{N}) + 0.1(44\text{S}) - 0.1(22\text{N}) \quad [p: .00]
 \end{aligned}$$

37SN: sD Failure Experiences 45SN: rf Hypoglycaemia
 18S: Nd Self Enhancement 03S: sD Reactive Depression
 05S: sD Rigid Self Image 36SN: sD Rigid Moralizations
 11N: Rf Reality Denial 68N: Nd Substance Dependency
 08NS: Rf Guilt Intolerance 46SN: rf Allergy Stress
 29N: rf Disturbed Emotions 56SN: sD Masked Disappointment

19S: sD Pain Sensitivity 22SN: sD Subcultural Values
24N: Rf Immediate Gratification 44S: Nd Fast Lane Living

Characterization: The operative needs include relief of physiological (45, 46, 19) and psychological (37, 03, 29, 56) distress, in rather rigid ways (05, 36, 11, 08, 22), partly by pursuing immediate (24) compensatory self enhancement (18) in living dangerously and 'fast' (44). There is little that marks cocaine as different from other drugs.

Treatments might include: Creating Flexibility, Creating Excitement, Creating Values, Creating Innocence, Creating Health, Time-Line Therapy and Reciprocal Inhibition Therapy.

arousal, and to those of sleep (opiate) and mellowing out. Why it also seems to serve as an accompaniment is less clear.

Crack, Inclusive Use

$$\begin{aligned} G\text{-CRACK} = & - 3(56S) - 1.8(30S) + 1.7(08S) + 1.5(66S) + 1.5(38S) \\ & + 1.4(05S) + 1.2(42S) + 1.1(13S) + 1.1(53S) + (14S) \\ & - (46S) + 3.1(56N) + 0.7(18S) - 2.5(49N) - 0.6(22S) \\ & + 0.5(09S) + 0.5(67S) - 1.8(42N) - 1.7(11N) - \\ & 1.1(13N) + 0.3(24S) + (46N) - 0.8(08N) - 0.7(09N) - \\ & 0.5(24N) - 0.5(17N) + 0.4(06N) + 0.3(22N) - 0.3(18N) \\ & - 0.3(48N) + 0.1(29N) \quad [p: .00] \end{aligned}$$

56SN: sD Masked Disappointment 30S: rf Deny Affect
08SN: Rf Guilt Intolerance 66S: sD Impaired Sleep
38S: rf Regulations Intolerance 05S: sD Rigid Self Image
42SN: Rf Easy Going Enjoyment 13SN: sD Flat Depression
53S: rf Somatic Depression 14S: Nd Vivid Images
46SN: rf Allergy Stress 18SN: Nd Self Enhancement
49N: Nd Avoid Affect 22SN: sD Subcultural Values
09SN: rf Loneliness 67S: Nd Relaxation/Calmness
11N: Rf Reality Denial 24SN: Rf Immediate Gratificatn
17N: sD Grief Reaction 06N: Nd Social Influence
48N: Rf Punitive Rewards 29N: rf Disturbed Emotions

In considering the axes loading for CRACK, the considerable overlap and similarity among the axes loading with each of the addictive substances is quite evident. This is inevitable since there are only 68 axes from which to draw. Still, the composition

is not the same as that for any other substance, and the order and strength with which common variables load does vary considerably.

Characterization: The operative needs include the inhibition of affects (30, 49, 08, 38, 11, 05) to create disappointments (56), isolation (09, 06, 05, 17), discomfort (46, 29), bitter ruminations (48) and impaired sleep (66) and, particularly, depressions (13, 53), all of which create needs which demand quick (24) relief in calmness (67) and compensatory self enhancement (18) and excitement seeking (14, 42, 22).

Treatments might include: Creating Success, Creating Values, Creating Innocence, Creating Integration, Conflict Management Training, Assertive Training, Media Proofing, Sleep Training, Time-Line Therapy and Fair Witness Training.

Criminality enters as one set of variables in inclusive use of CRACK, so does inhibition of affects, and so does somatization, all in novel ways and with a new combination of variables. Although, need pressures seem to predominate as in most inclusive use, here there is a heavy implicit involvement with reinforcers -- perhaps due to the rapidity and intensity of the crack reaction.

On the accessory factors, CRACK loads on injection and inhalation, as well as with cigarettes. It also has significant loadings on all the purposes assayed except for enhancement and dreams. It loads with most of drugs on severity under the law. And it is assigned high 'strength' as a substance.

Although many of the axes loading with OPIUM seem familiar, the picture is really very different from any other yet encountered. The picture of inclusive use of OPIUM is one of conflict, failure, punishment and guilt fuelling a restless, high

Opium, Inclusive Use

$$\begin{aligned} \text{G-OPIUM} = & - 2.1(05\text{S}) + 1.4(53\text{S}) - 1.1(29\text{S}) - 1.1(51\text{S}) + (37\text{S}) \\ & + 2.3(48\text{N}) + 2.1(08\text{N}) - 0.4(18\text{S}) - 1.6(16\text{N}) \\ & + 0.3(14\text{S}) - 1.2(53\text{N}) - 0.3(34\text{S}) - (45\text{N}) + 0.8(46\text{N}) \\ & + 0.7(29\text{N}) - 0.1(61\text{S}) + 0.1(22\text{S}) + 0.2(63\text{N}) \\ & + 0.1(30\text{N}) + 0.1(37\text{N}) + 0.1(24\text{N}) \quad [p: .06] \end{aligned}$$

05S: sD Rigid Self Image 53SN: rf Somatic Depression
29SN: rf Disturbed Emotions 51S: sD Guilt Proneness
37SN: sD Failure Experiences 48N: Rf Punitive Rewards

08N: Rf Guilt Intolerance 18S: Nd Self Enhancement
 16N: Rf Control Others 14S: Nd Vivid Images
 34S: Nd To Be Different 45N: rf Hypoglycaemia
 46N: rf Allergy Stress 61S: Nd Forget Failures
 22S: sD Subcultural Values 63N: Rf Avoid Boredom
 30N: rf Deny Affect 24N: Rf Immediate Gratification

Characterization: Operative needs include a strong element of guilt (51) and its rather rigid (05) avoidance (08, 30, 61), presumably based on a history of felt criticism (37, 48), and associated with emotional disturbances (29) and depression (53), rather characteristically with a somatic flavour (53, 45, 46). The distress and depression is likely to need some defensive correction (63, 61, 22, 24, 14) and compensatory self enhancement (18), commonly by feeling different (34) or at the expense of others (16).

Treatments might include: Creating Innocence, Enjoying Guilt, Creating Success, Enjoying Failure, Creating Values, Creating Excitement, Creating Integration and Allergy Counter-Example.

stress person. The overall presentation comes as close as any yet encountered here to that of the 'paroxysmal' energy (similar to the ADD) person for whom axis 37 was written.

Hashish, Inclusive Use

G-HASHISH = - 3(17S) + 1.9(15S) + 1.8(60S) - 1.5(19S) -
 1.1(34S) + (04S) + 0.9(13S) - 0.9(06S) - 0.8(10S)
 - 0.7(36S) + 2.4(48N) - 0.5(44S) - 1.7(15N) +
 0.5(30S) + 0.5(12S) + 0.5(46S) - 0.5(52S) -
 0.4(02S) - 1.5(11N) + 1.2(55N) - (46N) - 0.2(08S)
 + 0.9(08N) + 0.8(36N) - 0.6(04N) - 0.5(60N) -
 0.5(12N) - 0.4(13N) - 0.4(65N) - 0.3(39N) -
 0.3(41N) + 0.2(30N) [p: .00]

17S: sD Grief Reaction	15SN: Rf Control Effort
60SN: Nd Substance Enhancement	19S: sD Pain Sensitivity
34S: Nd To Be Different	04SN: Nd Stimulus Hunger
13SN: sD Flat Depression	06S: Nd Social Influence
10S: Nd Social Contact	36SN: sD Rigid Moralizations
48N: Rf Punitive Rewards	44S: Nd Fast Lane Living
30SN: rf Deny Affect	12SN: Nd Rebelliousness
46SN: rf Allergy Stress	52S: Rf Anger/Hostility

02S: Rf Social Enjoyment 11N: Rf Reality Denial
55N: rf Impaired Self Esteem 08SN: Rf Guilt Intolerance
65N: rf Avoid Attractiveness 39N: rf Effort Strain
41N: sD Rigid Habits

The accessory factors loading on OPIUM use include the opiate purpose, along with the pursuit of tranquillity. It is associated with accompaniments but, strangely, not with dreams. Like LSD and some of the stronger substances, it loads on the purpose of being different. It also functions as an activator and a disinhibitor. And it is associated with the inhalants, a given setting, lifestyle and paraphernalia.

Characterization: The operative needs include a fair amount of stress (04, 46, 08), discomfort (19, 15, 17, 48, 55) and arousal (52, 12, 44), reacted to in a rigid and defensive way (15, 36, 41, 30, 11, 65), which have depleted resources (13, 39), left a depressive lifestyle (13, 15, 39) which is reacted to with needs for self enhancement (60, 34, 04, 10, 44, 12) in relatively common ways.

Treatments might include: Creating Flexibility, Creating Success, Creating Innocence, Creating Health, Creating Integration, Allergy Counter-Example, Conflict Management Training, Natural Highs Training and Grief Therapy.

The inclusive use of HASHISH seems to involve an array of addictive factors all the way from relief of distress, through social interactions, aggrandizement and feeling different, to social dynamics of anger, rebelliousness and reality denial. This variety may well be due to the common use of HASHISH and marijuana along with any other addictive substance. There is a kind of picture that emerges of one who seeks social enjoyments and self enhancement to distract him/her self from many forms of distress
Marijuana, Exclusive Use

$$\begin{aligned} X\text{-MARIJUANA} = & - 2(20S) + 1.6(44S) - 1.6(42S) + 1.6(61S) + \\ & 1.5(12S) - 1.4(34S) + 1.3(03S) - 1.3(26S) - \\ & 1.1(65S) - 0.9(04S) + 0.7(63S) - 1.7(12N) + \\ & 1.7(15N) - 1.6(44N) + 1.6(34N) + 1.5(04N) - \\ & 0.4(08S) + 1.3(65N) - 1.3(11N) + 1.2(24N) - \\ & 1.2(16N) - 0.3(24S) + 0.8(20N) - 0.6(08N) - \end{aligned}$$

0.4(06N) - 0.1(16S) [p: .00]

20SN: Rf Hedonism	44SN: Nd Fast Lane Living
42S: Rf Easy Going Enjoyment	61S: Nd Forget Failures
12SN: Nd Rebelliousness	34SN: Nd To Be Different
03S: sD Reactive Depression	26S: rf Rationalizing Defence
65SN: rf Avoid Attractiveness	04SN: Nd Stimulus Hunger
63S: Rf Avoid Boredom	15N: Rf Control Effort
08SN: Rf Guilt Intolerance	11N: rf Reality Denial
24NS: Rf Immediate Gratification	16NS: Rf Control Others
06N: Nd Social Influence	

Characterization: Operative reinforcers include rationalizing (26) hedonistic (20, 42, 24) pursuit of excitement and fun (12, 04, 34, 42) to counter (08, 61, 34, 63, 11) inhibition deriving from the effort at self control (15) and control of others (16), and to soothe the depletion of energy (03) arising from these efforts.

Treatments might include: Creating innocence, Enjoying Guilt, creating health, Natural Highs Training, Assertive Training, Rational-Emotive Therapy, Goal-Finding (A and D goals) and Enjoying Restraint.

and pain. It is interesting that the most frequently loading axis, #37 (Failure Experiences), does not load with HASHISH use.

Like marijuana, HASHISH is not perceived as a substance possessed of much strength, nor is it related to high severity under the law. It shows unstable relationships to most of the accessory variables of purpose, strength and the like. This is probably due to variations in the way this substance is used.

MARIJUANA, as expected, behaves in a manner that is quite similar to hashish. However, its relationships to the accessory variables are more stable. Presumably, this is due to the rather standard manner in which it is used. The uses of MARIJUANA have limited involvement with the common drug-related variables.

Hedonistic, hypomanic and rebellious extraverts seem to be prone to exclusive use of MARIJUANA. These may well include dealers (Control Others) who refrain from becoming involved in harder drugs. Exclusive use of MARIJUANA comes as close as any encountered here to the MMPI image of the 4-9 (Pd-Ma) delinquent.

In contrast, the person displaying inclusive use of MARIJUANA sounds most like the grown up hyperactive or ADD. There may be an additional element of seeking to 'look cool' in the Control Effort

and the sense (impression rather than evidence) that in this setting the Flat Depression works like a sought-after need, as though the person has imposed the depression on him/her self to feel 'removed from' or 'above it all'.

MARIJUANA's accessory features include the expected mellowing effect, as well as an opiate and a tranquillizing effect, as if it functions as self-medication.

Marijuana, Inclusive Use

$$\begin{aligned} \text{G-MARIJUANA} = & 2.7(60\text{S}) + 2.4(37\text{S}) - 2(15\text{S}) - 2(34\text{S}) - 1.7(12\text{S}) \\ & - 1.4(17\text{S}) + 0.9(04\text{S}) - 0.7(30\text{S}) + 0.6(13\text{S}) - \\ & 2.3(15\text{N}) + 0.5(08\text{S}) - 1.7(60\text{N}) + 1.5(34\text{N}) + \\ & 1.4(12\text{N}) - 0.4(19\text{S}) - (04\text{N}) - 0.5(37\text{N}) - 0.4(09\text{N}) \\ & + 0.3(30\text{N}) + 0.3(19\text{N}) - 0.2(08\text{N}) \quad [p: .00] \end{aligned}$$

60SN: Nd Substance Enhancement 37SN: sD Failure Experiences

15SN: Rf Control Effort 34SN: Nd To Be Different

12SN: Nd Rebelliousness 17S: sD Grief Reaction

04SN: Nd Stimulus Hunger 30SN: rf Deny Affect

13S: sD Flat Depression 08SN: Rf Guilt Intolerance

19SN: sD Pain Sensitivity 09N: rf Loneliness

Characterization: Operative needs include that to rebel (12, 08) and feel different (34) in an active way (04), perhaps with the help of substances (60) to correct (15, 30) for a sense of being prone to failures (37), which has left the person painfully (19) lonely (09), feeling loss (17) and joyless (13).

Treatments might include: Creating Flexibility, Creating Innocence, Creating Integration, EEG-SMR Biofeedback Training, Enjoying Failure and Conflict Management Training.

The relatively weak participation of common drug-related axes might suggest that MARIJUANA use has come to be widely accepted as though it were little more than a recreational substance. It is as though it is not used as if it has much potency or its use much
Peyote, Inclusive Use

$$\begin{aligned} \text{G-PEYOTE} = & - 2.9(22\text{S}) + 2.7(62\text{S}) + 2.5(37\text{S}) + 1.4(14\text{S}) - \\ & 1.3(34\text{S}) - 1.2(18\text{S}) - 1.2(52\text{S}) - 1.1(51\text{S}) - \\ & 0.9(29\text{S}) + 3.5(22\text{N}) - 2.6(20\text{N}) - 1.9(48\text{N}) + \end{aligned}$$

$0.4(35S) - 0.6(16N) - 0.6(47N) + 0.3(35N) +$
 $0.2(53N) + 0.2(01N)$ [p: .00]
 22SN: sD Subcultural Values 62S: Nd Different Experiences
 37S: sD Failure Experiences 14S: Nd Vivid Images
 34S: Nd To Be Different 18S: Nd Self Enhancement
 52S: Rf Anger/Hostility 51S: sD Guilt Proneness
 29S: rf Disturbed Emotions 20N: Rf Hedonism
 48N: Rf Punitive Rewards 35SN: rf Self Depreciation
 16N: Rf Control Others 47N: rf Physiological Anxiety
 53N: rf Somatic Depression 01N: rf Social Anxiety

Characterization: Operative needs include social anxiety (01) and somatic depression and distress (53, 47), associated with a sense of having received excessive criticism for failures (37, 48, 51, 35), and reacted to with upset (52, 29, 16) with a compensatory need to be different (34) and to enjoy (20, 14)

Treatments might include: Creating Success, Enjoying Failure, Creating Excitement, Creating Satisfaction, Creating Values, Enjoying Guilt, Reciprocal Inhibition Therapy (for criticism) and Assertive Training,

importance. If so, this is a potentially harmful attitude. Some clinical experiences with MARIJUANA users suggest rather strongly that MARIJUANA, at the very least, has the effect of interfering with either new learning and/or the consolidation of new learning in the personality. In conditioning forms of treatment its use seems quite clearly to delay, indeed to prevent, therapeutic benefits from being achieved. Even cessation of its use during treatment appears to make learning sluggish for some time, if there has been appreciable duration of use prior to cessation. Whether cause or effect, this interference with new learning may be related to the noted similarities of the MARIJUANA pictures to the MMPI 4-9 and/or the grown-up ADD syndromes.

PEYOTE's inclusive use certainly seems to involve the need to try something different, to have intense experiences and, as it were, to 'snub the nose' at others. These need pressures look as though they come from a sense of failure, punishment and distress which have generated a negative image of the self.

The accessory indicators perform with PEYOTE in very different ways as compared with the other drugs. There is no significance in the relationships of PEYOTE to setting, lifestyle, paraphernalia or

severity under the law. Few of the usual purposes, other than those of tranquillity and disinhibition, load with PEYOTE. It does not even load with the dreams purpose where it was thought it would be a relevant substance. It does seem to be a different drug.

The thing that seems to be different about the inclusive use of magic MUSHROOMS is the need to hold back aggressiveness and its common consequence in reactive depression. Perhaps MUSHROOMS serve to 'cool' the person out and create distraction in the attendant changed experience. As with so many other addictive substances, the role of subjective distress and depressions seems

Mushrooms, Inclusive Use

$$\begin{aligned} \text{G-MUSHROOMS} = & 3(37\text{S}) - 2.8(07\text{S}) + 2.3(22\text{S}) + 1.2(03\text{S}) + \\ & 1.2(14\text{S}) - 0.9(48\text{S}) - 1.9(37\text{N}) + 0.4(02\text{S}) - \\ & 0.3(53\text{S}) - 0.3(62\text{S}) - 0.8(02\text{N}) - 0.8(29\text{N}) + \\ & 0.8(48\text{N}) - 0.7(24\text{N}) + 0.7(45\text{N}) + 0.5(36\text{N}) - \\ & 0.1(36\text{S}) + 0.2(53\text{N}) \quad [p: .00] \end{aligned}$$

37SN: sD Failure Experiences 07S: Nd Aggression Inhibition
22S: sD Subcultural Values 03S: sD Reactive Depression
14S: Nd Vivid Images 48SN: Rf Punitive Rewards
02SN: Rf Social Enjoyment 53SN: rf Somatic Depression
62S: Nd Different Experiences 29N: rf Disturbed Emotions
24N: Rf Immediate Gratification 45N: rf Hypoglycaemia
36NS: sD Rigid Moralizations

Characterization: Operative needs include the inhibition of aggression (07) with its common consequences in depressive reactions (03, 53) and disturbed emotions (29), perhaps created by a sense of mistreatment (37, 48, 36), resulting in corrective seeking for novel (62) and brighter experiences (14) and, mediated by subcultural values (22), the expectation of instant gratification (24). Hypoglycaemia (45) seems to add its relief needs to this picture.

Treatments might include: Creating Success, Creating Values, Creating Flexibility, Creating Excitement, Hypoglycaemia Diet, Assertive Training, Time-Line Therapy and Media Proofing.

to be a central issue in the inclusive use of MUSHROOMS. One might conclude that criminality (Subcultural Values) mediates the LSD, Inclusive Use

$$\begin{aligned}
 G\text{-LSD} = & 1.7(60S) - 1.6(42S) + 1.4(32S) + 1.3(04S) - 0.7(13S) - \\
 & 2.1(15N) - 1.9(04N) + 0.5(67S) - 1.7(32N) + 1.7(08N) - \\
 & 0.4(17S) + 1.5(37N) + 0.3(16S) - 0.2(03S) + 0.2(39S) - \\
 & 0.2(10S) + 0.7(02N) - 0.5(59N) - 0.5(01N) + 0.5(05N) + \\
 & 0.5(36N) + 0.5(42N) + 0.3(24N) \quad [p: .00]
 \end{aligned}$$

60S: Nd Substance Enhancement 42SN: Rf Easy Going Enjoyment
 32SN: Rf Group Satisfaction 04SN: Nd Stimulus Hunger
 13S: sD Flat Depression 15N: Rf Control Effort
 67S: Nd Relaxation/Calmness 08N: Rf Guilt Intolerance
 17S: sD Grief Reaction 37N: sD Failure Experiences
 16S: Rf Control Others 03S: sD Reactive Depression
 39S: rf Effort Strain 10S: Nd Social Contact
 02N: Rf Social Enjoyment 59N: Nd Calm Nerves
 01N: rf Social Anxiety 05N: sD Rigid Self Image
 36N: sD Rigid Moralizations 24N: Rf Immediate Gratification

Characterization: Operative needs include those common to many drugs, such as depression (13, 03, 17, 39) and anxiety (01, 15, 16), partly springing from a history of failures (37), and corrective reactions to them in arousal (04, 42,) and calmness (67, 59) as well as self enhancement (60, 32, 05) and counter-culture involvement (08, 24, 36, 05).

Treatments might include: Creating Flexibility, Creating Excitement, Creating Innocence, Enjoying Guilt, Conflict Management Training, Reciprocal Inhibition Therapy, Assertive Training and Enjoying Failure.

person's involvement with other drugs. It would have been nice to examine the picture with exclusive use of MUSHROOMS, but there were only 9 subjects in our sample who used no other drugs.

The accessory indicators present magic MUSHROOMS as activators and dream-producers, as well as opiates and tranquillizers. The latter functions may be the mediators in the relationships found to medications and to the inhibition of aggressive feelings.

In spite of the special status afforded it by its properties as an hallucinogen, inclusive use of LSD does not stand out here as much different from any general purpose addictive drug. It seems to include elements that are common to many of the street drugs. Still, although depressions are represented [LSD has been tried as an anti-depressant medication], the overall impression is that it is used as an activating agent to defend against or compensate for

debilitation.

The accessory indicators exhibit significant loadings on LSD with all of the purposes except, surprisingly, dreams. And, again as a surprise, it does not relate significantly to substance strength. These observations are hard to understand.

The picture with PCP is not unlike that for many other drugs. The features of its inclusive use perhaps emphasize the role of inhibition and depression, built partly on a foundation of guilt feelings. Buried in this picture there is almost a sense of 'dealing with' life by ending it.

Among the accessory indicators, PCP loads with substance injection, with the opiate purpose, as a tranquillizing and mellowing agent, as well as with disinhibition, activation and as

PCP, Inclusive Use

$$\begin{aligned} G\text{-PCP} = & 2(37S) + 1.7(18S) - 1.4(43S) - (17S) - 0.9(13S) - \\ & 0.8(27S) + 0.6(60S) + 0.4(68S) - 0.3(53S) - 1.1(18N) - \\ & (22N) - (30N) + 0.3(51S) - 0.9(14N) + 0.8(52N) + \\ & 0.6(53N) + 0.6(24N) + 0.6(13N) + 0.5(27N) + 0.1(30S) + \\ & 0.1(08S) + 0.3(08N) \quad [p: .00] \end{aligned}$$

37S: sD Failure Experiences 18SN: Nd Self Enhancement
43S: sD Metabolic Disorder 17S: sD Grief Reaction
13SN: sD Flat Depression 27SN: Rf Oppressive Inhibition
60S: Nd Substance Enhancement 68S: Nd Substance Dependency
53SN: rf Somatic Depression 22N: sD Subcultural Values
30NS: rf Deny Affect 51S: sD Guilt Proneness
14N: Nd Vivid Images 52N: Rf Anger/Hostility
24N: Rf Immediate Gratification 08SN: Rf Guilt Intolerance

Characterization: Operative needs include those demanding strong inhibitions (27, 51, 37, 30), with the common reaction in depressions (13, 17, 53) with somatic concerns (53, 43), and angry (52) rebellion against the felt restraints (08, 68, 22) as well as the common need for self enhancement (18, 60) and freer fulfilment and fun (24, 14, 60).

Treatments might include: Creating Excitement, Creating Values, Creating Innocence, Creating Integration, Enjoying Guilt, Transcendental Meditation, Conflict Management Training and Substance Abuse Biofeedback Training.

an accompaniment. Part of this array of significant relationships probably comes from the association between PCP and other drug use.

There is a sense that the inclusive use of SPEED is driven both by the person's need to break through his/her own inhibitive

Speed, Inclusive Use

$$\begin{aligned} G\text{-SPEED} = & - 0.4(39S) - 1.2(32N) + 0.3(32S) + (39N) - 0.9(10N) \\ & + 0.2(10S) - 0.2(03S) + 0.5(37N) + 0.4(48N) + \\ & 0.3(26N) + 0.3(16N) + 0.1(50N) - 0.1(14N) \quad [p: .04] \end{aligned}$$

39SN: rf Effort Strain 32NS: Rf Group Satisfaction
10NS: Nd Social Contact 03S: sD Reactive Depression
37N: sD Failure Experiences 48N: Rf Punitive Rewards
26N: rf Rationalization Defence 16N: Rf Control Others
50N: Rf Control Sensitivity 14N: Nd Vivid Images

Characterization: The operative needs include rationality as a control or defensive act (26, 50, 16) which creates a kind of sticky inhibition requiring effort to break through (39) which may result in periodic depressive reactions (03, 37, 48) and the corrective need for freedom and enjoyment (14, 10, 32)

Treatments might include: Creating Success, Creating Freedom, Creating Excitement and Divergent Thinking.

controls (the application of which likely generates its own stress) and by his/her felt need to increase energy, stress and activation (perhaps almost aversively, as if using self-punishment). However, it must be admitted that the variables controlling SPEED use are not easy to put together into a meaningful picture.

The accessory measures do not help to clarify the SPEED picture. There is a significant relationship to cigarettes. The associations with purposes of use are scattered, including dreams, accompaniment, mellowing and tranquillization. Its associations with disinhibition and activation or arousal seem more meaningful.

It needs to be remarked at this point that there is a great deal of overlap and duplication among the need and reinforcement variables contributing to the use of all the addictive substances. There are particular features that tend to relate relatively specifically to use of some types of alcohols or drugs, some which are mainly specific to alcohol or to drug uses, some which are related to the fact of use of addictive substances (eg., some criminality indications), and some which appear to be generic

addictiveness indicators. This idea will be returned to later.

The writer's addiction to CIGARETTE smoking was one of the motives underlying the present study. With apologies for the personal element in these remarks, it seems likely that the compulsive rigidity apparent in these data is a factor in smoking. Also it seems probable that an allergic reaction to tobacco smoke may well play an important role. But the consensus among CIGARETTE smokers is strongest around its 'pep up' effect, apparently to compensate for the implicit feeling of risk of lethargy associated with a depressive underlay. Another commonly recognized factor is the role of social influence and social enjoyment that tends to be attributed to participation in the smoking subculture.

The accessory factors associated with CIGARETTE use include the expected purpose/function as an activator and as a mellowing agent. It also has an opiate effect that is not unexpected.

Cigarettes, Exclusive Use

$$\begin{aligned} X\text{-CIGARETTE} = & - 0.7(05S) - 1.5(12N) + 0.3(46S) + 1.3(03N) - \\ & 1.2(67N) + 1.1(33N) + 1.1(50N) + 1.1(05N) + \\ & 0.8(09N) + 0.8(21N) + 0.2(02S) - 0.3(51N) + \\ & 0.3(40N) - 0.1(19S) - 0.2(32N) - 0.2(68N) + \\ & 0.1(59N) + 0.1(07N) \quad [p: .00] \end{aligned}$$

05SN: sD Rigid Self Image 12N: Nd Rebelliousness
46S: rf Allergy Stress 03N: sD Reactive Depression
67N: Nd Relaxation/Calmness 33N: rf Dogmatism
50N: Rf Control Sensitivity 09N: rf Loneliness
21N: rf Social Withdrawal 02S: Rf Social Enjoyment
51N: sD Guilt Proneness 40N: Rf Pep Up Effect
19S: sD Pain Sensitivity 32N: Rf Group Satisfaction
68N: Nd Substance Dependency 59N: Nd Calm Nerves
07N: Nd Aggression Inhibition

Characterization: The operative reinforcers include rigid (05, 33) and rebellious (12) defenses against guilt feelings (51) and the need to inhibit anger (07, 03, 19), and to deal with felt strain (03, 46) and loneliness (09, 21) by becoming calm (67, 59) and also creating arousal (40, 12, 02, 32). Some of the resistance to smoking cessation may be due to the associated rigid self image (05) and to allergy to tobacco smoke (46) -- ideas which have often been remarked.

Treatments might include: Creating Happiness, Allergy Counter-

Example, Divergent Thinking, Reciprocal Inhibition Therapy and Natural Highs Training, as well as Smokenders.

Cigarettes, Inclusive Use

$$\begin{aligned} \text{G-CIGARETTE} = & 1.4(18\text{S}) - 4.9(18\text{N}) + 0.5(22\text{S}) - 1.8(22\text{N}) + \\ & 1.6(06\text{N}) - 0.4(06\text{S}) + 0.3(14\text{S}) + 1.2(41\text{N}) + \\ & 0.2(02\text{S}) - 0.9(46\text{N}) - 0.8(42\text{N}) - 0.2(36\text{S}) - \\ & 0.6(14\text{N}) - 0.4(02\text{N}) + 0.1(30\text{S}) + 0.1(46\text{S}) + \\ & 0.2(36\text{N}) - 0.2(30\text{N}) \quad [p: .00] \end{aligned}$$

18SN: Nd Self Enhancement 22SN: sD Subcultural Values
06NS: Nd Social Influence 14SN: Nd Vivid Images
41N: sD Rigid Habits 02SN: Rf Social Enjoyment
46NS: rf Allergy Stress 42N: Rf Easy Going Enjoyment
36SN: sD Rigid Moralizations 30SN: rf Deny Affect

Characterization: Operative needs include, again, some rigid defenses (41, 36) against affects (30), compensated by pursuit of social enjoyment (18, 02, 14, 42). Again, the possible role of allergy (46) is remarked, perhaps to tobacco smoke.

Treatments might include: Creating Flexibility, Creating Values, Creating Integration, Affect Training and Allergy Counter-Example.

Again, as expected, it is associated with paraphernalia, and with a kind of lifestyle and setting -- that is, it may be isolating.

The exclusive use of ANY kind of DRUG is, again, driven by reinforcers, apparently those deriving from the relief effect of the 'rush' or 'buzz' on a flat, joyless existence, whether the 'rush' is felt to be pleasant or aversive, and whether it serves as Any Drugs, Exclusive Use

$$\begin{aligned} \text{X-ANY DRUGS} = & - (24\text{S}) + 3.2(48\text{N}) - 2.2(53\text{N}) + 2(13\text{N}) + 2(04\text{N}) \\ & - 0.4(45\text{S}) + 0.4(32\text{S}) + 0.3(48\text{S}) - (21\text{N}) - \\ & 0.4(44\text{N}) \quad [p: .00] \end{aligned}$$

24S: Rf Immediate Gratification 48NS: Rf Punitive Rewards
53N: rf Somatic Depression 13N: sD Flat Depression
04N: Nd Stimulus Hunger 45S: rf Hypoglycaemia
32S: Rf Group Satisfaction 21N: rf Social Withdrawal

44N: Nd Fast Lane Living

Characterization: Operative reinforcers include the access to immediate gratification (24) and the associated image of living in the 'fast lane' (44). Common to most drugs, there are derived needs from perceived mistreatment (48), depression (13, 53) and somatic distress (45, 53), leading to rewarding effects of being aroused (04) and having fun (44, 32).

Treatments might include: Creating Success, Creating Health, Conflict Management Training, Time-Line Therapy, Hypoglycaemia Diet and Assertive Training.

excitement or as distraction from distress. It is interesting that either the social contact or the social isolation accompanying various kinds of drug uses can be construed as rewarding.

The significantly related accessory indicators include the purposes of disinhibition and activation, of a tranquillizer and an opiate, and of achieving different experiences. Not unexpectedly, exclusive use of ANY DRUG(s) is also significantly associated with availability issues, setting, lifestyle effects, paraphernalia, strength, compromise of the law and severity under the law.

Among the ADDICAUS-derived measures of exclusive use of drugs, any drugs, heroin, marijuana and cigarettes are related significantly to DAST (costs of drug addiction test). In addition, the modes of use of inhalation and injection, the purposes of activation, disinhibition, mellowing, opiate and tranquillizer, as well as paraphernalia, lifestyle effects and severity under the law are significantly related to the DAST score.

Among the ADDICAUS-derived measures of inclusive use of drugs, all the drugs except for opium use, as well as cigarettes, tranquillizing and pain medications, and brandy, rum, rye, scotch and wine are related to the DAST score. It would seem that DAST provides a good measure of addictiveness generally, and that it is not necessarily restricted to the recognition of drug addiction.

The MAST (costs of abusing alcohol) score is significantly related to the ADDICAUS-derived measures of exclusive use of any alcohol, beer and wine (but not brandy). It also relates to exclusive use of any drug, any medication and pain medication. It loads with the inhalation mode of use, purposes of accompaniment, having different experiences, disinhibition, dreams, opiate and tranquillizing effects, as well as with paraphernalia, setting,

lifestyle effects and 'strength'.

In terms of ADDICAUS-derived measures of inclusive use, the MAST is significantly related to all the alcohols except beer and brandy. It is related significantly to cigarettes, tranquillizers

Alcohol OR Drugs, Exclusive Use

$$\begin{aligned} X\text{-ALCOHOL OR DRUGS} = & - 4.3(27S) + 4(62S) - 11.9(62N) - \\ & 10.3(42N) + 8.3(46N) + 7.8(27N) + \\ & 7.1(40N) - 1.7(16S) + 1.3(32S) + 0.7(07S) \\ & + 0.7(20S) + 1.9(16N) + 1.9(06N) - \\ & 0.1(42S) \quad [p: .00] \end{aligned}$$

27SN: Rf Oppressive Inhibition 62SN: Nd Different Experiences

42NS: Rf Easy Going Enjoyment 46N: rf Allergy Stress

40N: Rf Pep Up Effect 16SN: Rf Control Others

32S: Rf Group Satisfaction 07S: Nd Aggression Inhibition

20S: Rf Hedonism 06N: Nd Social Influence

Characterization: Operative reinforcers in uses of standard addictive substances include the relief of inhibitions (27, 07, 16) and discomfort (46) by increasing freedom (42, 20) and activation or arousal (40, 62).

Treatments might include: Creating Happiness, Transcendental Meditation, Anti-Inhibition Training, Assertive Training, Divergent Thinking and Anti-Introversion Training.

and use of all the drugs except hashish, opium and peyote. The MAST, like the DAST, seems to measure addictiveness generally.

The exclusive use of ANY ALCOHOLS OR DRUGS is associated among the accessory purposes with disinhibition and the opiate effect. This is quite consistent with the picture emerging from the axes involving inhibitive trends with their needs for freedom, and for stress- and discomfort-relief. Again, the exclusive use of these substances seems to be driven largely by their reinforcing effects. Not surprisingly, the ADDICAUS-derived measure of exclusive use of any alcohol or drugs is significantly related to both the MAST and DAST scores.

The understanding and treatment of standard non-specific addictions should surely include variables involved in specific addictives used as well as the generic use variables. There is a fair amount of commonality among the variables contributing to drug abuse and to those involved in alcohol abuse. We will encounter

some of this commonality again in the next section of this document where ways to treat addictions are sought, as well as in another volume in which we sought to understand and treat criminality (Reynolds and Quirk, 1996). For now, suffice it to say that the treatment methods' labels prefixed by 'Creating ...' and 'Enjoying ...' used in the foregoing are associated with the treatment efforts directed at addictions and criminality, respectively.

MEDICATIONS USES

Pain Medications, Exclusive Use

$$\begin{aligned} X\text{-PAIN MEDS} = & 0.8(35S) + 2.3(20N) - 2.1(44N) - 0.5(36S) + \\ & 1.2(23N) + 0.2(65S) + 0.7(68N) - 0.4(39N) + \\ & 0.1(37N) - 0.1(65N) - 0.1(35N) - 0.1(29N) \end{aligned}$$

35SN: rf Self Depreciation 20N: Rf Hedonism [p: .00]
44N: Nd Fast Lane Living 36S: sD Rigid Moralizations
23N: Nd Dependency Inhibition 65SN: rf Avoid Attractiveness
68N: Nd Substance Dependency 39N: rf Effort Strain
37N: sD Failure Experiences 29N: rf Disturbed Emotions

Characterization: Operative reinforcers include hedonic (20, 44) relief from emotional distress (29) and sense of mistreatment (37) and its derivative sense of strain (39), self depreciation (35) and lack of concern with appearances (65), depending on a substance (68) without transgression against moral standards (36).

Treatments might include: Creating Flexibility, Creating Excitement, Creating Health, Time-Line Therapy, Assertive Training and Self-Reliance Therapy.

The exclusive use of PAIN MEDICATIONS may seem strange at first glance. There is no reference to pain sensitivity (19) in either exclusive or inclusive use. It would appear that in the sample studied here, PAIN MEDICATIONS are being used largely as self-medication with a tranquilizing aim. The operative factors involve disturbed emotions, effort strain, failure experiences and self depreciation. There even seems to be a contradiction between substance dependency and dependency inhibition. This latter observation, however, is likely quite understandable. In our sample, people who use PAIN MEDICATIONS exclusively or inclusively are likely susceptible (other factors) to addictiveness, and have

merely selected PAIN MEDICATIONS as readily available and inexpensive substances. The dependency inhibition probably refers to their unwillingness to depend on other people, for example, as suppliers or as friends, but to rely instead on their own initiatives and/or a non-personal agent such as a pharmacy.

Pain Medications, Inclusive Use

$$\begin{aligned} \text{G-PAIN MEDS} = & 1.4(13\text{S}) + 1.4(06\text{S}) + (46\text{S}) - 4.1(06\text{N}) - \\ & 3.5(13\text{N}) - 0.9(52\text{S}) - 0.9(32\text{S}) + 0.7(48\text{S}) - \\ & 0.7(29\text{S}) - 0.6(54\text{S}) + 2.4(52\text{N}) - 0.6(50\text{S}) + \\ & 0.5(14\text{S}) + 0.3(59\text{S}) - 0.3(68\text{S}) + 0.8(39\text{N}) + \\ & 0.6(14\text{N}) + 0.5(18\text{N}) - 0.1(58\text{S}) - 0.1(21\text{S}) + \\ & 0.3(26\text{N}) - 0.3(46\text{N}) + 0.1(18\text{S}) + 0.1(54\text{N}) \end{aligned}$$

13SN: sD Flat Depression 06SN: Nd Social Influence
46SN: rf Allergy Stress 52SN: Rf Anger/Hostility
32S: Rf Group Satisfaction 48S: Rf Punitive Rewards
29S: rf Disturbed Emotions 54SN: Nd Hungry Heart
50S: Rf Control Sensitivity 14SN: Nd Vivid Images
59S: Nd Calm Nerves 68S: Nd Substance Dependency
39N: rf Effort Strain 18NS: Nd Self Enhancement
58S: Nd Communication 21S: rf Social Withdrawal
26N: rf Rationalization Defence [p: .00]

Characterization: Operative needs include those for relief with an exogenous agent (68) for generalized distress of almost any kind (13, 46, 52, 29, 54, 48), with its attendant sense of strain (39) and social isolation (21), rationalized (26), perhaps, as necessary to return to social interaction (06, 58). The achievement of such relief may feel enough different from the state of distress that the person feels re-enlivened (14) and re-socialized (32).

Treatments might include: Creating Success, Reciprocal Inhibition Therapy (with deep muscle relaxation), Therapeutic Massage, Rational-Emotive Therapy, Stress Management Training, Assertive Training and Transcendental Meditation.

Many of the features associated with inclusive use of PAIN remedies are likely associated with the other addictive substances

used. Certainly, many of the variables look familiar as factors in uses of other drugs. Another way to express the last idea would be to point out that pain remedies are apparently used as a common cure-all for depression, allergy, anger, disturbed emotions, loneliness, communication needs and effort strain. Perhaps it is the use of rationality as a defence and control that helps to select PAIN MEDICATIONS as a presumably harmless way of trying to deal with each of these kinds of disturbances.

Accessory features include the use of PAIN remedies to achieve different experience, perhaps as a disinhibitor or a tranquillizer, and sometimes as an accompaniment and as an opiate. It is no surprise that PAIN remedies are not associated with setting, lifestyle, strength, paraphernalia or legal involvement.

The category of TRANQUILLIZERS was constructed using both valium and other tranquillizers. Perhaps this is why there are so many features noted here. Still, some of the features are interesting. For example, paranoid sensitivity (25) loads only with TRANQUILLIZERS. The pep up effect (40) may appear here as a reflection of the sense of heightened activation attendant upon the reduction of debilitating discomfort or distress. The explanation of dependency inhibition given for exclusive use of pain remedies
Tranquillizers, Inclusive Use

$$\begin{aligned} G\text{-TRANQUIL} = & 1.8(48S) - 1.7(21S) + 1.5(35S) + 1.4(14S) - \\ & 1.3(40S) + 1.1(52S) - 0.9(36S) - 0.9(23S) + \\ & 0.7(17S) - 0.6(03S) + 0.5(44S) + 0.5(26S) + \\ & 0.5(09S) + 0.5(01S) + 0.4(37S) - 1.7(48N) + \\ & 1.6(36N) + 0.4(62S) - 1.5(13N) - 0.3(20S) - \\ & 0.2(04S) - 0.8(02N) + 0.7(44N) - 0.6(26N) - \\ & 0.2(47S) + 0.5(24N) - 0.4(47N) - 0.4(22N) - \\ & 0.1(51S) + 0.3(23N) - 0.2(25N) + 0.1(37N) - \\ & 0.1(41N) \quad [p: .00] \end{aligned}$$

48SN: Rf Punitive Rewards 21S: rf Social Withdrawal
 35S: rf Self Depreciation 14S: Nd Vivid Images
 40S: Rf Pep Up Effect 52S: Rf Anger/Hostility
 36SN: sD Rigid Moralizations 23SN: Nd Dependency Inhibition
 17S: sD Grief Reaction 03S: sD Reactive Depression
 44SN: Nd Fast Lane Living 26SN: rf Rationalization Defence
 09S: rf Loneliness 01S: rf Social Anxiety
 37SN: sD Failure Experiences 62S: Nd Different Experiences
 13N: sD Flat Depression 20S: Rf Hedonism
 04S: Nd Stimulus Hunger 02N: Rf Social Enjoyment
 47SN: rf Physiologic Anxiety 24N: Rf Immediate Gratification
 22N: sD Subcultural Values 51S: sD Guilt Proneness
 25N: rf Paranoid Sensitivity 41N: sD Rigid Habits

probably applies here as well. In addition it may be true that, for many of the users who obtain TRANQUILLIZERS by prescription,

Characterization: Operative needs include all the common purposes of tranquilizer use (25, 51, 47, 13, 01, 09, 03, 17, 52, 21, 35, 48, 37), using conventional (41) and justifiable (26) means, to achieve immediate relief (24, 22), an hedonic state (20, 14, 44) and secondary excitement (40, 04).

Treatments might include: Creating Success, Creating Values, Creating Excitement, Creating Satisfaction, Creating Flexibility, Creating Happiness, Creating Health, Stimulus Conditioned Autonomic Response Suppression, Conflict Management Training and Transcendental Meditation.

dependency on the physician, with its formal and prescriptive aspect, may not feel like dependency on another human being.

Certainly, the expected reasons for using TRANQUILLIZERS (which may have seemed out of place with pain remedies) are represented here in social withdrawal, self depreciation, anger, grief, flat and reactive depression, loneliness, social anxiety, physiological anxiety, guilt proneness, bitterness and resentment, criticism-sensitivity and paranoid sensitivity.

TRANQUILLIZERS load with accessory features such as medications, tranquilizing and mellowing purposes and with defensiveness/psychological mindedness. But they are also associated with purposes of accompaniment and activation, and with setting, lifestyle, strength and severity under law. Perhaps these latter associations are due to other substances used with the inclusive use of TRANQUILLIZERS.

The exclusive use of ANY MEDICATION ought not to be confounded with other substance uses (which were excluded). However, again,

Any Medication, Exclusive Use

$$\begin{aligned} X\text{-ANY MED} = & - 4.9(18S) + 7.4(18N) - 1.7(38S) + 1.6(34S) - \\ & 1.4(05S) + 1.1(08S) + 1.1(53S) + (23S) + 0.6(67S) \\ & + 0.5(29S) + 0.2(41S) \quad [p: .00] \end{aligned}$$

18SN: Nd Self Enhancement 38S: rf Regulations Intolerance
34S: Nd To Be Different 05S: sD Rigid Self Image
08S: Rf Guilt Intolerance 53S: rf Somatic Depression
23S: Nd Dependency Inhibition 67S: Nd Relaxation/Calmness
29S: rf Disturbed Emotions 41S: sD Rigid Habits

Characterization: Operative reinforcers include relief (67) from disturbed emotions (29), depression, especially if somatized (53), and externally targeted sources of distress (38), in order to reinstate expected (05) different (34) and elevated self image (18, 08) by means which remove the responsibility for vulnerability from the self (23).

Treatments might include: Creating Innocence, Enjoying Guilt, Enjoying Distress, Enjoying Failure, Reciprocal Inhibition Therapy, Assertive Training and Rational-Emotive Therapy.

it may be confounded with criminality (guilt intolerance, regulations intolerance, need to be different). There is no surprise in its relevance to disturbed emotions and somatic depression, and to the need for relaxation and calmness. It is also not surprising to find indications of rigidity, perhaps as one way to account for restriction of use of addictive substances to those which are conventionally accepted as necessary for 'health'.

ACCESSORY VARIABLES

The foregoing has been concerned with regression equations comprised of DAQ axes and their prediction of specific and generic uses of substances. What follows is concerned with regression equations and their prediction of the ACCESSORY VARIABLES defined at the beginning of this chapter. Their main relationships to substance uses have already been remarked upon in the preceding notes. Therefore, little further comment will be made about the accessory variables themselves. Noteworthy features will be remarked upon briefly. It may be worthwhile, when considering these variables, to review their operational definitions in the derivation statements appearing earlier in this chapter.

Mode: Ingest Substance, Exclusive Use

$$\begin{aligned} X\text{-INGEST} = & - 2.5(68S) + 1.9(59S) + 1.7(56S) - 1.6(36S) + \\ & 0.8(64S) - 0.8(37S) + 0.6(08S) + 2.2(33N) + \\ & 1.7(03N) + 1.6(14N) - 1.5(08N) - 1.5(25N) - \\ & 1.4(65N) + 1.4(37N) - 0.7(64N) - 0.2(50N) \quad [p: .00] \end{aligned}$$

68S: Nd Substance Dependency 59S: Nd Calm Nerves
56S: sD Masked Disappointment 36S: sD Rigid Moralizations
64SN: Nd Assert Confidence 37SN: sD Failure Experiences
08SN: Rf Guilt Intolerance 33N: rf Dogmatism

03N: sD Reactive Depression 14N: Nd Vivid Images
25N: rf Paranoid Sensitivity 65N: rf Avoid Attractiveness
50N: Rf Control Sensitivity

Characterization: Operative needs include those for a substance to effect change (68) in order to achieve calmness (59), vivid experiences (14), perhaps unrealistically (08, 33) enhanced confidence (64), in order to correct for a sense of failure (37), disappointments (56), guilt (08), depressions (03), buried traumatic experiences (65) and sensitivities (25, 50).

It will be recalled that the 'ACCESSORY' attributes or variables that were selected in the present study included three modes of use (ingested, inhaled and injected), nine purposes or functions of use (accompaniment, activation, feeling different, disinhibition, dream-production, enhancement of experience, mellowing out, opiate effect and tranquillization), and several specific associations with use (paraphernalia involved, setting of use, effect on lifestyle, compromise of the law, severity under the law, anticipated strength of substance and the respondent's degree of psychological-mindedness or defensiveness).

Mode: INGESTIBLE substances, of course, most commonly involve alcoholic beverages and psychotropic medications (referred to here as 'any medication'), with which they load. The picture obtained is not particularly counter-intuitive. Among the other accessory variables, INGESTIBLES load significantly only with the opiate function and the enhancement purpose.

Mode: INHALANTS are significantly associated, among the accessory variables, with the purpose of activation, as well as with paraphernalia, setting and lifestyle. The only counter-intuitive significant relationship is with 'any medication'.

Mode: INJECTION: One would infer that there are both drug dealers and users in our sample, or at least those involved in the

Mode: Inhale Substance, Exclusive Use

$$\begin{aligned} X\text{-INHALE} = & 1.7(53S) - (65S) - 2.8(24N) - 2.5(13N) + 0.6(31S) + \\ & 2(18N) + 1.9(03N) + 0.4(08S) - 0.4(41S) - 1.2(45N) \\ & + 0.9(23N) + 0.5(30N) - 0.4(65N) + 0.4(33N) - \\ & 0.1(54S) + 0.2(31N) + 0.1(07N) \quad [p: .03] \end{aligned}$$

53S: rf Somatic Depression 65SN: rf Avoid Attractiveness
24N: Rf Immediate Gratification 13N: sD Flat Depression

31SN: Nd Put Down Others 18N: Nd Self Enhancement
 03N: sD Reactive Depression 08S: Rf Guilt Intolerance
 41S: sD Rigid Habits 45N: rf Hypoglycaemia
 23N: Nd Dependency Inhibition 30N: rf Deny Affect
 33N: rf Dogmatism 54S: Nd Hungry Heart
 07N: Nd Aggression Inhibition

Characterization: Operative needs include those requiring reliance on external agents (23) to achieve immediate relief (24) from multiform depressions (13, 53, 03), self (65, 18) and other (31) depreciation, loneliness (54), inhibited anger (07, 30) and somatic distress (45, 53), which the person cannot dispel due to cognitive rigidity (33, 41).

'tracking' subculture. The accessory variables that are significantly related to INJECTABLE substance use include, of course, 'any drugs', the purposes of activation, disinhibition and dream-production, as well as paraphernalia used, setting, lifestyle and severity under law.

Mode: Inject Substances, Exclusive Use

$$\begin{aligned} X\text{-INJECT} = & 1.9(16S) - 0.9(62S) - 0.7(14S) - 0.5(19S) + \\ & 1.5(62N) - 0.4(30S) - 1.3(36N) - 0.3(10S) + \\ & 0.8(19N) + 0.1(36S) + 0.1(42S) + 0.3(27N) - \\ & 0.3(30N) - 0.3(42N) - 0.3(67N) - 0.1(28S) + \\ & 0.2(14N) \quad [p: .01] \end{aligned}$$

16S: Rf Control Others 62SN: Nd Different Experiences
 14SN: Nd Vivid Images 19SN: sD Pain Sensitivity
 30SN: rf Deny Affect 36NS: sD Rigid Moralizations
 10S: Nd Social Contact 42SN: Rf Easy Going Enjoyment
 27N: Rf Oppressive Inhibitions 67N: Nd Relaxation/Calmness
 28S: Rf Comfortable Inhibition

Characterization: Operative needs include strong inhibitive pressures (27, 28) to prevent affective responses (30, 36), perhaps in the attempt to control others (16), but in a context of achieving different experiences (62) in social contact (10), bright experiences (14), calmness (67) and fun and enjoyment (42).

Purpose: ACCOMPANIMENT is significantly associated with the

purposes of different experience, disinhibition, tranquillizing, dreams and sleep (opiate), and with paraphernalia, lifestyle and setting. However, the reason why ACCOMPANIMENT is also associated with 'any drug' and 'any medication' use is not immediately apparent. Perhaps this last observation is due to the fact that ACCOMPANIMENT is significantly associated with inclusive use of all the substances assayed except for home brew, brandy, scotch and mushrooms -- i.e., with almost any drug and any medication.

Purpose: Accompaniment, Exclusive Use

$$X-ACCOMPANY = 0.1(14S) + 0.4(37N) - 0.2(34N) + 0.1(44N) - 0.1(12N) - 0.1(04N) + 0.1(45N) \quad [p: .07]$$

14S: Nd Vivid Images 37N: sD Failure Experiences
 34N: Nd To Be Different 44N: Nd Fast Lane Living
 12N: Nd Rebelliousness 04N: Nd Stimulus Hunger
 45N: rf Hypoglycaemia

Characterization: Operative needs include the activation of a 'sugar fix' (45), whether directly or indirectly, the need to rebel (12), perhaps against the mundane in life, and the need to create an image of importance or success (44), by creating different (34) and vivid (14), stimulating (04) experiences to compensate for felt failures of the past (37).

Purpose: ACTIVATION, arousal or excitation appears to be fuelled by a rather empty life characterized by over-control and unbending attitudes. Apparently, enhancing personal experience as a compensatory act may include both increasing the difference and vividness of experiences, and feeling in control of others.

Purpose: Activation/Excitement, Exclusive Use

$$X-ACTIVATE = - 2.4(34N) - 0.5(16S) - 0.4(14S) + 1.2(36N) + 1.2(14N) - 0.5(05N) + 0.1(36S) + 0.1(16N)$$

34N: Nd To Be Different 16SN: Rf Control Others
 14SN: Nd Vivid Images 36NS: sD Rigid Moralizations
 05N: sD Rigid Self Image [p: .00]

Characterization: The operative needs include rigid attitudes and self control (05, 36), partly to control others (16) and, partly to compensate for the rigidity and restriction of

personal experience, to feel different (34) and to foster vivid images (14).

Significantly associated accessory variables include the enhancement and opiate purposes, as well as paraphernalia, lifestyle and setting. There is a significant association with exclusive use of 'any drugs' and cigarettes, and with inclusive use of all the substances except beer, home brew, scotch and peyote.

Purpose: DIFFERENT EXPERIENCES involves states that are similar to those expected, including guilt-based self- and other-depreciation, and the need for underlying feelings to be changed. Apparently, exclusive use of 'any drugs', pain medications and brandy can help to achieve this purpose. It is also significantly associated with the opiate and tranquillization purposes. Like all the other accessory variables, it is associated with paraphernalia, setting and lifestyle.

Purpose: Different Self/Experience, Exclusive Use

$$X\text{-DIFFERENT} = 1.9(35S) - 1.8(51N) + 1.1(31N) + 0.6(68N) + 0.4(24N) \quad [p: .00]$$

35S: rf Self Depreciation 51N: sD Guilt Proneness

31N: Nd Put Down Others 68N: Nd Substance Dependency

24N: Rf Immediate Gratification

Characterization: Operative needs include those involved in guilt proneness (51), leading to self (35) and other (31) depreciation, and the needs to achieve immediate relief (24) through exogenous sources (68).

Among the inclusive uses of substances, the purpose to achieve DIFFERENT EXPERIENCES is significantly associated with crack, heroin, morphine, marijuana, LSD and speed. Unlike the DAQ axes concerned with Different Experiences (62) and Need to be Different (34), it would appear that the accessory variable of purpose to achieve DIFFERENT EXPERIENCES relates mainly to the wish to change unpleasant or anhedonic life experiences to any other experiences.

Purpose: DISINHIBITION appears to be pursued through exclusive use of 'any drug', marijuana, heroin and pain medications. It is significantly associated with the other purposes of activation, difference and the opiate and tranquillization functions, as well as the other usual ones (setting, lifestyle, paraphernalia). Among

the inclusive uses of substances, it is significantly associated

Purpose: Disinhibition, Exclusive Use

$$X\text{-DISINHIBIT} = 2.2(60S) - 1.7(26S) - 1.5(16S) - 1.3(36S) + 1.2(03S) + 1.7(26N) + (68N) + 0.5(35N)$$

60S: Nd Substance Enhancement 26SN: rf Rationalization Defence

16S: Rf Control Others 36S: sD Rigid Moralizations

03S: sD Reactive Depression 68N: Nd Substance Dependency

35N: rf Self Depreciation [p: .00]

Characterization: Operative needs include self-depreciating (35) rigid (36) rationalizations (26), by which others are controlled indirectly (16) and stress resources are used up to result in periodic depressions (03). Compensatory self-enhancement (60) is sought by exogenous means (68).

with beer, rye, scotch, wine, and all the street drugs except for mushrooms (and perhaps PCP).

Purpose: DREAMS appears to be pursued through the exclusive use of 'any drug' and even cigarettes. It is significantly related to the purposes of activation and disinhibition, as well as the other usual accessory features. Among the inclusive uses it is significantly related only to morphine, marijuana and speed, and perhaps to mushrooms, but not to opium.

Purpose: ENHANCEMENT seems to be pursued, with high stress, in the attempt to correct a failure or mistreatment history by means

Purpose: Dreams, Exclusive Use

$$X\text{-DREAMS} = 0.1(12S) - 0.2(12N) - 0.1(33S) + 0.1(03N) - 0.1(41N) + 0.1(03S) - 0.1(24S) \quad [p: .00]$$

12SN: Nd Rebelliousness 33S: rf Dogmatism

03NS: sD Reactive Depression 41N: sD Rigid Habits

24S: Rf Immediate Gratification

Characterization: Operative needs include the need to rebel (12) against the constrictive effects of the personal needs for dogmatic attitudes (33) and rigid habits (41), and to relieve depression without challenging depleted energies (03). The relief of self-imposed restraints and depression appears to be needed urgently (24).

Purpose: Enhancement of Experience, Exclusive Use

$$\begin{aligned} X\text{-ENHANCEMENT} = & 0.4(44S) - 1.4(44N) + 0.9(40N) + 0.1(03S) - \\ & 0.5(41N) + 0.2(15N) + 0.1(37N) - 0.1(21N) \\ 44SN: & \text{Nd Fast Lane Living} \quad 40N: \text{Rf Pep Up Effect} \\ 03S: & \text{sD Reactive Depression} \quad 41N: \text{sD Rigid Habits} \\ 15N: & \text{Rf Control Effort} \quad 37N: \text{sD Failure Experiences} \\ 21N: & \text{rf Social Withdrawal} \quad [p: .00] \end{aligned}$$

Characterization: Operative needs include rigid habits (41), social withdrawal (21) and stress-reactive depression (03), built upon a sense failure or of having been mistreated (37) and considerable corrective control effort (15), compensated with needs for activation (40) and special importance (44).

of careful controls, rigidity and social withdrawal -- the stress from which periodically depletes resources with depression as a consequence. Seeking compensatory excitement and high living seem to be the common reactions in this sort of state.

Purpose: Mellow Feelings, Exclusive Use

$$\begin{aligned} X\text{-MELLOW} = & 1.5(14S) + 1.4(51S) - (23S) + 0.9(41S) + 0.6(67S) + \\ & 2.1(22N) - 2(41N) - 1.3(24N) + 1.1(11N) + 0.9(23N) \\ & + 0.4(03N) \quad [p: .00] \\ 14S: & \text{Nd Vivid Images} \quad 51S: \text{sD Guilt Proneness} \\ 23SN: & \text{Nd Dependency Inhibition} \quad 41SN: \text{sD Rigid Habits} \\ 67S: & \text{Nd Relaxation/Calmness} \quad 22N: \text{sD Subcultural Values} \\ 24N: & \text{Rf Immediate Gratification} \quad 11N: \text{Rf Reality Denial} \\ 03N: & \text{sD Reactive Depression} \end{aligned}$$

Characterization: Operative needs include that for calmness and relaxation (67) coupled with vivid images or feelings (14) needing to be achieved quickly (24) to compensate for guilt feelings (51) giving rise to the competing states of reactive depression (03) and dependency inhibition (23), with the last conflict enhancing rigidity (41) and defensive denial (11), perhaps only capable of resolution in subculture involvements (22).

Purpose: MELLOW wish partly involves the conflict between the clinging reaction of depression and the inhibition of dependency,

itself arising from high levels of guilt feeling. Active conflict provides the motivation and the fuel for 'leaving the field' behaviour (reality denial), and it tends to increase the cognitive and behavioural rigidity demonstrated by the person. The MELLOW reaction seems to involve relaxation and calmness with an active (vivid images and experiences) colouring.

Purpose: Opiate, Exclusive Use

$$X\text{-OPIATE} = 2(62S) - 1.8(10S) - 1.45(41S) + 1.3(22S) + 0.7(35S) \\ - 1.5(42N) + 1.3(41N) + (10N) + 0.2(22N) \quad [p: .00]$$

62S: Nd Different Experience 10SN: Nd Social Contact
41SN: sD Rigid Habits 22SN: sD Subcultural Values
35S: rf Self Depreciation 42N: Rf Easy Going Enjoyment

Characterization: Operative needs include a subcultural (22) comfortable and easy (42) achievement of a changed experience (62) to resolve an uncomfortable rigidity (41) and conflict between social contact need (10) and self depreciation (35).

Purpose: OPIATE wish is surprising not necessarily associated with a need for sleep. Instead, it appears to be a way to resolve conflict, not necessarily by denying reality, but rather by a kind of temporary drifting away from it. The impression left here is that the 'different' experience sought is one of fading or drifting rather than denying or avoiding.

Purpose: TRANQUILLITY appears to be sought as a means by which to replace uncomfortable experience as quickly and as easily as possible with the ability to be involved in active or bright social
Purpose: Tranquillity, Exclusive Use

$$X\text{-TRANQUIL} = 1.5(37S) + 1.3(22S) + 1.2(14S) - 0.7(10S) + \\ 0.4(45S) - 0.3(42S) - 0.2(02S) - 0.8(22N) - \\ 0.7(45N) - 0.1(68S) + 0.1(24S) - 0.3(24N) + \\ 0.3(02N) - 0.3(42N) - 0.1(37N) + 0.1(14N)$$

37SN: sD Failure Experiences 22SN: sD Subcultural Values
14SN: Nd Vivid Images 10S: Nd Social Contact
45SN: rf Hypoglycaemia 42SN: Rf Easy Going Enjoyment
02SN: Rf Social Enjoyment 68S: Nd Substance Dependency
24SN: Rf Immediate Gratification [p: .00]

Characterization: Operative needs include the wish to replace uncomfortable experiences (37) and distress (45) with an easy

(42) and immediate (24) exogenous (68) means to feel free to be involved in social contact (10) and to enjoy it (02) in a bright and lively way (14).

interactions or enjoyments. As with so many of the accessory variables, the appearance of subcultural values (22) among the operative axes, while it may represent the attempt to achieve easy solutions, probably (also) represents the fact of criminality among the subjects participating in this study.

OTHER VARIABLES

No conclusions can be drawn about the role of AVAILABILITY as a variable. Although it was significantly related to many other variables, its meaning cannot be established for want of a

Substance Availability

AVAILABLE = - 1.9(45S) + 1.5(39S) - 0.9(32S) + 0.9(12S) -
0.5(44S) + 1.1(32N) + 1.1(19N) + 0.2(52S) -
0.8(52N) - 0.7(39N) + 0.7(50N) - 0.6(65N) -
0.2(60N) + 0.1(49N) ns[p: .79]

45S: rf Hypoglycaemia

39SN: rf Effort Strain

32SN: Rf Group Satisfaction

12S: Nd Rebelliousness

44S: Nd Fast Lane Living

19N: sD Pain Sensitivity

52SN: Rf Anger/Hostility

50N: Rf Control Sensitivity

65N: rf Avoid Attractiveness

60N: Nd Substance Enhancement

49N: Nd Avoid Affect

Characterization should not be attempted here since there was a non-significant relationship between this computed variable and the categorical indicator of 'availability'.

significant relationship between the ADDICAUS-derived computed variable and the indicator used to express 'AVAILABILITY'.

SETTING is significantly related to many accessory variables including exclusive use of 'any drug', 'any medication', cigarettes and marijuana, the purposes of accompaniment, activation, dreams, disinhibition, enhancement and opiate, as well as lifestyle and severity under the law.

SETTING is significantly related to all the inclusive uses of substances except for home brew, brandy, scotch and peyote.

LIFESTYLE is associated significantly with exactly the same accessory variables as 'setting'. Presumably, the two created

Setting: Tending to Isolation

$$\text{SETTING} = 1.7(18\text{S}) - (36\text{S}) + 3.8(12\text{N}) - 3.5(19\text{N}) + 0.8(04\text{S}) + 1.7(35\text{N}) - 1.5(04\text{N}) \quad [p: .00]$$

18S: Nd Self Enhancement 36S: sD Rigid Moralizations
12N: Nd Rebelliousness 19N: sD Pain Sensitivity
04SN: Nd Stimulus Hunger 35N: rf Self Depreciation

Characterization: The tendency to seek isolation as the setting for substance use seems to be driven by conflicts between rigid morality (36) and rebelliousness (12), and between pain sensitivity (19) with self depreciation (35) and sensation-seeking (04) and self enhancement (18) needs.

Lifestyle Effects

$$\text{LIFESTYLE} = 2.5(18\text{S}) - 2.3(19\text{S}) + 6(19\text{N}) - 3.5(18\text{N}) - 3.3(36\text{N}) + 3.1(12\text{N}) + 0.5(12\text{S}) - 0.4(36\text{S}) + 0.3(26\text{S})$$

18SN: Nd Self Enhancement 19SN: sD Pain Sensitivity
36NS: sD Rigid Moralizations 12NS: Nd Rebelliousness
26S: rf Rationalization Defence [p: .00]

Characterization: The acceptance in substance abuses of high degrees of loss of freedom and interference with lifestyle is driven by strong needs for pain relief (19), rebelliousness (12) and self enhancement (18), supported by rigid attitudes (36) and ample rationalization (26).

variables were not sufficiently distinguished from one another to be meaningfully discriminating.

COMPROMISE of the law turns out to be a weak or meaningless variable. Its only significant associations were with exclusive use of beer and, possibly, alcohol or drugs. But then it was only very weakly associated with the distributed indicator of COMPROMISE of the law.

Compromise of the Law

$$\text{LAW CMPR} = (8) - 0.2(26\text{N}) \quad [p: .08]$$

26N: rf Rationalization Defence

Characterization: The extension of lifestyle interference to readiness to compromise the law appears to hang largely on excessive use of rationalization as a defence (26).

Severity Under the Law

LAW SEVERITY = 1.4(06S) - 0.6(36S) - 0.8(36N) - 0.1(06N)[p:.00
06SN: Nd Social Influence 36SN: sD Rigid Moralizations

Characterization: The extension of readiness to compromise the law to infractions of high degrees of legal severity seems to depend upon the rigidity of the person's attitudes (36) along with susceptibility to peer influence (06).

SEVERITY under the law is associated significantly with exclusive use of 'any drug', the activating purpose, as well as

Perceived Strength/Potency

STRENGTH = - 1.8(40S) + 1.8(39S) + 1.7(49S) - 1.7(53S) +
1.3(31S) - 2.3(31N) - 0.4(27S) + 1.3(27N) +
1.3(18N) + 0.8(28N) - 0.5(67N) - 0.4(56N) +
0.2(13N) - 0.1(23N) + 0.1(41N) [p: .00]
40S: Rf Pep Up Effect 39S: rf Effort Strain
49S: Nd Avoid Affect 53S: rf Somatic Depression
31SN: Nd Put Down Others 27SN: Rf Oppressive Inhibition
18N: Nd Self Enhancement 28N: Rf Comfortable Inhibition
67N: Nd Relaxation/Calmness 56N: sD Masked Disappointment
13N: sD Flat Depression 23N: Nd Dependency Inhibition
41N: sD Rigid Habits

Characterization: Perceived potency of a substance appears to be a complex function comprised of its relief effects on avoiding feelings (49), avoiding pressures (39), depressions (13, 53), somatic symptoms (53), inhibitions (27, 28, 41), social conflicts (23, 31) and disappointments (56), and of its effects in generating positive experiences of being relaxed (67), activated (40) and enhanced (18).

setting and lifestyle. But it also associated with cigarette use for reasons unknown. This computed variable is significantly

associated with inclusive use of beer, rum, rye and wine, and all the specific drugs except cocaine, hashish, peyote and opium. That is, this is another accessory variable for which there is reason to doubt its meaningfulness.

STRENGTH is significantly related to exclusive use of 'any drug', beer and heroin, and purposes of difference, disinhibition and opiate, as well as setting, lifestyle and paraphernalia. Among the inclusive uses, it is significantly related to heroin, PCP, morphine and tranquillizers, and perhaps to crack, rye and beer.

PARAPHERNALIA is associated with exclusive use of 'any drug' and 'any medication', the mode of injection, the purposes of activation, difference, disinhibition, opiate and tranquillizer, as well as with setting and lifestyle. Strangely, its inclusive uses, are associated with all the substances except for home brew (?), brandy (?), scotch and peyote. The world is full of surprises.

Psychological-mindedness appears to be a 'DEFENSIVENESS' variable. However, its significant association with essentially all the accessory variables renders it relatively meaningless.

Associated Paraphernalia

$$\begin{aligned} \text{PARAPHERNALIA} = & - 0.7(68\text{S}) + 0.6(04\text{S}) + 0.4(18\text{S}) + 1.8(68\text{N}) - \\ & 1.7(36\text{N}) + 1.7(37\text{N}) - 1.2(04\text{N}) - 0.2(49\text{S}) + \\ & 0.2(12\text{S}) - 0.2(36\text{S}) + 0.8(25\text{N}) - 0.7(15\text{N}) - \\ & 0.2(17\text{S}) + 0.1(53\text{S}) + 0.2(12\text{N}) \quad [p: .00] \end{aligned}$$

68SN: Nd Substance Dependency 04SN: Nd Stimulus Hunger

18S: Nd Self Enhancement 36NS: sD Rigid Moralizations

37N: sD Failure Experiences 49S: Nd Avoid Affect

12SN: Nd Rebelliousness 25N: rf Paranoid Sensitivity

15N: Rf Control Effort 17S: sD Grief Reaction

53S: rf Somatic Depression

Characterization: Paraphernalia use is associated with externalization of responsibility for personal experience in that all its loading variables seem to attribute personal effects to exogenous events such as substances (68), activating stimuli (04), social field self enhancement (18), rigid (mostly other-directed) moralizations (36), failure experiences with an overtone of mistreatment (37), avoiding affective responses of and to others (49), rebellion against perceived external restraints (12), external projection of personal feelings (25), effort of control personal feelings from exposure to others (15), grief about loss of an external resource (17) and bodily-projected depression (53).

Psychological Mindedness or Defensiveness

DEFENSIVE = 2.7(18S) - 6.9(18N) + 6(11N) - 0.6(11S) [p: .00]
18SN: Nd Self Enhancement 11NS: Rf Reality Denial

Characterization: It would appear that the 'psychological-mindedness' variable is mainly a 'defensiveness' variable since it seems to be responsive mainly to defensive self-enhancement (18) and reality denial (11) needs.

So much for the ADDICAUS-derived snapshots of addictive behaviour. Only time and use will tell whether anything meaningful has been captured in them. User dialogue on this matter will be greatly appreciated.

CLINICAL APPLICATIONS II

An experiment was conducted as an exercise in construct validation and to evaluate the precision of the scales. The purpose of the experiment was to discover whether the ADDICAUS scales could measure changes resulting from treatment directed specifically at types of causes of addictions identified by the ADDICAUS test. Construct validation would require that an application derived from the theory underlying the instrument affected the test as predicted. Confirmation of precision would require that the application alters the predicted but not the unpredicted measures (axes) -- i.e., the effects achieved on the measures should ideally be differentiated and accurate. There were several steps involved in preparing for this experiment.

Clinical and Research Design Considerations

Task reduction: It would be impractical to try to modify every kind of addiction in a single treatment study. Alcohol and drug addictions are the most worrisome to the community. They were also the most common addictions among the criminal offenders available to serve as experimental subjects. And, in contrast to food, tobacco and medication addictions, alcohol and/or drug addictions might be related to some offenders' criminal conduct -- thus justifying use of justice system records to provide a basis for long-term follow-up of addictive behaviour. It was decided to select alcohol and drug abuse as the targets for the experiment.

Test reduction: Repeated administration of the whole ADDICAUS test would impose heavily on subjects. It seemed appropriate to reduce the test to a manageable length. Twenty axes seemed a reasonable number. The axes for the short-form of the test were

selected based on their apparent relevance to the target addictions (number of an axis' entries in discriminant function classification of alcohol and/or drug uses) and on their apparent relevance to the test as a whole (apparent role in the factor structure of the test axes). That is, the attempt was made to select axes inclusively and for their generic relevance to alcohol and drug abuse. The 20-axis short-form test selected for use appears in Appendix A. For a more detailed explanation see Quirk and Reynolds (1997).

Reduction to simple structure: Factor analyses of the twenty selected axes suggested that the underlying meaning of the test's short-form could be reduced to nine basic variables. The essential nature of each of these nine variables was honed, in repeated attempts to characterize them. This was done by assembling groups of the twenty axes in such a way that (1) a single axis seemed central to each group, and (2) the underlying meaning of each group was coherent (a) with one of nine basic variables and (b) with the availability of treatment means by which to modify the variable that seemed best to express the essential nature of the group. By proceeding in this clinical and analogical way, eventually, nine treatment targets were defined, each with its own identity and treatment strategy. The targets, treatment titles and associated axis numbers (with the single central and primary one underscored, a secondary single one underscored in brackets, and those others considered most generally relevant presented in bold) are displayed below in the Table of Treatments and Related Axes.

Tx# General Concept Treatment Name Conceptual Contents and Related Axes

1. Failure History/
Expectation Creating ... Failure/Punishment
 SUCCESS 03,12,13,20,24,(37),47,48

2. Inflexibility Creating ... Rigid/Inflexible Habits/Adjustment
 FLEXIBILITY 08.(12),36,37,47

3. Excitement-Seeking Creating ... Apathy/Inhibition --> Stimulus-Hunger
 EXCITEMENT 12,20,24,30,37,40,(60n)

4. Gratification Need Creating ... Immediate Satisfaction/Relief Need
 SATISFACTION 10,12,(13),20,24,36,37,40,44,47,48,53

5. Conflicted Values Creating ... Subcultural/Primitive/Regressive
 VALUES (08),12,13,22,34,36,37,40,44,47,48

6. Guilt Intolerance Creating ... Guilt-Proneness or Guilt Intolerance
 INNOCENCE 02,08,12,30,36,37,48,(60)

7. Distress Creating ... Ill-Health/Stress/Distress/Anxiety
HEALTH 03,08,13,22,34,37,44,(47),53
8. Joylessness Creating ... Depression/Joylessness/Unfulfillment
HAPPINESS 03,08,10,12,(13),22,30,36,40,48,53,60
9. Weak Integration Creating ... A/Anti-Social Adjustment/Integration
INTEGRATION 08,10,12,13,20,(22),30,34,36,37,40,44

Nine different treatment programs were devised, each to address one of the nine concepts or treatment titles. Obviously, it is beyond the scope of a test manual to describe the treatment programs selected (see Quirk & Reynolds, 1996). However, the logic underlying the nine treatments begins to be discernible from the logic involved in selecting the nine specific axes (and another secondary specific axis for each, underscored in brackets above) to represent the nine 'simple structure' concepts.

Treatment 1 (Creating Success) was designed most specifically to affect DAQ axis 48 (History of Punitive Reinforcements), that is, failure expectations (also relevant to axis 37, with its loading of failure history).

Treatment 2 (Creating Flexibility) was designed most specifically to affect DAQ axis 36 (Rigid Moralizations) or fixed attitudes, beliefs and addictive inflexibility (also relevant to axis 12 concerned with rebelliousness).

Treatment 3 (Creating Excitement) was designed most specifically to affect DAQ axis 37 (Paroxysmal or ADD) or the need pressure of 'grown up' ADDs for excitement (also relevant to the 'N' aspect of DAQ axis 60, with its rewarding effect of excitement obtained from exogenous events).

Treatment 4 (Creating Satisfaction) was designed most specifically to affect DAQ axis 47 (Physiological Anxiety) by turning the subject's attention to here-and-now external sources of gratification, thus to distract the person from preoccupation with worries about internal distress (but also relevant to correcting the joylessness of axis 13).

Treatment 5 (Creating Values) was designed most specifically to affect DAQ axis 22 (Subcultural Values) in order to foster the development of values that might support a pro-social adjustment and life-style (also relevant to avoidance of guilt feelings expressed in axis 08).

Treatment 6 (Creating Innocence) was designed most directly to affect DAQ axis 08 (Guilt Intolerance) or the poignant sense of guilt that the subject seeks to ignore or deny in defensive intolerance (also relevant to the aspect of axis 60 concerned

with others' attitudes toward addictions).

Treatment 7 (Creating Health) was designed most specifically to affect DAQ axis 44 (desire for Fast Lane Living) by altering the implicit motto: 'I will live fast, die young ...' with a focus of attention on health and its maintenance (but also relevant to the subjective experience of physiological anxieties of axis 47).

Treatment 8 (Creating Happiness) was designed most directly to affect DAQ axis 40 (Pep Up Need) by countering the depressive undertones underlying this need with a continuous happy and joyful adjustment (but also relevant to relieving the joyless depression of axis 13).

Treatment 9 (Creating Integration) was designed most directly to affect DAQ axis 30 (Affect Denial). The generality of affect denial, underlying several variables (including Guilt Intolerance, Rebelliousness in the face of Authority, Flat Depression, Hedonism, etc.), recommended this axis or variable as the one most likely to represent the inclusiveness or generality desired in the last programme (with a secondary planned effect on axis 22 with its socially disconnected and anti-social implications).

It is acknowledged that the derivation methods for the above variables and the treatments for them are imperfectly explained. There is an element of analogical thinking involved that it is impossible to recreate in words. And the particular experiences in psychotherapy and clinical psychology in general that the author has had, participated strongly in the selection process. These varied experiences also defy description. Still, an attempt is made elsewhere (Quirk & Reynolds, 1996) to explain the treatment elements included in each of the above treatment programs.

Mode of Treatment: The experimental design (later) would certainly require a relatively large number of subjects. If treatment was offered individually or in small groups, the time involved in the whole task would be unmanageable, and the treatments afforded the different individuals or small groups could be expected to differ considerably due to the individuals involved and the number of different therapists that would be required. Consequently, conventional treatment formats were excluded from the start.

Large-group (25 to 70 inmates at a time), day-long (4-hours) treatment workshops of certain kinds had been shown to be capable of having treatment effects as large as equivalent programs run individually (Quirk and Reynolds, 1991). It was decided to employ the 'large group', day-long treatment workshop format as the means by which the experimental treatments would be implemented.

Scheduling treatments and their components: In order to

minimize disruption of ongoing treatment programs, this series of treatment workshops was scheduled at fortnightly intervals. There would be a two month break toward the middle of the present series of treatments due to a protracted leave planned by the author. The first four treatments were intended to address reinforcements/perpetuating causes in the main, and they could be implemented prior to the break. The remaining five were to be concerned mainly with needs/final causes, and it was decided that they would be implemented following the interruption.

Each treatment day began at 9:00 AM and ended at 4:30 PM. Due to institutional counts, coffee-breaks and lunch periods, each treatment day would have to be composed of four, roughly one-hour, blocks of time: 9:00 to 10:00, 10:30 to 11:30, 1:30 to 2:30 and 3:30 to 4:30. The four time blocks were used in the following way in all the present treatment workshops:

1st block: Orientation: To direct participants' thoughts and points of view into areas and ideas that might foster therapeutic involvement with the methods to be used.

2nd block: Tools: To provide participants with relevant psychological tools that they might use on their own to foster therapeutic change -- self-help methods.

3rd block: Therapeutics: To get all participants involved in performing specific therapeutic acts to provide specific in-session treatments aimed at the targets of treatment.

4th block: Summary and Integration: To repeat and summarize the day's activities, to introduce means by which participants might consolidate what had been learned and integrate it in daily life. And, if time permitted, other brief therapeutic procedures would be performed.

With a brashness that some might think exceeds folly, based on previous large-group treatment experiences, it was decided that each of the nine treatment components would be addressed in a separate single-day (4-hour) treatment workshop. This meant that nine day-long programmes would be devoted to the present evaluation study, with four preceding the break and five following it.

Subjects included were all qualifying inmates who were residents of any of the five Ontario Correctional Institute (O.C.I.) treatment units during the time when the experimental treatment program was being conducted. O.C.I. is a 220-bed correctional centre, for adult male convicted offenders serving less than two year sentences. Treatment is the main correctional program. Inmates are sent to the O.C.I. if they apply for treatment during incarceration, if there is a court recommendation for assessment or treatment of any kind, if their offenses include arson or sexual or violent acts, if correctional staff consider them to exhibit significant mental or emotional problems, and/or if

they pose problems of institutional classification (most often due to addictions). Inmates may be admitted to a treatment unit from the intake unit if they apply for treatment and display significant treatment needs.

To qualify for inclusion as a subject for this study, inmates had MAST (Michigan Alcoholism Screening Test) or DAST (Drug Abuse Screening Test) scores greater than nine, suggesting significant 'cost' in inconvenience from involvement with alcohol and/or drugs. Some inmates with slightly lower scores were included if they had complained of major problems with alcohol and/or drugs. The total subject pool for this (ADDICURE) study included 75% of the inmates on treatment units over the study period (last half of 1993).

O.C.I. treatment unit residents were invited to attend, and admitted at, only and all those day-long treatment programs to which they were assigned according to their experimental group membership, as described below.

Since inmates are admitted from the intake unit to treatment units as beds become available, it was concluded that, on any given date, residents' release dates would not be subject to any study-relevant systematic effects. Consequently, discharge dates might serve as convenient and satisfactory means by which to randomize assignment of subjects to groups. Subjects were therefore assigned to experimental conditions strictly based on their release dates.

Experimental Design: Five levels of amount of treatment were selected. They were: (c) no ADDICURE treatment (Control subjects), (e..m) one (only) ADDICURE treatment, (a) four ADDICURE treatments (Treatments 1 to 4 -- primarily focused on reinforcement effects), (b) five ADDICURE treatments (Treatments 5 to 9 -- primarily focused on needs/final causes), and (d) all nine of the ADDICURE treatments. This gave rise to the following experimental groups:

- (c) invited to attend no (zero) treatment programs (N=30),
- (a) invited to attend the first 4 treatment programs (N=20),
- (b) invited to attend the last 5 treatment programs (N=20),
- (d) invited to attend all 9 treatment programs (N=24), and
- (e-m) 9 groups, each invited to attend a single different treatment program (e-mN=11).

Independent Variable: It was recognized that four hours of treatment would be minimal time in which to achieve therapeutic benefits. It was decided that, in order to be included in the data analyses as having 'received a treatment program', experimental subjects should have attended at least a majority of the time for that program. Consequently, the independent variable for the experiment was set at 3 or 4 hours as compared to (the Control's) 0 hours of attendance at each separate treatment program.

Testing: All newly admitted inmates, whether or not they would remain for treatment at the O.C.I., were administered a

series of tests at the point of their admission to the O.C.I. intake unit. The test battery in use during this study included a test of criminality (STFB: Reynolds, 1996), Minnesota Multiphasic Personality Inventory (MMPI), Michigan Alcoholism Screening Test (MAST), Drug Abuse Screening Test (DAST) and some other tests unrelated to this study.

Pre-testing of the subject groups was undertaken about a month prior to their involvement in the ADDICURE project. At that time, the 20-axis ADDICAUS and the STFB were re-administered to subjects.

Post-test: Depending on subject availability, the 20-axis ADDICAUS (DAQ) and the STFB were re-administered to all research subjects a month or more following their last treatment (for the experimental groups) or their pre-test (control group).

Processing of Dependent Measures: The regression of each post-treatment measure on its pre-treatment counterpart was computed for all the DAQ ('S' and 'N' scores for all 20 axes), and standardized residual gain scores were calculated. The residual gain scores for the twenty DAQ 'S', the twenty DAQ 'N' scores served as dependent measures in this study.

Construct validation

Construct validation requires that an application (the ADDICURE treatments) derived from the theory underlying the instrument being validated (ADDICAUS) can be shown to behave as the theory would predict. Tables 1 and 2 (Appendix B) provide the required information. Tables 1 (Table of S scores) and 2 (Table of N scores) show that all nine treatments significantly modified all the specific primary ADDICAUS axes (and all but one or two of the specific secondary axes) they were designed to target. That is, the treatments derived from the theory underlying the axes modified the scales as predicted. Thus, the experiment provides evidence of good construct validity for the ADDICAUS axes.

Precision

Precision, as the most basic feature of reliability of an instrument, was not demonstrated in the Manual's section on reliability. Precision of an instrument would be demonstrated most directly if the various parts of the instrument (a) respond to record changes of relevant and specific kinds, and (b) respond differentially to discriminably different treatments. That is, if ADDICAUS (a) records treatment effects in meaningful ways, it possesses satisfactory precision, and (b) records treatment effects differentially, it possesses a high degree of precision.

Tables 1 and 2 (Appendix B) are structured such that the specific DAQ axes on which the primary effects were expected are presented in the same order as the treatment programs devised to treat them. Consequently, under the experimental hypothesis of 'differential treatment', the main significant probabilities

(displayed in bold type) should ideally be found on the diagonal of cells from upper left to lower right -- underlined in the tables to mark cells predicted to display significant findings. The axes of secondary relevance to each treatment are underlined in brackets.

Tables 1 ('S' scores) and 2 ('N' scores) indicate that significant treatment effects were achieved, and that differential treatment was also achieved. Significant probabilities were found for all (100%) of the single treatment effects on their most relevant single axes -- upper-left to lower-right diagonal of each table's cells.

It is true that differential treatment effects did not achieve an absolutely perfect match with the 'ideal'. From the two tables, fifteen (83%) of the eighteen results with the nine secondary axes selected to represent the treatments display significant treatment effects, but three do not. Also, fifty-four (52%) of the tertiary predictions were confirmed and forty-nine (48%) were not. And twelve (12%) of the statistically significant findings in the two tables were not predicted (see above Table of Treatments and Related Axes, under Clinical and Research Design Considerations).

The gradient among the percentages noted in the last two paragraphs (100% -- 83% -- 52% -- 12%) may serve as a reminder that the treatment programs were designed inclusively to address the widest possible range of ADDICAUS axes (see Clinical and Research Design Considerations: Reduction to Simple Structure). That is, the treatments were intended to affect other axes beyond the primary and secondary ones selected to represent the treatment targets. Moreover, considering the ninety-seven cells in both tables displaying statistically significant findings, thirty-four (35%) occur with the two (22%) most inclusive or general treatments (#4 and #9).

Taken together, the present results indicate that an unusually high degree of differential treatment was achieved, and that the ADDICAUS scales were highly sensitive to the differences among the treatments employed. Therefore, the results obtained warrant the conclusion that the ADDICAUS scales are possessed of a very high degree of precision. That is, the experimental results indicate that the ADDICAUS has excellent psychometric properties in the essential requirements for both validity and reliability.

Transfer of Training

Extraordinary degrees of construct validity and precision, and even unusually good treatment effects on test measures, are of limited value if only the test measures change. The overall target of treatment was to be addictive behaviour, with test score changes hopefully representing changes in such behaviour. However, it is always difficult to discover whether addictive behaviour has been affected by any treatment.

From the perspective of discovering change in addictive behaviour, if any, the status of the participants in the present study as incarcerated offenders offered a possibility. Although their criminal conduct could not validly be affirmed to be caused entirely by their addictive behaviour, there is reason to suppose that the two are not unrelated. Many of the subjects' offenses were directly related to drug (e.g., drug possession/trafficking) or alcohol (e.g., impaired driving) use; many of their property offenses were alleged to have been performed to support addictive habits; and many of their offenses were claimed to have occurred under the disinhibiting influence of addictive substances. Thus, although acknowledging that there will be error in the use of justice system records of subsequent criminal offenses as indices of addictive behaviour, it might be worthwhile to use this method to obtain suggestive information about relapse into addictions. After all, every measure contains some error.

The justice system records of the subjects from the study just reported were obtained for each subject two years (mean: 25 months) following his release from the sentence in which he was treated. Of course, nothing works quite the way one expects. The findings are reported here in three ways. More detail about these results is provided in Quirk and Reynolds (1997).

First, considering only those subjects from the experimental and control groups assigned to one specific treatment, the results are not too encouraging. Although 11 of the 20 S-scores and 12 of the 20 N-scores on the DAQ were significantly affected, only 2 of the S-scores and 1 of the N-scores specifically targeted by the nine treatment were affected as predicted. And none of the single treatments affected our measures of recidivism. Of course, the number of subjects in each group was quite small (mean N = 9, range: 5-13), really too small to permit control of variability and thus meaningful significance estimates.

Second, considering those subjects who received each treatment regardless of whether or not they received other treatments, the results are more encouraging. Evaluated in this way, the treatment group numbers were more in line with those of the control group (Control N = 45; mean Treatment N = 35, range: 26-45). Comparing the rates in the experimental and control groups, the first eight treatments (but not the ninth; N=26) were associated with significant reductions in criminal recidivism. Since the ninth treatment was intended to be the most inclusive and general program, these apparently encouraging findings are somewhat less reassuring than one might wish.

Third, if the treatments have a 'real' effect on recidivism, the effects might be observable in the absolute amount of treatment required to prevent further recidivism. Although the numbers of

subjects receiving a plurality of treatments declines as number of treatments increases, these data indicate that more than any five (5) treatments from this series results in zero (0) recidivism rates (Table 3). Survival (time elapsed without recidivism) is extended with lesser amounts of treatment -- apparently as little as any three (3) treatments increases survival time. It will take further study to tease out just what these findings might mean.

Replication

Findings from only one study are always suspect. Another study was performed with another group of O.C.I. inmates during the summer of 1995, two years following the treatment study reported above. In this new study, only two of the nine variables addressed in the former study were subjected to scrutiny.

There were three reasons for changing the approach adopted. First, it was necessary to replicate results from two former studies -- the ADDICURE study described above, and another study in which criminality factors were identified and modified (Reynolds & Quirk, 1996). Only two of the factors identified were apparently common to both the addictions and criminality projects -- namely, the variables referred to above as Guilt Intolerance (Creating Innocence) and Failure Intolerance (Creating Success). Second, it was concluded that it would be wise to see what happened if the 'amount of treatment' was increased -- from four hours to twelve hours per variable (i.e., from one to three day-long treatments). Third, there was some reason to question the randomization method used in the ADDICURE and criminality studies. Although none could be detected, there might be some confounding effect from using date of discharge as the means to randomize subject selection to groups. It seemed wise to try another method of group assignment in the replication study.

In the new study, groups of three inmates from the same O.C.I. treatment unit and of roughly the same ages were assembled until twenty-four triads were obtained. These inmates were selected such that (1) they were all recidivists prior to their current offenses (i.e., behaviourally high at risk of future criminal recidivism), (2) they all claimed that resistant addictions were basic to their criminal conduct (i.e., behaviourally high at risk of future relapse into addictions), (3) they all scored high on criminality-related scales (e.g., Pd, Habitual Criminality) on the MMPI (i.e., cognitively acknowledging criminality), and (4) they all scored high on the MAST and/or DAST tests of addictive behaviour (i.e., cognitively acknowledging addictions).

The groups of three inmates were then assigned at random, one to the control group and two to an experimental group. This means that the control and experimental subjects were related such that half of the control group was yoked to each of the two experimental

groups, with 24 subjects in each of the three groups.

Treatments were designed in such a way as to include as far as possible the characteristics of the guilt intolerance variables from criminality (Factor O1) and ADDICAUS (08), and the failure/inferiority intolerance variables from criminality (Factor O2) and ADDICAUS (48, 37). There was some difficulty in accommodating the elements involved in Inferiority Intolerance (criminality O2) where subjective (often somatically-projected) distress and anger (with frustration) are central, and Failure Intolerance (ADDICAUS 48 and 37) where the person's attention tends to be focused on a history of mistreatment and punishment in a complaintive way. However, treatments were designed and extended to create three day-long programs for each of the two target variables.

Pre- and post-test measures were handled as before, saving residual gain scores for each subject from the regression of the post-test on the pre-test measures. In this application, the twenty-scale short-form of the ADDICAUS test (Appendix A) was extended by the inclusion of three more axes, namely, 04: Stimulus Hunger, 16: Self-Enhancement Control and 62: Different Experience.

The results on test measures revealed that treatment #1, Creating Innocence, significantly affected both the S ($p < .08$) and N ($p < .01$) scores for ADDICAUS Guilt Intolerance (#08), and no other scale scores. Treatment #2, Creating Success, significantly affected only the N ($p < .05$) score for ADDICAUS Physiological Anxiety (#47), and no other scale score. The former finding is reassuring. The latter may reflect the difficulty in accommodating the criminality and addictions variables to one another.

Extended (2-year) follow-up has not yet been possible. However, justice system records on these subjects were retrieved an average of 15.6 months following release from the sentences in which they were treated. This follow-up duration seems acceptable since the duration of survival on the street among those who did recidivate shows a mean of 11 months (range: 1 to 16 months) to the point of recidivism.

The results reveal that both treatments significantly reduced subsequent criminal recidivism ($p < .001$), and both significantly reduced number of offence counts and offence seriousness (Quirk, et al, 1991) in the event of recidivism. Although each of the treatments undertaken was somewhat longer (12 hours) than in the former study, the narrow band of treatment effects on the test measures suggests that quite specific human qualities were addressed, with quite profound and lasting effects on the people involved.

These results are encouraging. And they suggest that the targeted variables are relevant at least to criminality, and probably to addictions -- and in a fairly precise way (considering

the 'pure' effects on the narrow range of the test variables evaluated).

Prevention

The long-term goal of this research project was to discover whether personality-focused educational programs involving large groups of people were (a) feasible, and (b) might be able to modify specific aspects of people's needs and behaviour-consequences enough to make proactive prevention possible.

We have not been able to arrange for a proper evaluation of the feasibility and effects of a proactive prevention program. Our attempts to interest educators in undertaking such an experiment were greeted with imperfect enthusiasm, and noteworthy political anxieties. However, our results to date do suggest that, given the political will, it should be possible to mount educational programs in the schools that might well nip addictions in the bud before they can emerge in full flower.

An account of the treatment programs employed in the above studies, along with a more complete explanation of the kind of educational experiment needed to test the possibility of prevention, is offered in Quirk and Reynolds (1997: On the Nature and Modification of Addictions).

Supplemental Treatment REFERENCES (textual citations: see Manual)

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APPENDIX A: Addicaus Short Form DATE: _____

DIMENSIONAL ADDICAUS QUESTIONNAIRE (DAQsf)

NAME: _____

Instructions: There are several parts to this questionnaire. Each part is as necessary as every other. Some of the questions refer to use of addictive substances. If you have never used that kind of substance, just circle 0 or check the N/A box (meaning: does Not Apply to me at all). Please answer every question, giving each one a little thought. If you have any trouble understanding the words, please ask someone for help. Take as long as it takes to do the questionnaire. PLEASE ANSWER EACH QUESTION AS YOU FEEL NOW.

Please circle the number for each statement that most nearly applies to you NOW. The numbers mean:-

0 = "false", "no", "not now", "doesn't apply to me at all"

1 = "maybe", "occasionally", "once in a while", "sometimes"

2 = "perhaps", "about as often as not", "an average amount"

3 = "probably", "I guess so", "most often", "more than not"

4 = "true", "yes", "definitely", "sure do", "nearly always"

Axis 02

I avoid intimate groups when I can be in large groups. 0 1 2 3 4
 I avoid being alone as much as possible. 0 1 2 3 4
 I try to avoid working at tasks I have to do alone. 0 1 2 3 4_
 I seek the excitement and fun of being with others. 0 1 2 3 4
 I spend as much time as I can talking with others. 0 1 2 3 4
 I feel most comfortable when I am part of a group. 0 1 2 3 4_
 I keep from feeling isolated as much as I can. 0 1 2 3 4
 I am bored or irritable when I am by myself. 0 1 2 3 4
 I feel a sense of emptiness when I am alone. 0 1 2 3 4_
 I enjoy seeing friends and going to parties. 0 1 2 3 4
 I am most at ease when I am talking with friends. 0 1 2 3 4
 I feel least uptight when I am doing social things. 0 1 2 3 4_
 SocEnj[ApprSoc/AvdSlf]+..[___][___][_][_][_][_][_][_][_][_]
 -1302+4679 z v a k c e N S

Axis 03

I give up when too many changes are happening at once. 0 1 2 3 4
 I tune out when too much is going on around me. 0 1 2 3 4
 I sometimes feel like there's a fist in my stomach. 0 1 2 3 4_
 I try to cope when things look reasonably organized. 0 1 2 3 4
 I spend time with friends when I am fairly calm. 0 1 2 3 4
 I cling on to friends when my life runs smoothly. 0 1 2 3 4_
 I feel down even when my world looks organized. 0 1 2 3 4
 I feel hurt by others even if they say they like me. 0 1 2 3 4
 I can't cope well even if things are going OK. 0 1 2 3 4_
 I try to lift my spirits when I feel I can't cope. 0 1 2 3 4
 I seek help when I have too many problems to face. 0 1 2 3 4
 I try to find relief when I have too much stress. 0 1 2 3 4_
 RctDpr[PasDsIn/ActInt]-..[___][___][_][_][_][_][_][_][_][_]
 p1379a4602 z v a k c e N S

ADDICAUS: Page 2

Axis 08

My family disapproves of using alcohol or drugs. 0 1 2 3 4
 Most people disapprove of alcohol and drug use. 0 1 2 3 4
 I feel a bit guilty when I use alcohol or drugs. 0 1 2 3 4_
 I often see others as viewing what I do as shameful. 0 1 2 3 4
 People often want me to take the blame for things. 0 1 2 3 4
 I often feel guilty even when I have done no wrong. 0 1 2 3 4_
 I feel there are far too many rules to follow. 0 1 2 3 4
 I hate having to do what others tell me to do. 0 1 2 3 4
 I feel that rules are just made to be broken. 0 1 2 3 4_
 I often show I disapprove of others' disapproval of me. 0 1 2 3 4

I often want to find ways to "stick it" to others. 0 1 2 3 4
I enjoy being a rebel. 0 1 2 3 4_
GuiIntl[AvdPas/ApprAct]+.[___][___][_][_][_][_][_][_][_][_][___]
p1346a7902 z v a k c e N S

Axis 10

I get out with other people as much as I can. 0 1 2 3 4
I try to spend lots of time talking with other people. 0 1 2 3 4
I feel the need to be close to other people. 0 1 2 3 4_
I picture myself participating in group activities. 0 1 2 3 4
When alone, I think about what I can say to others. 0 1 2 3 4
I let myself feel lonely to help me want company. 0 1 2 3 4_
When alone, I watch TV to see ways people relate. 0 1 2 3 4
I think a lot about how to get along with others. 0 1 2 3 4
I spend time alone to re-charge for social contacts. 0 1 2 3 4_
I watch groups to see how others relate together. 0 1 2 3 4
I listen to conversations to learn about people. 0 1 2 3 4
I feel the need to be part of a group of friends. 0 1 2 3 4_
SocCntct[ActSoc/PasAln]+.[___][___][_][_][_][_][_][_][_][_][___]
a1346p7902 z v a k c e N S

Axis 12

It annoys me to have to deal with the authorities. 0 1 2 3 4
I hate being given orders by anyone. 0 1 2 3 4
I think people older than me are mostly strange. 0 1 2 3 4_
I keep others from seeing when I am scared. 0 1 2 3 4
I think of myself as something of a rebel. 0 1 2 3 4
I put up a "tough" front for other people. 0 1 2 3 4_
In stores I always notice the surveillance devices. 0 1 2 3 4
I feel angry at people who try to act "too good". 0 1 2 3 4
I feel as though I have had a "raw deal" in life. 0 1 2 3 4_
I hate rules and regulations. 0 1 2 3 4
I feel I am criticized too much by others. 0 1 2 3 4
I dislike having to pay sales tax on anything. 0 1 2 3 4_
AuthReb[AprUnr/AvdReal]+.[___][___][_][_][_][_][_][_][_][_][___]
-1379+4602 z v a k c e N S

ADDICAUS: Page 3

Axis 13

Picturing the uncertain future just makes me scared. 0 1 2 3 4
Even with planning you never know what will happen. 0 1 2 3 4

If I was sure of the future, I would be disappointed. 0 1 2 3 4_
 When I picture the past I become weak and depressed. 0 1 2 3 4
 I never amounted to much so there's no hope I will. 0 1 2 3 4
 I feel my past left me empty and joyless. 0 1 2 3 4_
 The future looks just as empty and flat as the past. 0 1 2 3 4
 I think life is good only in an imagined future. 0 1 2 3 4
 I feel afraid that life will continue as it was. 0 1 2 3 4_
 Every picture of my past is upsetting or saddening. 0 1 2 3 4
 In the past I can only find rotten memories. 0 1 2 3 4
 My life feels like a joyless, empty vacuum. 0 1 2 3 4_
 FltDpr[ImpFrwd/PwrBck]-..[___][___][][][][][][][][][][]
 f1379p4602 z v a k c e N S

Axis 20

I picture lots of fun situations to get involved in. 0 1 2 3 4
 I enjoy talking and laughing a lot with my friends. 0 1 2 3 4
 All sorts of things get me excited. 0 1 2 3 4_
 I can get along OK in almost any situation or setting. 0 1 2 3 4
 What other people say doesn't upset me or "get to me". 0 1 2 3 4
 The minor injuries and pain I get don't trouble me. 0 1 2 3 4_
 There are very few situations that bother me. 0 1 2 3 4
 Nobody succeeds in conning me or pushing me around. 0 1 2 3 4
 I can enjoy activities even when I have been injured. 0 1 2 3 4_
 The main thing in life is to have a good time. 0 1 2 3 4
 I like conning or teasing those of the opposite sex. 0 1 2 3 4
 I'm always looking for exciting things to do. 0 1 2 3 4_
 Hedon[SensPls/InsnsPn]+..[___][___][][][][][][][][][][]
 a1379p4602 z v a k c e N S

Axis 22

I like hanging around with the guys in the bar or pub. 0 1 2 3 4
 Shooting-the-bull is a favourite pass-time of mine. 0 1 2 3 4
 I really like back-slapping fun with the guys. 0 1 2 3 4_
 Most people spend a lot of time drinking in bars. 0 1 2 3 4
 I am proud of how much alcohol and/or drugs I use. 0 1 2 3 4
 Most people use drugs and/or alcohol. 0 1 2 3 4_
 I think what happens in life is a matter of your luck. 0 1 2 3 4
 I think we need unions to protect workers. 0 1 2 3 4
 I'm an easy-going person, just out for a good time. 0 1 2 3 4_
 It feels good to drink someone "under the table". 0 1 2 3 4
 Telling jokes is the best kind of conversation. 0 1 2 3 4
 I am proud of the amount of booze I can drink. 0 1 2 3 4_
 SubCl[t[GdSoc/BdAln]+.....[___][___][][][][][][][][][][]

ADDICAUS: Page 4

Axis 24

- I believe anybody can influence what happens. 0 1 2 3 4
- I think that anybody's ideas contribute to any outcome. 0 1 2 3 4
- I feel heroes are ordinary people facing challenges. 0 1 2 3 4_
- I view hanging on to a dream as one way to success. 0 1 2 3 4
- I think nothing lasts through time like an idea. 0 1 2 3 4
- I feel that sticking to a task is the way to win. 0 1 2 3 4_
- I see lots in my life that I could usefully change. 0 1 2 3 4
- I can think of many ways to improve my joy in life. 0 1 2 3 4
- I am comfortable with my ability to change my life. 0 1 2 3 4_
- I can live quite happily with things I can't change. 0 1 2 3 4
- I can make friends and enjoy them as well as anyone. 0 1 2 3 4
- I feel happy and content in spite of my limitations. 0 1 2 3 4_

PIG/Resil[PwrChg/ImpPrs]+[___][___][_][_][_][_][_][_][_][_][_][_][_][_][_][_]

Axis 30

- I keep myself from being blue by being very active. 0 1 2 3 4
- I don't get down by telling myself I'm the greatest. 0 1 2 3 4
- I make myself feel high instead of being depressed. 0 1 2 3 4_
- When I feel tired I make mental pictures of success. 0 1 2 3 4
- When I start worrying, I mask my thoughts with talk. 0 1 2 3 4
- When I feel scared I energize myself with activity. 0 1 2 3 4_
- I replace sad images with excited or happy ones. 0 1 2 3 4
- I control unhappy thoughts by actively making plans. 0 1 2 3 4
- I keep from feeling sad by distracting myself. 0 1 2 3 4_
- When excited or uptight I just crank myself up more. 0 1 2 3 4
- When worried I try to solve complicated problems. 0 1 2 3 4
- When I feel scared I try to increase the sensations. 0 1 2 3 4_

AffDen[AvdBdy/ApprMnd]+..[___][___][_][_][_][_][_][_][_][_][_][_][_][_][_][_]

Axis 34

- Other people all seem to see things the same way. 0 1 2 3 4
- You can tell how others will think about anything. 0 1 2 3 4
- Other people act like rubber stamps of each other. 0 1 2 3 4_
- I prefer to see myself as "different" from others. 0 1 2 3 4
- My ideas are creative, different and original. 0 1 2 3 4

I try to have different or unusual experiences. 0 1 2 3 4_
 Most people lead dull colourless lives. 0 1 2 3 4`
 Nothing ordinary is interesting enough. 0 1 2 3 4
 I feel sorry for "square" or "straight" people. 0 1 2 3 4_
 I want to be seen by others as being different. 0 1 2 3 4
 My beliefs are different from most people's beliefs. 0 1 2 3 4
 I am different from the way others learned to be. 0 1 2 3 4_
 DiffNd[BdPrst/GdChng]+...[___][___][_][_][_][_][_][_][_][_]
 e1379i4602 z v a k c e N S

ADDICAUS: Page 5

Axis 36

I see myself as a particularly good person. 0 1 2 3 4
 I only allow myself to think and say proper things. 0 1 2 3 4
 I am careful to behave myself always as I should. 0 1 2 3 4_
 I don't like people who are not clean and groomed. 0 1 2 3 4
 I disapprove of people using foul language. 0 1 2 3 4
 I think it's silly for people to use rude gestures. 0 1 2 3 4_
 Some people don't know how to sit or walk properly. 0 1 2 3 4
 I wish people would try to speak better English. 0 1 2 3 4
 People should do as they want others to do for them. 0 1 2 3 4_
 I feel that I follow the straight and narrow path. 0 1 2 3 4
 I understand and obey the spiritual and legal laws. 0 1 2 3 4
 I feel that those who find fault with me are wrong. 0 1 2 3 4_
 RgdMrls[GdSlf/BdOth]+....[___][___][_][_][_][_][_][_][_][_]
 s1302o4679 z v a k c e N S

Axis 37

There is one kind of alcohol that changes how I act. 0 1 2 3 4
 I sometimes get drunk on just a couple of drinks. 0 1 2 3 4
 I sometimes go into uncontrolled "blind rages". 0 1 2 3 4_
 Learning to read was harder for me than for other kids. 0 1 2 3 4
 Doing arithmetic was harder for me than for other kids. 0 1 2 3 4
 Sometimes I do things I would never intend to do. 0 1 2 3 4_
 I sometimes suddenly get depressed for no reason. 0 1 2 3 4
 I sometimes "lose control" when I'm drinking. 0 1 2 3 4
 I tend to be a binge drinker. 0 1 2 3 4_
 At times I get an odd feeling -- a breeze or a smell. 0 1 2 3 4
 I sometimes think there must be a devil in me. 0 1 2 3 4
 I was told I was very "hyperactive" as a child. 0 1 2 3 4_
 Paroxys[ImpFct/Pwrlmpd]-[___][___][_][_][_][_][_][_][_][_]
 e1379i4602 z v a k c e N S

Axis 40

I look for ways to use ideas that excite me. 0 1 2 3 4
I enjoy thinking lots about things that interest me. 0 1 2 3 4
I get excited when a task I'm doing interests me. 0 1 2 3 4_
I don't let myself see difficulties in my way. 0 1 2 3 4
I stop thoughts that might make me want to give up. 0 1 2 3 4
I won't let myself get hopeless or down about anything. 0 1 2 3 4_
I look for and solve barriers that are in my way. 0 1 2 3 4
I consider what others say so I can adjust my actions. 0 1 2 3 4
I may let myself feel down to enjoy cranking back up. 0 1 2 3 4_
I may ignore something just to keep myself on edge. 0 1 2 3 4
I stop thinking about a thing to add to anticipation. 0 1 2 3 4
At times I hold back excitement so it gets stronger. 0 1 2 3 4_
PepUp[PwrFct/ImpInfct]+[____][____][_][_][_][_][_][_][_][_][_][_]
+1302-4679 z v a k c e N S

ADDICAUS: Page 6

Axis 44

I intend to live in "the fast lane". 0 1 2 3 4
I enjoy keeping lots of projects going at once. 0 1 2 3 4
I keep myself cranked up and as high as I can. 0 1 2 3 4_
I dislike seeing life going along slowly. 0 1 2 3 4
I hate it when people can't be quick and decisive. 0 1 2 3 4
I won't be slowed down by anyone if I can help it. 0 1 2 3 4_
People are mostly like sheep. They will buy anything. 0 1 2 3 4
I will keep conning others as long as they let me. 0 1 2 3 4
I won't slow down and let somebody get ahead of me. 0 1 2 3 4_
I'll live fast, die young and be an attractive corpse. 0 1 2 3 4
I don't mind if my life is short if it's exciting. 0 1 2 3 4
I want power and the feeling power gives me. 0 1 2 3 4_
FstLnLv[ApprPwr/AvdImp]+.[____][____][_][_][_][_][_][_][_][_][_][_]
+1302-4679 z v a k c e N S

Axis 46

I probably put more strain on my body than I should. 0 1 2 3 4
I guess my life style demands a lot of my body. 0 1 2 3 4
My body seems to tolerate a lot before it wipes out. 0 1 2 3 4_
I can visualize things very well in my imagination. 0 1 2 3 4
I think my mind is particularly sensitive to ideas. 0 1 2 3 4
My feelings are very sensitive and react strongly. 0 1 2 3 4_
I often forget about looking after my health. 0 1 2 3 4
I do quite a few things I know are not good for me. 0 1 2 3 4

I guess the things I do put a lot of strain on me. 0 1 2 3 4_
I'm likely to get sick in the spring and fall. 0 1 2 3 4
I seem often to get sick when I'm on vacation. 0 1 2 3 4
I have skin rashes, colds, allergies or bronchitis. 0 1 2 3 4_
AllrgStr[SnsBdy/InsnMnd]+[___][___][_][_][_][_][_][_][_][_]
d1302e4679 z v a k c e N S

Axis 47

I'm not sure I could deal well with an emergency. 0 1 2 3 4
I lie awake at night worrying. 0 1 2 3 4
Getting things done often uses up most of my energy. 0 1 2 3 4_
I tend to lose interest in things quite quickly. 0 1 2 3 4
I worry about making an embarrassing social mistake. 0 1 2 3 4
I often wake up with a jolt or a big twitch. 0 1 2 3 4_
I can get badly shaken up by the troubles I meet. 0 1 2 3 4
I can't remain calm if others don't like me. 0 1 2 3 4
I can't calm down easily if something upsets me. 0 1 2 3 4_
I am often restless, twitchy or uncomfortable. 0 1 2 3 4
I often feel jealous or possessive of people I like. 0 1 2 3 4
I tend to tremble or sweat in certain situations. 0 1 2 3 4_
PhysAnx[PwrBdy/ImpMnd]-..[___][___][_][_][_][_][_][_][_][_]
i1346a7902 z v a k c e N S

ADDICAUS: Page 7

Axis 48

I've received a lot of punishment or abuse in my life. 0 1 2 3 4
I believe that most people I know don't like me. 0 1 2 3 4
I seem to get in situations where I get into trouble. 0 1 2 3 4_
I believe that life is pretty punishing. 0 1 2 3 4
Criticism is the main kind of attention others give. 0 1 2 3 4
I just expect to have a hangover after drinking. 0 1 2 3 4_
A gift makes me wonder what the giver wants back. 0 1 2 3 4
I guess I learn best if my mistakes are pointed out. 0 1 2 3 4
I often try to find ways to "raise a little hell". 0 1 2 3 4_
Parents who shout at kids are giving them attention. 0 1 2 3 4
I wonder if punishment is one sign of parents' love. 0 1 2 3 4
When someone finishes giving me hell I feel better. 0 1 2 3 4_
PunRf[BdLrn/GdRgd]+.....[___][___][_][_][_][_][_][_][_][_]
s1379o4602 z v a k c e N S

Axis 53

My body has been feeling weak and without energy. 0 1 2 3 4
 I think that one of these days I may wake up healthy. 0 1 2 3 4
 I seem to have waited a long time to feel better. 0 1 2 3 4_
 My mind is constantly occupied with my being sick. 0 1 2 3 4
 I keep wondering "why me?" when others are healthy. 0 1 2 3 4
 I seem totally obsessed with my upset feelings. 0 1 2 3 4_
 Each day, all I see is a bleak and empty day ahead. 0 1 2 3 4
 Every thought leads me back to my unhappy state. 0 1 2 3 4
 I keep "taking my emotional pulse" to check how I feel. 0 1 2 3 4_
 Whatever I do, I have too little energy to do it. 0 1 2 3 4
 I do what my doctors tell me, but it doesn't help. 0 1 2 3 4
 No matter what I try, I just can't get going. 0 1 2 3 4_
 SomDpr[PasBdy/ActMnd]-...[___][___][_][_][_][_][_][_][_][_]
 s1379d4602 z v a k c e N S

Axis 60

I look for ways to keep cranked up and going. 0 1 2 3 4
 I think I need the rush I get from some things. 0 1 2 3 4
 Nothing can replace the high some things give me. 0 1 2 3 4_
 I don't like feeling down and like an "under dog". 0 1 2 3 4
 I don't like to feel my thoughts running slowly. 0 1 2 3 4
 I must avoid feeling old and slowed down. 0 1 2 3 4_
 I want the lift I get from some substances. 0 1 2 3 4
 I like to feel my thoughts are sharp and "right on". 0 1 2 3 4
 I enjoy getting myself active and excited. 0 1 2 3 4_
 I can't take it if everything is slow and boring. 0 1 2 3 4
 Whatever the cost, I need to feel bright and alive. 0 1 2 3 4
 I won't stand feeling down, useless or a nothing. 0 1 2 3 4_
 SubsUp[ApprUp/AvdDwn]+...[___][___][_][_][_][_][_][_][_][_]
 a1302-4679 z v a k c e N S

ADDICAUS: Page 8

Instructions: For each kind of potentially addictive substance, please thoughtfully write down what you think were the CAUSES and the EFFECTS of using each of the substances listed. "Causes" are the reasons WHY you started its use, and "effects" are HOW you felt after use.

1. Foods (eg., coffee, cola, chocolate, sweets, salty things):

CAUSES: _____

EFFECTS: _____

2. Tobacco (eg., cigarettes, cigars, pipe, chewing tobacco):

CAUSES: _____

EFFECTS: _____

3. Medications: (eg., tranquilizers, anti-depressants, pain meds):

CAUSES: [] Prescribed, or: _____

EFFECTS: _____

4. Alcohol (eg., beer, wine, hard liquor, others):

CAUSES: _____

EFFECTS: _____

5. Street Drugs (eg., pot, hash, LSD, cocaine, heroin, mushrooms):

CAUSES: _____

EFFECTS: _____

ADDICAUS: Page 9

VERY IMPORTANT Instructions: PLEASE read this page carefully and understand HOW to do the ratings requested BEFORE you go on to the last page to complete the ratings. The ratings you make need to communicate information to us, and

so it is necessary that some standards be used in how people respond to the next page.

For ANY and EVERY kind of potentially addictive FOOD, MEDICATION, TOBACCO, ALCOHOL, SOLVENT, STREET DRUG or other substance you have ever used, please mark (a) the NAME of the substance if not listed, (b) the LENGTH OF TIME YOU USED IT (in YEARS or MONTHS and circle years or months), (c) HOW STRONG YOUR USE WAS (using the rating method shown below), (d) if you stopped, HOW LONG AGO YOU STOPPED USING it, and (e) HOW STRONGLY YOU WOULD NOW LIKE TO USE it (using the same rating method shown below). Just check the N/A box if you NEVER used a named substance.

PLEASE read the instructions that follow for the rating method to use.

RATINGS: HOW TO ESTIMATE "STRENGTH OF USE" and "PRESENT WANT":

Step A: First, we have to define "ONE USE" (whether actually used in the past, or wanting use now): "ONE USE" is defined as every time you use a substance (1 to 3 of anything in a row or on one occasion) is "ONE USE". [Examples of ONE USE might include: one to three glasses of wine with a meal, or one to three cigarettes in a row, or one hit of a drug, or one to three pills popped at a time, or one or two shots of hard liquor in a row, or one or two beers, or one can/bottle of cola, or one to two cups of coffee at a time, or one fill of a pipe, or one session of gas or glue sniffing]

Step B: Now, using the above definition of "ONE USE", please rate your STRENGTH of either past USE or present WANT for each type of substance, estimated from the following table:-

0 = None or No Use or Want = Up to less than 1 use per month.

1 = Slight Use or Want = from 1 to less than 2 uses a month.

2 = Some Use/Want = 2 uses a month to less than 1 use a day.

3 = Considerable Use/Want = 1 use to less than 5 uses a day.

4 = B = Binging = any "binge" use.

5 = Heavy Use/Want = 5 uses to less than 10 uses a day.

6 = Very Heavy Use/Want = 10 uses to less than 15 uses a day.

7 = Extreme Use/Want = anything above 15 uses per day.

PLEASE USE THE ABOVE RATING METHOD TO COMPLETE THE NEXT PAGE.
SUBSTANCES: (b)Yrs or Mth (c)Ratings above (d)Months (e)Ratings above
Kind of Chemical|How Long Used| How Strong/Heavy|MonthsOff|HowStrongWantNOW
FOODSTUFFS []N/A|(never used except in moderation)-----|-----
OverEating []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Coffee---- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Cola----- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Chocolate- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Chips/Nuts []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
TOBACCO []N/A|(never used any at all)-----|-----|-----
Cigarettes []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Pipe/Cigar []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Chew Tobac []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
MEDICATION []N/A|(never used any at all)-----|-----|-----
Valium---- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Tranquiliz []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Narcotic-- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Barbiturat []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Downers--- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Uppers---- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Ritalin--- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Pain Meds- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Seltzers-- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
AntiBiotic []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
ALCOHOL []N/A|(never used any at all)-----|-----|-----
Beer/Ale-- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Rum----- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Rye----- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Gin/Vodka- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Scotch---- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Home Brew- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Brandy---- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Wine----- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Solvents-- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Other: _____|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
DRUGS []N/A|(never used any at all)-----|-----|-----
Marijuana- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Hashish--- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Opium----- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Mushrooms- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Peyote---- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
PCP----- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
Heroin---- []N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7

Morphine--[]N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
 LSD-----[]N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
 Speed-----[]N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
 Cocaine---[]N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
 Crack-----[]N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
 Other:_____ |___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
 SOLVENTS []N/A|(never used any at all)-----|-----|-----
 Gasoline--[]N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
 Glue-----[]N/A|___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7
 Other:_____ |___Years/Mths| 0 1 2 3 B 5 6 7 |___Months| 0 1 2 3 B 5 6 7

APPENDIX B

Table 1: Differential Treatment Effects on S-scores: Probabilities of ADDICURE treatment effects* on the most relevant ADDICAUS (DAQ) 'S' Axes.

TREATMENTS: CREATING
 DAQ AXES: NAME, NUMBER, SN
 Tx1
 SUCCES
 Tx2
 FLEXIB
 Tx3
 EXCITE
 Tx4
 SATISF
 Tx5
 VALUES
 Tx6
 INNOCE
 Tx7
 HEALTH
 Tx8
 HAPPIN
 Tx9
 INTEGR

Punitive Rewards Hx 48 S
 .04
 .21
 .22
 .10

.09
.36*
.24
.19*
.55

Rigid Moralization 36 S

.71
.01
.58
.35*
.40*
.36*
.23
.13*
.02

Paroxysmal Energy 37 S

(.01)
.03
.01
.00
.02
.12*
.12*
.12
.05

Physiologic Anxiety 47 S

.00
.04
.07
.00
.01
.11
(.01)
.05u
.04u

Subcultural Values 22 S

.90
.71

.22
.27
.03
.22
.10
.11*
(.05)

Guilt Intolerance 08 S

.18
.10
.06
.02u
(.01)
.01
.00
.01
.00

Fast Lane Living 44 S

.43
.85
.43
.05
.18*
.30
.04
.11
.09

Pep Up Need 40 S

.59
.62
.31*
.60*
.60*
.61
.57
.04
.15*

Affect Denial 30 S

.66
.27
.42*
.50
.39
.91*
.91
.69*
.08

Authority Rebellion 12 S

.03
(.08)
.03
.00
.02
.12*
.03u
.02
.01

Flat Depression 13 S

.20*
.57
.39
(.05)
.03
.15
.04
(.15*)
.18*

Need To Be Different 34 S

.10
.72
.09
.04u
.21*
.15
.05
.08
.01

Somatic Depression 53 S

.02u
.40
.24
.03
.20
.53
.17*
.63*
.38

Substance Excitement 60 S

.54
.48
.72
.32
.10
(.04)
.06
.10
.03u

* Two-tailed tests [Significance: predicted relationships: $p < .10$ (= .05 one-tailed);
unpredicted: $p < .05$]

Bold probabilities indicate statistically significant relationships (9 primary predicted;
(9) secondary

predicted [1* not confirmed]; 30 tertiary predicted confirmed and 22* unconfirmed;
6u unpredicted but

significant). Underlined probabilities indicate the 9 primary and (9) secondary
predicted relationships.

Table 2: Differential Treatment Effects on N-scores: Probabilities of ADDICURE
treatment effects* on the
most relevant ADDICAUS (DAQ) 'N' Axes.

TREATMENTS: CREATING
DAQ AXES: NAME, NUMBER, SN
Tx1
SUCCES
Tx2
FLEXIB

Tx3
EXCITE
Tx4
SATISF
Tx5
VALUES
Tx6
INNOCE
Tx7
HEALTH
Tx8
HAPPIN
Tx9
INTEGR

Punitive Rewards Hx 48 N

.10
.94
.66
.33*
.14*
.56*
.23
.33*
.49

Rigid Moralization 36 N

.95
.04
.72
.32*
.42*
.79*
.54
.43*
.10

Substance Excitement 37 N

(.01)
.12*
.08
.01
.05

.27*
.17*
.16
.11

Physiologic Anxiety 47 N

.03
.18*
.27
.03
.03
.31
(.02)
.09
.09

Subcultural Values 22 N

.92
.87
.34
.48
.02
.16
.06
.08
(.06)

Guilt Intolerance 08 N

.08
.03
.04u
.00u
(.00)
.01
.00
.01
.00

Fast Lane Living 44 N

.29
.82
.63

.15*
.19*
.31
.04
.19
.09

Pep Up Need 40 N

.85
.90
.49*
.85*
.29*
.57
.34
.04
.08

Affect Denial 30 N

.79
.37
.48*
.75
.32
.71*
.54
.52*
.06

Authority Rebellion 12 N

.04
(.11*)
.04
.00
.02
.12*
.02u
.02
.00

Flat Depression 13 N

.16*

.48
.32
(.08)
.02
.07
.02
(.05)
.09

Need To Be Different 34 N

.14
.97
.31
.36
.36*
.37
.20*
.26
.05

Somatic Depression 53 N

.03u
.66
.58
.13*
.18
.62
.21*
.76*
.40

Substance Excitement 60 N

.33
.74
(.75*)
.48
.16
(.06)
.12
.10
.05u

* Two-tailed tests [Significance: predicted relationships: $p < .10$ (= .05 one-tailed);

unpredicted: $p < .05$]

Bold probabilities indicate statistically significant relationships (9 primary predicted; (9) secondary

predicted (2* not confirmed); 24 tertiary predicted confirmed and 27* unconfirmed; 5u unpredicted but

significant). Underlined probabilities indicate the 9 primary and (9) secondary predicted relationships.

Table 3: 'Amount of treatment' effects on 2-year criminal recidivism rates.

Treatment 'Amount'

Tx=0

Tx > 0

Tx > 1

Tx > 2

Tx > 3

Tx > 4

Tx > 5

Subject Numbers

32

138

52

45

36

24

9

Recidivism %age

38%

30%

23%

20%

19%

21%

0%

Tx > 0 means 1 or more treatments (4+ hours); Tx > 1 means 2 or more

treatments (8+ hours); etc.