Order Number 9304690

Object relations, self-help, and recovery from cocaine addiction: An empirical study

Leggett, Christopher, Ph.D.

City University of New York, 1992

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

OBJECT RELATIONS, SELF-HELP, AND RECOVERY FROM COCAINE ADDICTION: AN EMPIRICAL STUDY

by

CHRISTOPHER LEGGETT

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

1992

This manuscript has been read and accepted for the Graduate Faculty in Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy

9/22/92
Date

Chair of Examining Committee

9/22/92
Date

Executive Officer

Anderson J. Franklin, Ph.D.
Vera S. Paster, Ph.D.
Andrew Tatarsky, Ph.D.
William King, Ph.D.
Ruth Ellen Proudfoot, Ph.D.
Supervisory Committee

The City University of New York

Abstract

OBJECT RELATIONS, SELF-HELP, AND RECOVERY FROM COCAINE ADDICTION: AN EMPIRICAL STUDY

by

Christopher Leggett

Advisor: Professor Anderson J. Franklin

A within-subjects, repeated measures design was implemented to examine the covariation of levels of object relations (OR) and reality testing (RT) with drug/alcohol relapse and affiliation with twelve-step self-help groups.

Sixty-five male DSM III-R cocaine addicts admitted to intensive outpatient drug treatment were administered the Bell Object Relations-Reality Testing Inventory, the Addiction Severity Index, and a questionnaire about 12-step group affiliation. After 90 days of treatment, the instruments were re-administered to the 35 subjects who remained in treatment.

The results indicated a wide range of ego functioning associated with compulsive abuse patterns, and some impairments seem to have been produced by the addiction. OR and RT variables significantly distinguished clinically meaningful sub-groups: high versus low relapse, high versus low 12-step affiliation during the current outpatient treatment, high versus low lifetime 12-step affiliation, 12-step attendees who used a sponsor during the current outpatient treatment versus attendees who did not, and subjects with a history of residential rehabilitation treatment versus subjects with no such history.

Certain sub-groups showed relatively greater vulnerability to regress in the face of equivalent levels of pre-treatment drug use. Those with a history of residential rehabilitation treatment and those with high levels of lifetime 12-step attendance represent two overlapping

sub-groups which have greater ego-regressive vulnerability and longer, more chronically relapsing addictions. These chronic relapsers responded well to the ego-supportive context of treatment, but have greater post-treatment difficulty maintaining abstinence. A lower socioeconomic milieu may contribute to regressive vulnerability by way of less ego-support, as may greater post-treatment RT impairment.

Self-selectors for high levels of 12-step attendance had more impaired RT than low attenders both at baseline and follow-up. 12-step membership may be particularly helpful in compensating for RT weaknesses, and may represent an attraction for those with greater RT impairment. Lower occupational categories of high attendance groups implies less environmental support for abstinent lifestyles, and may contribute to greater vulnerability for ego regression also seen in high attendance groups. 12-step attendance may compensate for these difficulties. Research with larger, more representative samples is needed.

Acknowledgements

It is customary for an author to credit the strengths of a work to those who provided advice and support, while accepting blame for the weaknesses. In my own case, to follow in this custom is no false modesty.

I wish to thank the members of my dissertation committee for their time and energy which was given so freely to assure the successful completion of this project. In particular,

Dr. A.J. Franklin who, despite an enormously busy schedule with extraordinary demands in his personal life, remained cool and confident throughout, and who imparted these sensibilities to me over the various bumps and crises of confidence I experienced along the way. A.J. knows about strength. He also knows when and how to guide decisions in ways which are always illuminating, as well as when to let the student to do the driving;

Dr. Ruth Ellen Proudfoot who endured endless drafts (both in number and length) of the Results chapter, and who managed to impart coherence despite this student's tenacious opacity. Her contribution was large, and her reputation for getting to the heart of the matter remains secure,

Dr. Vera Paster who always has time for her students, who is tireless, who is level-headed, whose confident expectation is contagious, who places great importance on the well-being of her students and who demonstrates her determination for their success through word and action;

Dr. Andrew Tatarsky who provided entrée to my subject sample, introduced me to the main instrument of the study, and whose intelligence and expertise provided many of the critical insights concerning the interpretation of the data which became central themes of the Discussion;

Dr. Bill King whose reputation for supporting and helping students is both well-known and well-deserved.

I also wish to thank my friends and colleagues in the Behavioral Sciences Training Program of the National Development and Research Institutes (NDRI) who have witnessed the

development of this project from inception through completion. It is no exaggeration to say that were it not for the technical, logistical, financial, and emotional support which they rendered, this dissertation, especially given its protracted data collection phase, would not have been possible. I am especially grateful to Drs. Bruce D. Johnson and Gregory P. Falkin who have been sources of stability, flexibility, and good counsel. I also appreciate their tolerance for my occasional disregard of their good counsel. I am indebted to Dr. Mangai Natarajan for her unstinting generosity in sharing her statistical expertise.

I want to express my deepest thanks to Dr. Arnold M. Washton and the fine staff of The Washton Institute for their generosity and support in allowing me to come in to conduct the research. During the approximately 10 months it took to collect the data, the staff demonstrated unflagging willingness to assure a successful outcome of this process through its great flexibility in allowing me use of office space, its help in keeping track of subjects, and through its good spirits and kind words of encouragement at critical moments.

Dr. JoAnne Sirey was always available to answer my questions, large and small, about how to make uncooperative computer programs work, and to give friendly, pragmatic advice on all things dissertation-related. Dr. Barbara C. Wallace graciously donated time from her busy schedule to consult on my research ideas during the early stages of this project's development. Professor Richard Mietzelfeld (Russell Sage College), philosopher, mentor, and friend, taught me much about the experience of being human, and imparted an appreciation for the essential miraculousness of life, experience, and relatedness.

Yet, the person most responsible for transforming the possible into the actual is Jan Weil, who also bore the burden of being around during certain dissertation-induced states of mind which the rest of the world was mercifully spared. I have learned much from Jan - about doing therapy certainly, but mostly about life. Jan's love, wisdom, and faith have been the sustaining forces in my life, and have been ongoing, gentle reminders of what is fundamental and what is not.

Table of Contents

List of Tables

Chapter 1

Introduction

In recent years, cocaine abuse has grown from a relatively minor problem in the United States to a major public health crisis, which has spread to "virtually all socioeconomic groups and to all geographic areas of the country" (Washton et al. 1988). The explosion of cocaine abuse and addiction has resulted in huge costs not only to the addicted individual whose health, family life, and occupational functioning is impaired or destroyed, but to society as a whole which must come to terms with such recalcitrant social concomitants of addiction as lost labor productivity, premature and brain-damaged children born of addicted mothers ("crack babies"), truancy, drug-related crime committed by increasingly younger groups of dealers and consumers, the perpetuation of homelessness, and the evisceration of any semblance of a stable family life to many inner-city residents. The costs of cocaine addiction to individuals, families, and to society as a whole is well documented (Wallace 1991, Washton et al. 1988, Massing 1992).

The past decade has also witnessed an avalanche of literature in the substance abuse field, much of which examines the social and psychological determinents of addiction. In the psychological literature, attention has been focused on the psychopathology of the individual who abuses or becomes addicted to substances - especially on the traits of the substance abuser which cause addiction and which prevent stable recovery. However, what Marlatt (1985) points out with respect to relapse - that in this literature, relapse has traditionally been treated as an end point of a failed attempt at recovery instead of being treated as an expectable event within the process of recovery - also seems true of abstinence: that it is treated as an endpoint. Comparatively little has been written in the psychological literature on the experience of the substance abuser over the course of recovery: the psychosocial changes which are undergone as this process unfolds (Brown 1985). This is not surprising given the difficulties of conducting

longitudinal research: specifically the time, effort, and expense which it can entail (Emrick & Hansen 1982).

Yet, at least in the field of alcoholism studies, the few longitudinal studies of alcoholics which have been conducted, studies that began following their subjects before the onset of alcoholism (as part of other studies), revealed that most who later became alcoholic were premorbidly not easily distinguished from those who did not become alcoholic (Vaillant 1983, Kammeier et al. 1973, also reviewed in Schuckit 1987). Indeed, this has led some authors, such as Brown (1985) to posit a developmental model of alcoholism recovery, the central point of which is that recovery, like alcoholism itself, is a progressive, developmental process. Recently, Tatarsky (1986) has argued, based on the empirical evidence of his cross-sectional study, that much of the psychopathology present in compulsive cocaine abusers is a consequence of the compulsive syndrome, and probably did not exist premorbidly. Bean-Bayog (1986) makes a similar case.

Another relevant phenomenon is that there has been an ascendancy of self-help groups such as Alcoholics Anonymous (AA) and others [eg Cocaine Anonymous (CA), Narcotics Anonymous (NA)] which are based upon the "12-Step" principles of AA. Mental health professionals, who are increasingly faced with significant substance abuse as part of the clinical picture, have recognized of the efficacy of these self-help groups for many patients (Maxwell 1984). As a result, many of these professionals have made 12-step groups an increasingly important adjunct to private therapy for substance abusing patients (Khantzian et al. 1990). Unfortunately, not all substance abusers seem to benefit from membership in these groups. Many drop out soon after joining. Some attend meetings yet continue to consume drugs and/or alcohol. Still others attain abstinence only after several attempts in 12-step groups (Kurtz 1979, Maxwell 1984, Emrick 1987). At present, clinicians have little by way of judging which patients will respond favorably to treatment or to 12-step, self-help groups (which are frequently distinguished from "treatment") and which will not. Were such prognostic factors identified, aftercare planning for patients in detox or residential rehabilitation would be

facilitated. Private practitioners would have better guidelines to decide for which patients they should make 12-Step groups or other drug treatments a co-requisite for private therapy. Interventions tailored for those at high risk for drug or alcohol relapse could be more effectively implemented. Also, useful clinical data would be provided about those patients who come in for treatment with a history of drug treatment or 12-Step group refusal or failure.

The present study employed several psychological variables which come under the rubric of object relations (OR) and reality testing (RT), and attempted to gauge their usefulness in understanding certain aspects of treatment outcome, described below. The overarching goal has been to determine whether these variables are useful in assessing outcome prognosis at the time patients present themselves for drug treatment.

Through the use of these object relations (OR) and reality testing (RT) variables, the goals of the present study were: 1) to evaluate levels of OR and RT impairment in a sample of cocaine addicts at the time of entry to treatment, and then to examine changes in these variables after 90 days of intensive outpatient drug treatment; 2) to test whether tendencies to relapse during the course of treatment are reflected in baseline levels of OR and RT; and 3) to assess whether tendencies to affiliate with 12-step groups are reflected in measured levels of OR and RT.

The covariations of these main variables (OR and RT, drug relapse, and 12-step affiliation) with improvements in major areas of life functioning (ie quality of life) have also been addressed. These goals are now discussed in greater detail.

1) The current study focuses on the intra-psychic domain. It explores the relationship between the earliest phases of abstinence or attempted abstinence from cocaine, and measures of object relations (OR) and reality testing (RT). Broadly put, the term "object relations theory" may be said to designate "theories, or aspects of theories, concerned with exploring the relationship between real, external people and internal images and residues of relations with them, and the significance of these residues for psychic functioning" (Greenberg and Mitchell, 1983, p.12). In discussing the usefulness of this psychoanalytic perspective, Kernberg (1976) notes the significant contributions which object relations theory has made to: " a) our understanding of severe types of psychopathology, such as borderline conditions, psychoses,

regressive types of character pathology with problems of identity, and chronic types of marital conflicts; b) a better knowledge of ego and superego formations and their mutual relationships; c) the clarification of various processes of internalization; d) the psychoanalytic examination of small group processes; e) the discovery of a link between individual psychopathology and pathological group behavior....internalized object relations may be considered a crossroad where instinct and the social system meet and contribute crucially to the development of the personality of the individual" (p 58-59). At the same time, "object relations stresses the uniqueness of the individual. It studies the development of a highly individualized self, a person aware of himself and of other human beings, and the development of interpersonal relationships in depth as a major precondition for the fulfillment of personal psychic needs" (p131).

There is general agreement among psychodynamically-thinking writers (Kernberg 1975, Khantzian, 1984, 1987, Kohut 1977a, 1977b, Levin 1987, Spero 1987, Tatarsky 1986, Wallace 1989, Wurmser 1978, and others) that actively addicted people suffer from impaired or pathological internalized object relationships, which can theoretically account for much of the empirical data accumulated on substance abusers. The current study empirically tests this view by assessing OR and RT impairment in a sample of cocaine addicts as they begin outpatient drug treatment.

Yet, as noted above, some writers (Khantzian 1987, Bean-Bayog 1986, Levin 1987, Tatarsky 1986) view these impairments as partially or wholly consequent to the corrosive effects of the addictive syndrome. They often stress the interaction between psychopathology and addiction. As Khantzian (1987) points out, "It should not be surprising or unreasonable to expect that some of these [cocaine] effects could interact with preexisting psychopathology to make cocaine compelling, or that these same effects might cause or worsen psychopathology". Levin (1987) also addresses the psychopathology/addiction conundrum by stating that whether or not significant disturbances in ORs existed before the onset of addiction, they are virtually always present after a period of chronic abuse or dependence. Some addicts are developmentally arrested, or fixated, at archaic levels of object relations, while for others these manifestations occur only after the onset of addiction and may be viewed as a consequence of it (p4). In saying

this, Levin implies that psychopathology need not be assumed prior to the establishment of addiction.

This issue of which comes first: pathology or addiction, is related to the debate over whether there is an Addictive or Addiction-Prone Personality (see section on Empirical Studies of Object Relations). It also bears on the distinction, noted above, made in the psychoanalytic literature between the pathological regression of object relations, and their fixation. The former refers to the attainment of a certain developmental level with a subsequent return to less developmentally mature forms or modes of functioning, while the latter refers more to a "developmental arrest" idea in which ORs have never passed beyond a certain stage of development.

Unfortunately, since no pre-addiction OR or RT baselines are available for these subjects, the current study does not provide conclusive answers about pre-morbid levels of OR and RT impairment. However, by repeating the object relations and reality testing measures after 90 days of treatment, the current study does provide data about the the extent to which these variables change in the earliest phase of recovery and thus about the degree of regression of OR and RT in cocaine dependent people consequent to the addictive syndrome.

A methodological question that arose had to do with the choice of 90 days as the follow-up time. The main reason for choosing 90 days was the empirical finding that this is a critical period for newly-abstinent addicted individuals. Wallace (1989) replicated the results of Marlatt & Gordon (1985) who reported that "about two-thirds of all initial lapses occur within the first 90 days following initiation of the cessation attempt across various addictive behaviors" (p 36). In Wallace's sample, 76% percent of subjects relapsed within 90 days post-detox. Stone et al. (1984) have also cited the initial phase of recovery as being the time when relapse is most likely to occur.

Another question involved whether measurable changes in OR and RT could be expected after only 90 days. Using populations other than substance abusers, researchers have found significant OR changes over relatively short time spans, as for example Tuber et al.'s (1989) finding of changes in children's scores after surgery using Rorschach measures (cited in: Stricker & Healey 1990, p227), and Ryan & Bell's (1984) finding of OR changes in a

schizophrenic population after the resolution of an acute psychotic episode. (The question of whether ORs represent a "state" or a "trait" is discussed below in the section Empirical Studies of Object Relations.)

2) A second goal of this study was to test whether tendencies to relapse during the course of treatment are reflected in baseline levels of OR and RT. While McLellan (1986) states that the ability to form relationships seems to be a critical factor in treament retention and outcome, ORs are thought to underlie the ability to establish and maintain relationships, especially close ones, to mediate their quality, and to determine the emotional tenor of them. They are thus considered to be both barometer, and mediator of affective experience in general. Whether that emotional life tends to be dominated by chaotically changing, unmodulated emotional states with prominent fantasy themes of destruction/aggression at one extreme, or whether it tends to be relatively stable with a basically benign perception of human relatedness, ORs are thought to mediate these experiences. This is important to the questions of drug treatment, abstinence and relapse because emotional states are found empirically to be one of the main "intrapersonal" causes of relapse in substance abusing populations (Marlatt & Gordon 1980, 1985; Wallace 1989).

McLellan (1986) also found "psychiatric severity" to be the strongest single predictor of treatment outcome in his large longtitudinal study of both alcoholics and drug abusers. Here, he used the psychiatric severity scale of the Addiction Severty Index as his measure. The current study is unique in that, although it also uses the Addiction Severty Index, its main dependent measures are derived from psychoanalytic object relations theory. ORs are thought to mediate a good deal of manifest symptomatology and are factorially unique from it (Billington and Bell 1990).

McLellan and his group have criticized previous efforts at measuring and predicting treatment outcome due to their "lack of a standardized, reliable, and valid evaluation instrument suitable for use with both alcohol- and drug-dependent patients" (McLellan et al. 1985, p2). They also criticize diagnostic typologies which dichotomize alcoholism and drug addiction as

"oversimplified...not systematically related to treatment outcome...and not [corresponding] well with actual patterns of abuse" (McLellan et al. 1985, p 2). These shortcomings help provide an answer as to why "previous predictive studies, which have used brief data collection instruments concentrating on demographic and substance abuse variables, have not demonstrated *meaningful* outcome prediction" (McLellan 1986, p 111).

Wallace (1989) notes the critical relation between treatment retention and abstinence: "Ultimately, remaining in outpatient treatment with clinicians who support tenuous psychological functioning and address patients' vulnerability to environmental stimuli is central to prolonging abstinence. Patients need help managing tendencies toward addictive thinking, defensive functioning, and difficulty managing affect states" (p 97).

3) The third main goal of the current study has been to assess whether tendencies to affiliate with 12-step groups are reflected in measured levels of OR and RT. The rationale for expecting this to be so involves the nature of the relationships which are established by those with varying degrees of object relational disturbance [see discussion of Levin (1987) in the "12-Step Literature" section, below]. A further piece of this question entailed the cocaine abuser's use of a sponsor in the 12-step program. Assuming that one's capacity to enter into a productive relationshp with a sponsor can influence one's investment in being a part of a 12-step group, then it seemed likely that a measure of that capacity might also tap into the likelihood of 12-step affiliation, and perhaps even the likelihood of maintaining abstinence. Indeed, Sheeren (1988) compared relapsing and non-relapsing affiliates of AA, and found that the non-relapsing group was significantly higher in both "reaching out to other members of AA for help and in the use of a sponsor".

The current study used two measures of 12-step affiliation. One was the number of meetings attended during the course of the current outpatient treatment (between baseline and follow-up interviews), and the other was the number of meetings subjects attended lifetime. Separate data analyses were conducted for each of these measures.

There have been several previous efforts to identify factors of affiliation with, and success

in, 12-step groups, with virtually all using AA as the targeted group of study. In general, the results of these studies have been inconclusive and contradictory, so that specific affiliation characteristics were not identified (Emrick 1987, McLellan 1986). One reason for this has been the generally weak methodology employed in substance abuse treatment follow-up studies (Emrick and Hansen 1982). Another is the relative inaccessibility of AA and other 12-Step groups "for regular study by outsiders" (Spitz 1987, p 159). A third reason is the focus on demographic, SES, and other descriptive variables (including patterns of abuse) which do not take into account psychological variables, or ignore the subjective experience of the substance abuser (McLellan 1986). Ogborne and Glaser (1981), and more exhaustively, Emrick (1987) review these past efforts. Emrick and Hansen (1982) review the general methodological problems inherent in substance abuse research. To reiterate, the current approach is unique insofar as the conceptual framework and measurement scales are derived from psychoanalytic object relations theory, especially the work of Kernberg (1966, 1975, 1976, 1980), Kohut (1966, 1971, 1977), and Bellak et al (1973) as operationalized by Bell et al. (1985, 1986).

Kleber & Gawin (1984b) note that psychoanalytic formulations regarding addiction have been criticized as irrelevant to treatment strategy. It is hoped that the current study will enhance the relevancy of these conceptions to treatment.

Finally, research has demonstrated that reductions in, or even abstinence from, alcohol and drug abuse is not the be-all and end-all of addiction recovery. Abstinence does not always correlate with improvements in, or satisfaction with, other important areas of life (McLellan et al. 1983, 1985; McLellan 1986; Emrick & Hansen 1982, p148). Thus the current study also examines improvements in several major areas of life functioning as they covary with the main variables of the study (OR and RT, relapse, and 12-step affiliation). These major areas of life functioning are measured by the Addiction Severity Index and include: medical condition, employment problems, alcohol severity, drug severity, legal problems, family/social relations, and psychological severity. [See Instruments section of Method chapter for a more complete discussion of the ASI.]

Chapter 2

Review of Literature

Psychoanalytic Views on Addiction

Freud

In a letter to Wilhelm Fliess dated December 22, 1897, Freud wrote: "The insight has dawned on me that masturbation is the one major habit, the 'primary addiction', and it is only as a substitute and a replacement for it that other addictions - to alcohol, morphine, tobacco, and the like - come into existence" (1897, 1985). Freud (1928b) reiterated this position in a paper which analyzed the character of Dostoevsky - whom Freud admired and who was a compulsive gambler. He asserts that Dostoevsky's conflicts over gambling perfectly replicated masturbatory conflict: "The passion for play [gambling] is an equivalent of the old compulsion to masturbate; 'playing' is the actual word used in the nursery to describe the activity of the hands upon the genitals. The irresistable nature of the temptation, the solemn resolutions, which are nevertheless invariably broken, never to do it again, the numbing pleasure and the bad conscience which tells the subject that he is ruining himself (killing himself) - all these elements remain unaltered in the process of substitution." He also notes the strong self-punishment aspect involed: "He could then scold and humiliate himself before her [his wife], invite her to dispise him and to feel sorry that she had married such an old sinner; and when he had thus unburdened his conscience, the whole business would begin again the next day".

Aside from these statements on the substitutive nature of addiction, Freud made only brief and scattered reference to alcohol and drug use during the second and third major phases in the development of his thought. Sometimes his observations emphasize the "toxic effects" of a substance on the psyche (regressive and disinhibiting effects), and sometimes the relationship between the user and the substance. Throughout, he maintained the essential view that addiction is of sexual etiology (a substitute for sexual gratification), but further elaborated the view to

fit into his evolving theory of psychosexual development, the topographic model, and later, the structural model. What follows are some of these references.

In 1898, Freud published "Sexuality in the Aetiology of the Neuroses" in which he presented a more elaborated version of the view first stated in his letter to Fliess: "Habit is merely an empty phrase without explanatory significance; not everyone who has occasion to take morphine, cocaine, chloral-hydrate and the like for a space in time thereby acquires a craving for them. More searching examination generally shows that these narcotics are intended as substitutes (directly or indirectly) for the missing sexual gratification, and wherever normal sexual life cannot be reestablished a patient who has been weaned from his habit may be expected quite certainly to slide back into it." Freud draws a parallel between addiction and chronic masturbation in neurasthenics. Both are inferior substitutes for normal sexual gratification, and to wean a patient from either is "practicable only in an institution under medical supervision", and "all abstinence treatments...will succeed only superficially as long as physicians content themselves with removing the narcotic from the patient without troubling about the source of this imperative need for the drug" (Freud 1898).

In 1905, when he began to focus on erogenous zones as central to sexual devlopment, Freud stated that strong oral need in childhood is a predisposing factor for drinking and smoking later in life, long after sexual satisfaction from this zone has become independent of self-preservation needs. "It is not every child who sucks in this way. It may be assumed that those children do so in whom there is a constitutional intensification of the erotogenic significance of the labial region. If that significance persists, these same children when they are grown up will become epicures in kissing, will be inclined to perverse kissing, or...will have a powerful motive for drinking and smoking" (Freud 1905a).

That same year, Freud discussed the psychological effects of alcohol in terms of regressive pleasures, among them "the pleasure of nonsense". Alcohol induces a cheerful mood change which "reduces the inhibiting forces, criticism among them, and makes accessable once again sources of pleasure which were under the weight of supression...Under the influence of alcohol the grown man once more becomes a child, who finds pleasure in having the course of his thoughts freely at

his disposal without paying regard to the compulsion of logic" (Freud 1905b). He briefly reiterates this position in Mourning and Melancholia by stating that the elation experienced in alcohol intoxication probably results from "a relaxation produced by toxins of the expenditure of energy in repression" (Freud 1917). Thus alcohol indulges not only regressive oral strivings, but allows for a broad band of regressive wish fulfillment by loosening up defenses and easing self-criticism.

In 1912, Freud compares "the relation of the wine drinker to wine...(with) the relation of the lover with his sexual object": "If we listen to what our great lovers of alcohol say about their attitude to wine...it sounds like the most perfect harmony, a model of a happy marriage" (Freud 1912). Due to the demands and renouncements entailed in a relationship with another person, wine can provide a less frustrating relationship than a person. In this paper Freud describes wine, and presumably any mood altering drug, in a way that anticipates later theories of addiction: as a love object.

Later, Freud focuses on the use of intoxicants as an attempt to avoid inevitable human suffering and adapt to a cruel world: "Life as we find it is too hard for us; it brings us too many pains, disappointments and impossible tasks. In order to bear it we cannot dispense with palliative measures...intoxicating substances...make us insensitive to it...with the help of this 'drowner of cares' one can at any time withdraw from the pressure of reality and find a refuge in a world of one's own with better conditions of sensibility" (Freud 1930, p22-25).

Freud's personal life was not untouched by the issue of addiction. One element of the well known "cocaine incident" (1884-1887) was his attempt to free his friend Fleischl of a morphine addiction by prescribing cocaine. This intervention backfired miserably, with Fleischl disregarding Freud's instructions about dosage and route, and resulted merely in the substitution of one addiction for another, culminating in a cocaine-induced toxic psychosis (Bernfeld 1953/1974). Because Freud disputed the addictive potential of cocaine, and because of his vigorous advocacy of it for a variety of somatic and psychosomatic disturbances (Freud 1884), he was later rebuked by medical colleagues, and was accused of "having added to morphine and alcohol the 'third scourge of the human race', cocaine" (Erlenmeyer, quoted in

Bernfeld 1953/1974).

Freud also witnessed the progressive addiction of his close friend, student and analysand Ruth Mack Brunswick - a talented clinician and theoretician who suffered from a host of organic and psychosomatic ailments for which she self-prescribed pain and sleeping medication. In spite of 16 years of analysis with Freud (1922-1938, "with some interruptions"), her addiction grew worse. According to Roazen (1971), her analysis with Freud itself took on the flavor of an addiction: "Freud's treatment of Ruth helped induce the very dependency which it should have been the task of analysis to dissolve...the more Freud treated her the closer they became and the less she was able to overcome her difficulties with dependence...Freud liked working with Ruth too much; his feelings for her became an interference in her efforts to rise above her troubles. She enjoyed being dependent on him, which should have been treated as a problem and not indulged as a pleasure" (p432). In current parlance, Freud would be called an "enabler". Freud ultimately refused to see Brunswick any longer as he neared death (Roazen 1971).

Brunswick's penchant for barbiturates and narcotics stood in stark contrast to Freud, who refused sedation even in the terminal stages of cancer lest he cloud his mind: "I prefer to think in torment than not to be able to think clearly" (quote from Jones 1961 p529; see also Roazen 1971, Gay 1988). Nevertheless, his own use of cocaine prior to the Fleischl incident and his addiction to tobacco are well known. With respect to tobacco, his "consumption averaged twenty cigars a day" (Jones 1961, p359). He ascribed his own "habit or vice" to "an identification with his father as a 'heavy smoker'" (Roazen 1971).

Thus, Freud related substance use to substitute sexual gratification, object relations, defense and coping, and ego formation (identification). The particular "choice" of symptoms by a patient was determined by early experiences which created vulnerabilities for, or predispositions to, certain types of psychopathology and manifest symptomatology. Addiction was not simply an obsessive/compulsive symptom, although parallels existed in their developments. In obsessive-compulsive neurosis, repression fails and the impulse finds a substitute which is "reduced, displaced and inhibited...when the substitutive impulse is carried out there is no sensation of pleasure; its carrying out has, instead, the quality of compulsion" (Freud 1926d).

Other Early Psychoanalytic View of Addiction

Levin (1987), Khantzian (1977, 1987), Khantzian & Treece (1977), Kertzner (1987), and Yorke (1970) review the early psychoanalytic literature on alcoholism and drug addiction. In examining the work of Freud (1905), Abraham (1908), Rado (1933), Fenichel (1945), Glover (1956), and others, Khantzian's (1977) conclusions are representative. He observes that although some of these early authors (such as Rado and Fenichel) recognized such underlying factors as "depression, tension, and anxiety" to explain addiction, most of the emphasis in these writings was on "the euphoric-pleasurable aspects of drug use. Most of this literature on addiction focuses on the regressive gratification of libidinal [and aggressive] instincts achieved through the use of addictive substances". The exception to this was Glover (1956), who "stressed that addicts used their substance progressively (as opposed to regressively) to defend against primitive, sadistic impulses and to avoid psychosis".

Khantzian & Treece (1977) assert that "the limitations of an excessively drive-oriented model prevented these early authors from fully developing and utilizing many important clinical observations". The early psychoanalytic authors agree that self-esteem suffers in addiction, whether or not self-esteem issues were tangible before usage began. Also, there is general agreement that the addiction replaces human relationships.

Kernberg

As psychoanalytic theory has progressed, there have been a shifts in how addiction has been conceptualized. Indeed, conceptions of addiction have usually reflected the dominant psychoanalytic paradigm operating at the time in which a given formulation was made. Recent formulations characterize addiction as involving disturbances of internalized object relations.

Otto Kernberg has a narrower, sharper focus in his OR theorizing than the broad definition put forth earlier. Object relations theory "can also refer to a more restricted approach within psychoanalytic metapsychology stressing the buildup of dyadic or bipolar intrapsychic representations (self- and object-images) as reflections of the original infant-mother

relationship and its later development into dyadic, triangular, and multiple internal and external interpersonal relationships. This...stresses the simultaneous buildup of the "self" (a composite structure derived from the integration of multiple self-images) and of object-representations (or "internal objects" derived from the integration of multiple object images into more comprehensive reprsentations of others). The terminology for these "self " and "object" components varies from author to author, but what is important is the essentially dyadic or bipolar nature of the internalization within which each unit of self- and object-image is established in a particular affective context. In this conceptualization, the self-object-affect "units" are primary determinants of the overall structure of the mind (id, ego, and superego)" (Kernberg 1976, p.57).

While both Kohut and Kernberg talk about "disorders of the self" as well as normal and pathological narcissism, each approaches the subject from a very different metapsychological viewpoint. However, the formulations of both theoreticians are built upon a developmental model in which it is posited that all people pass through predictable, invariant stages of object relations development. These stages run along a continuum from primitive, immature, "lower-level" to mature, well-integrated, "higher-level" object relations. Stages which are normal at early phases of development become abnormal if they persist beyond their age-appropriate time. The characteristics of Kernberg's stages, as well as the pathological implications of arrested development at each stage, are now described. Kohut's views follow this section.

Building on the work of Margaret Mahler (1968,1971,1972, et al. 1975) and Edith Jacobson (1954, 1964,1966,1971), Kernberg (1976) outlines five stages in the normal development of internalized object relations within the above framework. It may also be called Kernberg's version of the separation-individuation process. This is a process whereby the child moves from a phenomenology of being "merged" with the primary care-giver to one in which the child realizes that both s/he and the care-giver are separate, autonomously acting individuals. This phenomenology both hinges on and reflects internalized object relations development.

The first stage is called Normal "Autism" or the Primary Undifferentiated Stage, which occurs in the infant's first month of life. In this stage the infant can neither distinguish self-

images from object images, nor has it accumulated enough experiences to consolidate and sort them on the basis of pleasurable, gratifying, "good" experiences versus unpleasurable, painful, or frustrating, "bad" experiences (both types of which are formed through the experiences with the care giver).

The second stage is Normal "Symbiosis" or Stage of the Primary, Undifferentiated Self-Object Representations. It runs from the second month of life to approximately the 6th to 8th month. During this phase there is a consolidation of pleasurable, gratifying, "good" experiences (i.e. the "good" self-object representation), as well as a consolidation of frustrating, painful experiences (i.e. the "bad" self-object representation). A further development (which marks the end of this stage) is that there is a beginning differentiation between the self-image and the object-image within the "good" self-object representation. The self-images and object images within the "bad" self-object representation are as yet undifferentiated in this stage. Thus by the end of stage 2, the infant's internalized object relational world is ordered into "good" and "bad" experiences. Again, these two qualities are determined by the prevailing affective tone (whether rewarding or painful) engendered by the interaction with the care giver. The stage culminates in the child's beginning recognition that the primary care giver (usually the mother) is a source of pleasure and good feeling which is physically separate from himself (i.e. He is just beginning to learn "I" and "not-I").

Stage 3 is the stage of Differentiation of Self- from Object-Representations, which starts between 6 & 8 months and ends between 18 & 36 months. The self-representations continue to become differentiated from object representations within the "good" self-object representation, and self- and object-representations within the "bad" self-object representation also become differentiated. This process results in the child's ability to distinguish "I" from "not-I" (i.e. the formation of ego boundaries) in both positive and negative affective contexts. However, the child still has not integrated the "good" and "bad" self representations, nor has he integrated the "good" and "bad" object representations. Because of this, Kernberg refers to this as a stage of "part object-relations". Thus, the mother who gratifies and gives pleasure is experienced as a different mother from the one who frustrates. Also, the happy, contented "good" self is not the

same as the hungry, irritable, "bad" self.

Stage 4 is the stage of Integration of Self-Representations and Object-Representations and the Development of Higher Level Object Relations-Derived Structures. It lasts from the time the child is almost 3 yr. old until age 8 or 9. This stage is characterized by "the eventual integration of "good" and "bad" self representations into an integrated self-concept, and the integration of "good" and "bad" object representations into "total" object representations, that is, the achievement of object constancy" (Kernberg 1976, p.64). [N.B. The term "object constancy" is short for "libidinal object constancy", Margaret Mahler's (1975) term referring to the stable integration of object representations which have differing affective valences (i.e. "good" and "bad".) It shouldn't be confused with the Piagetian term "object permanence".]

The practical significance of attaining object constancy is that frustration and negative affect are not so overwhelming and all-consuming. This is because these states are now tempered by their having been joined to the "good" representations. The child realizes that the mother who frustrates is the same mother who provides love. "Frustrations are tolerable because there are stable endopsychic representations (internal objects) of loving, albeit humanly flawed, caretakers...There is also a firm sense of identity" (Levin 1987, p.227). Object constancy also sets the stage for the development of more complex emotions, such as guilt.

In addition, the tradional psychoanalytic intrapsychic structures of id, ego, and superego are consolidated in this stage. Healthy development in these spheres hinges upon healthy development through the stages of internalized object relations. Cognitive maturational forces make it possible for the integration of oppositely charged affective experiences, but deprivations and conflict may interfere with the integrative process, or cause it to break down. "The general implication is that cognitive development, affective development, and the development of structures representing internalized object relations are intimately linked" (Kernberg 1976, p 69).

The fifth stage is the Consolidation of Superego and Ego Integration, which starts when the levels of superego (conscience and ego ideal) are integrated. "The formation of the superego is a

complex process involving both differentiation from the ego and a series of identifications with parents and other mentors. The superego may be thought of as the repository of both the conscience and ego-ideal. In many ways it is an internal parent which both loves and punishes, and it is vitally involved in self-regulation and the maintenance of self-esteem" (Levin 1987, p.227).

In the fifth stage the superego becomes less punitive, less personified, and better integrated so that the relationship between ego and superego is less combative. "An integrated self, a stable world of integrated, internalized object-representations, and a realistic self-knowledge reinforce one another" (Kernberg 1976, p.73).

The above summary outlines development under favorable or at least "good-enough" conditions. Untoward frustration, deprivation, or trauma may cause pathological fixation and/or regression in levels of object relatons such that subsequent development can be warped. The point at which the damage occurs determines the level, or severity, of the psychopathology. Pathological fixation and/or regression to stage 1 or 2 results in psychotic states (Kernberg 1976, Levin 1987). Ego boundaries were not yet established at these points, creating later severe deficits in reality testing and other ego functions.

Fixation at, or regression to stage 3 results in borderline personality organization. This term refers to a level of psychopathology consisting of a stable constellation of traits and symptoms which are not as severe as psychosis, but more severe than neurotic symptomatology. Stable "I" and "not-I" boundaries have been established, but neither "good" (libidinally cathected) and "bad" (aggressively cathected) self-representations nor concomitant object representations have been integrated. The "good" and "bad" representations are said to be split from each other. Splitting normally decreases as development proceeds, but for those stuck at this level of OR development, splitting becomes a central feature of the defensive organization. Other primitive defenses (e.g. projection) come into play in order to support the now-defensive splitting. This may be contrasted with neurotic levels of psychopathology in which repression is the primary defense in support of which other defenses arise. Repression does not necessitate

the extensive use of primitive defenses which grossly distort reality in order to maintain it, as does splitting. "Clinically, borderline personalities have severe difficulties in interpersonal relationships, chaotic emotional lives, poor impulse control, and are prone to acting-out...Many alcoholics regress to a borderline character structure, whereas some have never developed beyond this stage" (Levin 1987, p.226-7).

Fixation at stage 4 is characterized by neurotic symptomatology "and the "higher level" of organization of character pathology, particularly hysterical, obsessive-compulsive, and depressive-masochistic characters...Pathogenic conflicts typically occur between the ego and a relatively well-integrated but excessively strict and punitive superego" (Kernberg 1976, p.67).

A further note should be made about an important type of pathology which is relevant to our discussion: narcissistic pathology. Normal narcissism is seen as the libidinal investment of the self. The self, in turn, is defined as "the sum total of integrated self-representations from all developmental stages" (Kernberg 1984, p.189). In pathological narcissism, there arises a pathological intrapsychic structure called the "grandiose self" which results from a fusion of real self, ideal self, and ideal object representations. (The ideal self and ideal object representations make their psychic appearance as a result of the integrations of stage 4.) The person also regresses to the stage 3 level of object relations, characterized by splitting and borderline pathology. However, since the grandiose self is a stable entity, it can permit smoother social functioning than in the borderline states to which it is related. "The main characteristics of these narcissistic personalities are grandiosty, extreme self-centeredness, and a remarkable absense of interest in and empathy for others in spite of the fact that they are so very eager to obtain admiration and approval from other people. These patients experience a remarkably intense envy of other people who seem to have things they do not have or who simply seem to enjoy their lives. These patients not only lack emotional depth and fail to understand complex emotions in other people, but their own feelings lack differentiation, with quick flare-ups and subsequent dispersal of emotion. They are especially deficient in sadness and mournful longing; their incapacity for experiencing depressive reactions is a basic feature of their

personalities" (Kernberg 1975, p.228-9). They often defend against their intense envy through haughty devaluation of others.

In short, those with narcissistic personalities do not relate to people as separate, autonomous others, but rather as extensions (projections) of themselves. However, it should be noted that there are degrees of narcissistic pathology. The "narcissistic personality" is the most severe degree. Apropos of addiction, Levin (1987) states: "Since most, if not all, alcoholics at the point of entering treatment have either regressed to or are fixated at more primitive levels of object relations, we can anticipate some degree of narcissistic disturbance in early-sobriety alcoholics" (p.228). [Levin states that though he addresses alcoholism, these formulations apply to those with drug addictions as well.] Kernberg (1976) is of the opinion that the specific role in the psychic economy played by alcohol and drugs depends on the individual. However, since addictions are often seen in the context of borderline and narcissistic personality, he believes that these personalities constitute a vulnerability or psychological predisposition to alcoholism and drug addiction.

In summarizing the critical importance of one's internalized object relations for getting along in the world, Kernberg writes: "In periods of crisis such as loss, abandonment, separation, failure, and loneliness, the individual can temporarily fall back on his internal world; in this way, the intrapsychic and interpersonal worlds relate to and reinforce each other...In more general terms, the internal resources that an individual has in the face of conflict and failure are intimately related to the maturity and depth of his internal world of object relations" (Kernberg 1976, p.73).

Kohut

Heinz Kohut has been enormously influential in the area of narcissistic personality disorders. Prior to his writings, narcissistic personality disorders were considered virtually untreatable by a psychoanalytic method. Psychoanalysts would find themselves resorting to exhortation and moral pressure in trying to "crack the narcissistic shell" of these extremely difficult patients (Bach 1985). Kohut (1966,1971,1977) described in detail the subjective

experience of narcissistic patients, distinguished healthy from pathological narcissism, and explicated the types of transference that these patients characteristically enter into during treatment (i.e. the "narcissistic" or "self-object" transferences). He also identified the critical role of therapist empathy for these patients - including the unique demands upon that empathy which narcissistically impaired patients make.

The metapsychological theory which Kohut uses to explain the clinical data of narcissistic patients is quite different from that which Kernberg uses, and the debate within Psychoanalysis has been termed the "Kernberg-Kohut controversy" (Fine 1979). Unlike Kernberg, Kohut sees narcissism and object relations as developing along two independent developmental lines. The "grandiose self" is seen not as a pathological structure, but as a developmental given which is normal at earlier stages of development. Kohut deemphasizes the role of fantasy as elaborating the impact of the child's relationships with caregivers (and hence on the formation of internalized object relations), and emphasizes actual empathic breaches (ie real lack of attunement to the emotional needs of the child) on the part of the caregiver which cause damage to the self. The "self" is seen as a "bipolar" structure comprised of the "grandiose self" and the "idealized parental imago". Through a series a non-traumatic breaches of empathy on the part of the child's caregivers, the child undergoes a series of "transmuting internalizations" which gradually change the endogenous structures of the self into realistic and consistent views of self and others, and through which the child gradually becomes able to perform the psychological functions once performed by his caretakers. If the breach of empathy is too great (ie traumatic), transmuting internalization does not occur. Instead, the child's grandiosity and needs for mirroring become defended against [either through repression (ie horizontal splitting) or vertical splitting] and are thus no longer amenable to transmuting internalization: ie they are preserved in their primitive, immature form and thereby enfeeble ego functioning. The capacities for modulating self esteem, engaging in self soothing and other affect regulating functions, will not have been internalized. Self-esteem tends to fluctuate between grandiose over-estimation of oneself and a sense of worthlessness, inferiority, and dispair - both of which are unrealistic.

The characteristic ways in which narcissistically damaged people relate to others is revealed through the transference relationships they establish with the therapist, which Kohut described. Kohut specifies two general types of narcissistic transferences: the Idealizing Transferences and the Mirroring Transferences. These transferences arise due to the activation of one or the other archaic psychic structure which has not undergone maturation due to deficits in internalization. Since the patient is unable to perform certain psychological functions for himself, he has to establish certain types of relationships with others and rely on them to perform these functions for him: to constantly feed his self-esteem, soothe him, and provide realistic feedback about himself (though this is not usually a conscious process). Others are perceived not as fully differentiated centers of initiative with thoughts and feelings which are independent of him, but as projections of parts of himself. There is the full expectation that the other should/can/must behave according to his projection. This type of relationship is called a selfobject relationship. If a selfobject fails to live up to the projection, it is perceived as a narcissistic injury and engenders a primitive response termed "narcissistic rage" (Levin 1987, p237).

In the idealizing transference, the patient elevates the other to a revered, idealized, all-good position. This enables the patient to participate in the greatness of this idealized other, and thus shore-up his own sense of self: "You are perfect, but I am part of you" (Kohut 1971, p27). Idealizing transferences occur due to the reactivation of the archaic psychic structure called the "idealized parental imago" (also called the "idealized selfobject").

In the mirroring transference, the patient's core fantasy is that he has the approval and admiration of the other in all that he thinks, feels, says and does: "I am perfect" (Kohut 1971). Mirroring transferences occur due to the reactivation of the grandiose self. Three sub-types of mirroring transference are described, each representing a different level of developmental maturity. It is assumed that the more primitive the transference that is established, the earlier the narcissistic damage occured. In the "merger" sub-type, the most primitive, self-other bounderies are completely extinguished, and the analogy "between the experience of the narcissistically cathected object and the adult's experience of his own body and mind and their

functions is most appropriate" (Kohut 1971, p115). Merger transferences involve significant lapses of reality testing and are found primarily in psychotic and some borderline states. In the "alter-ego", or "twinship" sub-type, "the patient assumes that the therapist is a twin who shares interests, values, knowledge, skills, and abilities. The patient treats the therapist accordingly" (Levin 1987, p329). The twinship transference is developmentally less archaic than the merger transference. Finally, the "mirror transference proper" is "the most mature form of the therapeutic mobilization of the grandiose self (and) the analyst is most clearly experienced as a separate person" (Kohut 1971, p115-16). "These patients are grandiose and exhibitionistic in the manner of a small child. They expect, indeed demand, that the therapist mirror them - that is, confirm and endorse their every action. The expectation is of total control of the therapist...The patient is looking for the 'gleam in the mother's eye'" (Levin 1987, p329).

Kohut on Addiction

Kohut (1977b) groups addiction with such psychological disturbances as: "the narcissistic personality disorders", "the perversions", and "the delinquencies". Despite their widely disparate symptom pictures, what these disorders have in common is that "the afflicted individual suffers from a central weakness, from a weakness in the core of his personality. He suffers from the consequences of a defect in the self". These disorders are all unsuccessful attempts to "remedy the central defect in the personality" which the addict is convinced the drug is able to do: "It becomes for him the substitute for a self-object which failed him traumatically at a time when he should still have had the feeling of omnipotently controlling its responses in accordance with his needs as if it were a part of himself. By ingesting the drug he symbolically compels the idealized self-object to soothe him, to accept him. Or he symbolically compels the idealized self-object to submit to his merging into it and thus to his partaking in its magical power. In either case, the ingestion of the drug provides him with the self-esteem which he does not possess...All these effects of the drug tend to increase his feeling of being alive, tend to increase his certainty that he exists in the world". Of course, this effort is doomed to failure, for

"Whatever the chemical nature of the substance that is employed, however frequently repeated its consumption, however cleverly rationalized or mythologized its ingestion with the support from others who are similarly afflicted-no psychic structure is built, the defect in the self remains. It is as if a person with a wide open gastric fistula were trying to still his hunger through eating. He may obtain pleasurable taste sensations by his frantic ingestion of food but, since the food does not enter that part of the digestive system where it is absorbed into the organism, he continues to starve" (1977b, p vii-ix).

Other Recent Psychodynamic Formulations on the Cocaine Addict

Most contemporary psychodynamic writers rely on the basic object relations model of either Kernberg or Kohut, or like Levin (1987), some amalgam of the two. Many attempt "a more precise identification of the affect disturbances in addicts" than stated by either Kernberg or Kohut (Khantzian 1987). At the same time, the view has shifted away from the libidinal and aggressive drive gratification emphasized by early theorists to one in which cocaine serves a "primarily homeostatic or prosthetic", role within the psychic economy (Kertzner 1987).

Khantzian et al. (1990), while acknowledging that certain psychiatric disorders (such as chronic depression) may predispose individuals to cocaine addiction, have shifted focus away from "global and severe psychiatric disturbance" as a crucial etiological factor for many or most cocaine addicts (also see Psychiatric Co-Morbidity in Empirical Studies of Object Relations section). Instead, they emphasize "degrees and sectors of psychological vulnerability" as a better approach to etiology. They view the use of drugs as "an expression of vulnerability and dysfunction in self-regulation...(and) an attempt to self-correct these vulnerabilities". These vulnerabilities in ego and self structures are those which are involved in the recognition and regulation of affects, and the maintenance of "self-esteem, self-care and interpersonal relations". It is not that these capacities are absent or non-functional, but that they are fragile and subject to lapses and regression. The psychololgical vulnerabilities, in turn, result in "unbearable psychological suffering and intensely painful affects. Addiction prone individuals discover that the psychoactive properties of drugs-of-abuse counter and/or relieve these

painful states."

Khantzian et al. (1990) also assert that the preferred drug of abuse is related to the particular constellation of deficits and feeling states with which the addict struggles. This is known as "self-selection" or the "self-medication hypothesis" (p 33). For example, cocaine's stimulating and anti-depressant actions help to "overcome the fatigue and depletion states associated with depression...and to relieve feelings of boredom and emptiness" while at the same time providing "a powerful short-term antidote to the self-esteem problems associated with these states". With respect to interpersonal relations, cocaine "produces a sense of empowerment that can enhance a state of self-sufficiency and make contact and involvement with others exhilarating and exciting. Sexually, the user, in the short run, may also feel increased arousal and potency, and a sense of being glamorous and appealing. It should not be surprising then that basic aspects of self-esteem and relationships with others are often interwoven in important ways with the fabric of cocaine addiction." These effects reinforce the characterological styles of many cocaine addicts whose ambitiousness, preoccupation with achievement and self-sufficiency mask fragile of self-esteem, defensiveness about dependency with a "related inability to indulge in more ordinary human ways their needs for comfort, satisfaction, and safety" (Khantzian 1987), and intense needs for recognition and acceptance.

Khantzian (1987) has observed that "many of the dangerous and life-threatening aspects of addictive involvement are more the result of impairments and failures in ego development that impedes the addict's self-protective and survival functions. Such capacities must be acquired in the early phases of development as a result of parental caring and protectiveness...Because addicts are impaired in this respect, they consistently fail to show worry, caution, or fear with respect to dangerous situations in general, and the dangers of drug use in particular" (p 229-232). For the cocaine addict, "priorities about achievement and performance could override self-care functions and self-preservation concerns that may be less than optimally developed...the defensiveness around the self-esteem and relationship difficulties seen in cocaine addicts causes compensatory posturing - counterdependent and counterfearful reactions - which

also interfere with appropriate worry and concerns about self-protection and self-care" (Khantzian et al. 1990).

The work of Khantzian et al. (1990) integrates the findings of a number of earlier writers such as Wieder & Kaplan (1969), Krystal & Raskin (1970), Wurmser (1974, 1978), Milkman & Frosch (1973), and others who have emphsized the adaptive function of drug use in ameliorating the "affect deficits and ego dysfunctions at the heart of addictive disorders".

Spotts and Shontz (1984) similarly note that many cocaine addicts are "perfectionistic, experiencing intimacy difficulties, and not 'team players' - preferring instead opportunities for independent action as a result of counterdependency fears...(and who benefit from) an illusory feeling of emotional self-sufficiency" (quote from Kertzner 1987). They likewise emphasize the adaptive function of drug use, and see ego and object relational deficits as vulnerabilities to the development of cocaine addiction.

Zinberg (1975, 1984) emphasizes the interaction among drug effect, ego functioning (set), and the physical and social environment (setting). Using the concepts of relative ego autonomy (REA) and average expectable environment (AEE) as elaborated by Rapaport (1958, 1959, 1960), Zinberg asserts the critical role of environment in maintaining personality structures and adaptive capacities (REA) over the course of the whole lifespan. He views the marked ego deficits seen in addicts to be heavily tied to a lack of environmental support, which, combined with drug effects, disrupts the ego's relative autonomy with respect to both drive and primitive wish fulfillment, and also with respect to the environment: "If human beings are to maintain their sense of identity, their values, ideologies, and orderly thought structures, they need to receive constant environmental support for their existing verbal and memory structures" (Zinberg 1984, p 181). Superego structures are even more dependent on consistent environmental "stimulus nutriment".

Wurmser (1977) identifies a 7-step "vicious circle in compulsive drug use" characterized by 1) a narcissistic crisis (the "sudden plummetting of self-esteem" usually caused by a real or imagined disapointment); 2) "affect regression" (an uncontrollable sense of rage, shame, or dispair, etc) and a breakdown of "affect defense"; 3) deployment of the primitive defenses of

splitting, fragmentation, and denial; 4) deployment of "externalization" (displacement of "narcissistic power" onto the drug) which helps bolster denial and a sense of "magical (narcissistic) power by external action - including taking magical 'things' such as drugs"; 5) the mobilization of "archaic aggression", against the self, which is required in order to reassert narcissistic power; 6) splitting of the superego which makes the self-directed aggression possible; & 7) pleasure which resolves the narcissistic crisis and gratifies a sense of entitlement ("I get something for nothing and I deserve it").

Kleber & Gawin (1986), as summarized by Kertzner (1987), also subscribe to the hypothesis of self-medication in the service of adaptation with respect to cocaine abuse. Painful affective states may result from psychiatric disturbance or from unmet psychological needs characteristic of cocaine abusers. These needs include "narcissistic needs for recognition and adulation; anaclitic needs for closeness despite pre-existent difficulties in interpersonal relationships; and needs to provide a sense of identity, a distraction from boredom, and a remedy for an inner experience of emptiness" (Kertzner, p 141).

Wallace (1989) stresses the role of borderline and narcissistic defenses in cocaine addicts, and difficulties in affect management. In accord with Wurmser (1974, 1978), Wallace also states that pathological object relations can exacerbate denial and distortions of reality testing.

The Early-Recovery Cocaine Abuser

As part of the clinical presentation of her population of crack addicted inpatients, Wallace (1989) noted an "overreliance on splitting, self-inflation, and grandiosity as defenses against inner pain...The predominance of [pathological] narcissism in patients attempting abstinence reveals a not-at-all surprising difficulty negociating internal and external dangers. Massive anxiety and [painful] affective states represent internal dangers that are poorly managed...(and thus contribute to) self-medication strategies. A resultant vulnerability to external dangers also results when facades of pseudo self-sufficiency and unrealistic goal setting prevail" (p 99). In short, factors from the psychological/personality domain (especially impaired object relations which results in impaired affect management) serve to make these patients vulnerable

to relapse cues in the environmental/interpersonal domain. For further discussion of Wallace's (1989) views on the role of pathological object relations in early recovery, their interaction with defense mechanisms, and their importance in relapse, see A Model of Relapse, below (p45).

12-Step Programs

"Alcoholics Anonymous is a fellowship of men and women who share their experience, strength and hope with each other that they may solve their common problem and help others to recover from alcoholism.

"The only requirement for membership is a desire to stop drinking. There are no dues or fees for AA membership; we are self-supporting through our own contributions. AA is not allied with any sect, denomination, politics, organization or institution; does not wish to engage in any controversy; neither endorses nor opposes any causes. Our primary purpose is to stay sober and help other alcoholics to achieve sobriety."

-Preamble to the AA meeting (The AA Grapevine, 1947)

Description of AA & other 12-Step Programs

Alcoholics Anonymous was founded in Akron, Ohio in June 1935 by an unemployed stockbroker, Bill Wilson, and a surgeon, Dr. Bob Smith. Both were alcoholics whose careers and lives had been virtually ruined by their drinking, yet who eventually realized that the very act of helping another alcoholic through the telling of their own alcoholic experiences helped them to remain sober. AA has a rich and complex history, with several important contributors to its intellectual foundation. These contributors include the Oxford Group (one of several religious/ temperence movements current during this historical period), the writings of Carl Jung and William James, and the views of Dr. William Silkworth whose endorsement of the disease concept of alcoholism was influential in the expansion of the AA movement (Kurtz 1979, Maxwell 1984). Kurtz (1979) traces its early development and expansion in what is probably the definitive history of AA.

Since its inception, AA has grown by huge proportions. By 1983, there were more than 30,000 AA groups in the United States and Canada registered with the AA General Service Office in New York City (and not all groups register). There were also over 10,000 groups in Latin

America. "This makes a world total of about 50,000 groups [in 110 countries other than the U.S. & Canada] with an estimated world total well over a million members" (Maxwell 1984).

While AA is still mostly male, women are making up an increasing proportion of the membership. In the U.S. & Canada, women constituted 22% of the membership in 1968. In 1980, women constituted 31% of the membership ("and 34% among members who had come into AA during the preceeding three years"). The membership is also getting younger, with a higher proportion 35 years old or less (26% in 1980), and while today's membership "still includes many late-stage alcoholics...middle-stage and early-stage alcoholics are the majority in most groups" (statistics and quotes from Maxwell, 1984).

AA's success has spawned a number of other self-help groups such as Narcotics Anonymous (NA) and Cocaine Anonymous (CA), which are modeled after it. There are also groups which evolved for compulsive behaviors not related to substance abuse, such as Gamblers Anonymous, Debtors Anonymous, and Overeaters Anonymous.

"It's members do not refer to AA as 'treatment', although outsiders often do. It is a fellowship in which there is little obvious power structure and in which members relate to one another as peers. One is not expected to complete a process, as one does with treatment; hence one is free to remain part of the group indefinitely without any need to finish a particular task or to advance in the hierarchy. No records are kept. There are no dues or fees. There are no patients and no therapists" (Bissell & Haberman 1984, p91).

The 12-Step View on Addiction

12-Step Groups are strongly abstinence-oriented. In general, they endorse the position that all mood altering substances are dangerous for the alcoholic or addict and must be avoided (Hazelden 1974).

They also subscribe to a disease model of addiction: "Today we are willing to accept the idea that, as far as we are concerned, alcoholism is an illness, a progressive illness which can never be 'cured', but which, like some other illnesses, can be arrested. We agree that there is nothing shameful about having an illness, provided we face the problem honestly and try to do something

about it. We are perfectly willing to admit that we are allergic to alcohol and that it is simply common sense to stay away from the source of the allergy" (Alcoholics Anonymous 1953, emphasis author's). Furthermore, addiction is seen as life-long, and that "once a person has crossed the invisible borderline from heavy drinking to compulsive alcoholic drinking, that person will always remain an alcoholic. So far as we know, there can never be any turning back to 'normal' social drinking. 'Once an alcoholic, always an alcoholic' is a simple fact we have to live with" (Alcoholics Anonymous 1953). This view of addiction is also adopted by those 12-step groups, noted above, which model themselves after AA.

12-step groups distinguish between being "dry" and "sober", or between being abstinent (and perhaps miserable) and having a contented, well-adjusted, meaningful (and sober) life. Participation in AA (going to meetings, having a sponsor, actively "working" the 12 steps) is intended to facilitate the passage from being "dry" to being "sober".

12-step groups encourage members to think according to The 24 Hour Plan: "we take no pledges; we don't say that we will 'never' drink again. Instead...we concentrate on keeping sober just the current 24 hours. We simply try to get through one day at a time without a drink. If we feel the urge for a drink, we neither yield not resist. We merely put off taking that particular drink until <u>tomorrow</u>" (Alcoholics Anonymous 1953, emphasis author's).

Members are also encouraged to "pick up the phone instead of a drink or drug". That is, when craving occurs, or when inner states or circumstances arise which may precipitate relapse, they call another member and "talk it out". This is known as "telephone therapy" (AA 1975, Maxwell 1984). Members are advised to keep a list of several phone numbers handy at all times, so that they will always be able to reach a fellow member.

<u>The Sponsor</u>

Sponsorship is a central feature of 12-step programs, and "the sponsor/sponsee relationship is thought by many to be one of the most powerful tools available to the recovering alcoholic...the basic idea is to provide a special 'friend' (or friends) within the already warm and friendly environment of the AA fellowship" (Hazelden 1980). The functions of this

relationship are generally: 1) to have someone "to talk to who understands where you have been"; 2) to have "someone you can call at any time to get help"; and 3) to have someone to "help with seemingly silly but vastly important questions like 'Who runs AA?'" (Hazelden 1980).

Sponsors are obtained simply by asking someone. The 12th Step of AA enjoins members to sponsor newer members. It is recommended to new members that they "stick with the winners"; that is, choose someone "who has several years of good (growing) sobriety". Newer members are also told that "it is usually, but not always, best that your main sponsor be of the same sex as yourself". A member may have as many sponsors as he likes "provided you are not using numbers of sponsors to keep from getting 'close' to any one of them" (Hazelden 1980).

The 12 Steps

The 12 steps are the core of the "suggested program of recovery" (AA 1976, 1952/1978). They are based on "the trial-and-error experience of early members of AA. They describe the attitudes and activities that these early members believe were important in helping them to achieve sobriety." The steps are referred to as "suggested" because "acceptance of [them] is not mandatory in any sense" (AA 1952/1978).

The Twelve Steps evolved from a set of prescriptions derived from the Oxford Group in conjunction with personal experiences with alcoholism (Maxwell 1984). These prescriptions included: "You admit you are licked; you get honest with yourself; you talk it out with somebody else; you make restitution to the people you have harmed; you try to give of yourself without stint, with no demand for reward; and you pray to whatever God you think there is, even as an experiment" (AA 1957, p 62-63; also quoted in Maxwell 1984, p90).

Although AA explicitly denies that it is a "religious society", it admits that its program is "undeniably based on acceptance of certain spiritual values" but adds that "the individual is free to interpret those values as he or she thinks best, or not to think about them at all" (AA 1952/1978). While the 12 steps makes several references to God, AA-published materials stress that the idea of God is open to individual interpretation. The important thing is that

recovering alcoholics "embrace the concept of a Power greater than ourselves to handle the haunting stresses of daily living" (Hazelden 1980). This "power greater than themselves" need not be God; for some, the AA group itself may be that "Higher Power" (AA 1952/1978).

The 12 Steps of AA, which are adapted for use by all 12-step groups, are:

1) We admitted we were powerless over alcohol - that our lives had become unmanageable.

2) Came to believe that a Power greater than ourselves could restore us to sanity.

3) Made a decision to turn our will and our lives over to the care of God as we understood him.

4) Made a searching and fearless moral inventory of ourselves.

5) Admitted to God, to ourselves, and to another human being the exact nature of our wrongs.

6) Were entirely ready to have God remove all these defects of character.

7) Humbly asked Him to remove our shortcomings.

8) Made a list of all persons we had harmed, and became willing to make amends to them all.

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

10) Continued to take personal inventory and when we were wrong promptly admitted it.

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

12) Having had a spiritual awakening as a result of these steps, we tried to carry this message to alcoholics, and to practice these principles in all our affairs" (AA 1976, p 59-60; emphasis author's).

Maxwell (1984) notes that the 12 Steps recognize "the need for 'inner work' as well as interpersonal action...[and] the long-term nature of the personal growth process". Further, there is a "two-way involvement with other group members...helping and being helped" (p 92).

Other Tools: Slogans, Aphorisms, & The Serenity Prayer:

Besides the Steps, 12-step groups provide other "tools" to the alcoholic/addict which are further "guides for action" (Maxwell 1984). These are in the form of slogans, aphorisms, and prayers which members are encouraged to apply to everyday situations. They function in the service of coping and for maintaining abstinence. Examples of the slogans and aphorisms are:

One day at a time, First things first, Easy does it, Keep it simple, Live and let live, Let go and let God, Principles before personalities; Don't compare-identify, Don't analyze-utilize, Keep an open mind, Pick up the phone instead of a drink (or drug), Keep your memory green, Stick with the winners, Keep some gratitude in your attitude, Don't drink and go to meetings.

Another "tool" which "rather quickly come(s) to a newcomer's attention" (Maxwell 1984) is the Serenity Prayer, which is often used to end the meeting: "God grant me the serenity to accept the things I cannot change, the courage to change the things I can, and the wisdom to know the difference".

Different Types of Meetings

There are several different types of meetings. Some of these include:

Open meetings: anyone is welcome to attend, whether addicted or not; These are often "speaker meetings" in which "two or three members (who have volunteered in advance)...tell the group about their alcoholism, what happened, and what their recovery is like" (AA 1975).

Closed meetings: for addicts/alcoholics only - "or for those people who are trying to find out whether they are"; these are most often "discussion" meetings where, although a member may start the meeting off by "telling briefly of his or her alcoholism and recovery"; the emphasis is on the discussion of "any topic that might trouble-or interest-any problem drinker" (AA 1975).

Beginners meetings: "These are usually smaller than other meetings, and often precede a larger meeting. They are open to anyone who thinks he or she may possibly have a drinking [or drug] problem". These meetings "are excellent places to ask questions, to make new friends, and to begin to feel comfortable in the company of alcoholics, not drinking" (AA 1975, p 79).

Step meetings: discussion meetings in which one of the Twelve Steps is the focus of the discussion.

"Special Interest" meetings: address addiction in the context of other specific interests or problems; there are women's meetings, men's meetings, ex-offender meetings, meetings for medical/health professionals, gay meetings, and non-smokers meetings.

Conventions and Social Events: AA sponsors "state, regional, national, and international AA conventions and conferences attended by anywhere from hundreds to more than 20,000 AA members". These are "usually are weekend affairs consisting of...workshops on varied topics, as well as talks by guest experts on alcoholism, and usually a banquet, a dance, entertainment, and time for other social or recreational activities" (AA 1975). Local AA meetings also sponsor social and recreational events such as parties, dances, and retreats.

Explanations of 12-Step Group Effectiveness

Spitz (1987) reviews the literature on the mutative factors that have been identified in self-help groups. He notes the difficulty in generalizing about them, and concludes that "the operative mechanisms by which self-help groups exert their beneficial influences must be defined separately for each group" (p 159). Some of these factors are unique to 12-step groups, and some are common to all self-help groups. The most frequently cited mutative factors, as reported by Spitz (1987), include:

Ogborne & Glaser's (1985) view that the size (large) and homogeneity of group membership promote "group cohesion...affiliative ties...and a broad power base for reinforcement" for the "pursuit of shared ideals". [It should be noted, however, that "homogeneity of membership" can only refer to the fact that all members had problems with a particular substance. Otherwise, "homogeneity" has not been bourne out by the empirical literature on AA (Emrick 1987)];

Gelanter's (1984) identification of "consensual belief systems, a climate of optimism, a clear sense of group boundaries, shared attitudinal states, the presence of strong cohesive ties, and emphasis on compliance with the group norms as inextricably linked to the positive affective

status of group members";

Vaillant's (1983) emphasis on reaction formation ("alcohol, instead of being the source of instant gratification, becomes the source of all life's pain"), the self-help group's reduction of "denial and projection of responsibility for chemical dependency onto other people, circumstances, or conditions outside oneself", as well as the use of group pressure and group acceptance of the addict to help maintain abstinence;

Kaufman's (1985) stress on the importance of a codified belief system (ie the 12-steps);

Lieberman's (1986) opinion that "the construction of a new social world composed of persons like themselves is the active ingredient of therapy". Self-help groups are alike in that "all are collections of fellow suffers in high states of personal need, and that all groups require some aspect of the personal and often painful affliction to be shared in public". These groups provide "normalization (universalization) and support" for their membership (quotes taken from Spitz 1987).

Kleber and Gawin (1984b) assert that "structure, group support, a religious tenor, and availability of an around-the-clock helping network have been important assistance for some abusers".

Spitz & Rosecan (1987) note that self-help groups have "a supportive, emotionally powerful climate" in which members report "feeling less isolated, being reminded of the dangers of cocaine, attaining a sense of accomplishment from remaining drug-free, and learning from life experiences of other group members" (p 113).

Spiegel & Mulder (1986), using the seven aspects of ego functioning delineated by Beres (1956) [relation to reality, regulation and control of instinctual drives, object relations, thought processes, defenses, autonomous functions, & synthetic functions], assert that the 12-Steps "promote growth in ego functioning" in all these areas, especially reality testing, in the direction of "ever-increasing maturity".

Although these writers identify factors which effect positive change in self-help groups, they do not account for why some people affiliate while others do not. To reiterate, Emrick's (1987) position is that factors predicting or excluding affiliation have yet to be identified.

However, Levin (1987) has recently articulated an object relations view to explain not only how 12-Step groups help the addict, but also to account for differential affiliation.

Levin: An Object Relations View of 12-Step Groups

Although Levin addresses his remarks to alcoholism and AA, he asserts that these views apply equally to drug addiction and to all 12-Step groups. As noted above, Levin (1987) conceives of addiction as a disruption of internalized object relations. He states that "most, if not all, alcoholics at the point of entering treatment have either regressed to or are fixated at more primitive levels of object relations, (and) we can anticipate some degree of narcissistic disturbance in early-sobriety alcoholics" (p.228). Indeed, Levin sees fixation at, or regression to, pathological narcissism to be what underlies many empirical research findings on alcoholics and drug addicts [elevated Pd and D scales on the MMPI, field dependence and stimulus augmentation in cognitive style), and what also underlies various theories of addiction (eg conflicts over dependency or personal power, or Bateson's (1971) "epistomological error"].

Levin (1987) believes that the reason AA is so singularly successful is that, among other things, AA treats pathological narcissism. He states:

"AA intuitively diagnoses and treats the alcoholic's pathological narcissism...AA utilizes both the development of narcissistic transferences and the techniques of educational and moral persuasion. Both mirror transferences and idealizing transferences develop within AA and are, to a limited extent, worked through.

"The ideology of the program, which stresses the commonality of its members, the sameness of the alcoholic experience, and the underlying similarity of the "alcoholic character", tends to pull a "twinship" mirror transference...The Fellowship becomes a band of brothers and sisters who share a set of experiences, hurts, strivings and values that are seen as unique to them. They form, in effect, a community of twins. The members' pathological narcissism predisposes them to form such a transference. Thus there is an ideal fit between character structure and treatment modality. AA works best for precisely those alcoholics who are capable of entering into a narcissistic transference with the program...The bond between the "twins" can also be

seen as identification of their common ego-ideal, the Twelve Steps of AA.

"AA also offers opportunities to develop a mirror transference proper. Speaking at meetings gives the AA member a socially useful and acceptable arena in which to express the exhibitionism and grandiosity of the grandiose self, which is mirrored (that is, accepted and confirmed) by the assembled members. The speaker does indeed elicit the gleam in many mothers' and fathers' eyes. AA members also develop idealizing transferences toward the AA program. The "program" itself becomes the ideal object that cannot fail. "The program never fails; only people do" and "Principles before personalities" are AA slogans that define the "program" as an ideal object. AA's "Higher Power" is also the subject of an idealizing transference for many of its members. The ability to enter into an idealizing transference with either the program or the higher power or both is probably the "secret" of successful affiliation with AA.

"The sponsorship relationship also offers an opportunity both for the expression of the grandiose self and for the development of an idealizing transference. In fact, sponsoree-sponsor relationships are frequently characterized by idealizing transferences and not infrequently by mirror countertransferences. Thus, AA allows - encourages - the narcissistic transferences to unfold. It then partially gratifies and partially works through these transferences. Generally speaking, AA tends toward the long-term or permanent maintenance of the idealizing and twinship transferences, while taking a mostly educational stance toward the mirror transference proper, which it also partially gratifies" (Levin 1987, p 332-334, emphasis author's).

This latter point explains why AA is considered to be a life-long program: the selfobject tranferences are not completely dissolved (worked-through) as part of the process of recovery, and so AA continues to perform psychological functions which the self cannot. Levin's (1987) assessment is complementary to that of Kurtz (1982) who sees AA as a therapy for shame, a frequent emotional component to narcissistic disturbance (Kohut, 1977).

As noted earlier, Sheeren (1988) compared relapsing and non-relapsing affiliates of AA. She found that the non-relapsing group was significantly higher in both "reaching out to other

members of AA for help and in the use of a sponsor". Object relations phenomena can be seen as underlying these behaviors (Levin 1987).

Characteristics of AA affiliates

Emrick (1987) reviewed recent research on affiliation with AA and concluded that "no clear exclusionary criteria for this organization exist", nor have affiliation characteristics been identified. Below are listed some of the variables studied, and the frequencies with which they have been identified, or have failed to be identified, with AA affiliation.

Characteristics identified in 3 or more studies as positively related to AA affiliation ($p<.05$):
Age (older): 4 studies found a positive relationship (1 found a negative relationship, 2 found no relationship); **Previous alcoholism treatment (more)**: 3 studies found a positive relationship (1 found a negative relationship, 2 found no relationship); **Severity of alcohol dependence and related problems**: 4 studies found a positive relationship (2 found no relationship); **Ethnicity**: 1 study (Vaillant 1983) found a positive relationship

Characteristics not found to be related to AA affiliation in 3 or more studies:
Socioeconomic Status: 4 out of 4 studies found no relationship; **Education**: 3 found no relationship, (1 found a positive relationship); **Employment status**: 3 of 3 found no relationship; **Legal status**: 3 of 3 found no relationship; **Drinking pattern pretreatment (binge)**: 4 of 4 found no relationship; **Adult mental health (better)**: 3 found no relationship., (1 found a negative relationship)

Criticisms of the 12-Step Model

Flores (1988) addresses some of the trenchant criticism that has been leveled at AA. He notes that AA "has been called by some a cult, a religion, ideological, unscientific, unempirical, and totalitarian...Its members are said to be coerced into a regressive dependency which fosters servitude, compliance, and the surrendering of the individual to a higher power. Nothing could be further from the truth". He responds that "a great many of AA's critics who write despairingly of the organization, do so without the benefit of attending AA meetings, or making themselves familiar with its workings on a more than passing, superficial, or purely analytic level. They fail to understand the subtleties of the AA program and often erroneously attribute qualities and characteristics to the organization that are one-dimensional, misleading and even border on the slanderous" (p 73). The sort of distortion and overwrought vitriol to which Flores refers is found, for example, in the work of Marlatt (1985), whose apparent contempt for AA is summed up by his endorsement of a view likening AA to the cults of Charles Manson and Jim Jones (p 14).

A more balanced critique of AA is presented by Bean (1975) who observes that some of AA's strengths are also its weaknesses - depending on the person and the stage of recovery. That is, certain aspects of AA's method are helpful in establishing stable initial sobriety, but later on become problematic by hindering further psychological growth. While Bean specifically addresses AA, most of these criticisms have application, to all 12-step groups which model themselves on AA. The "problems related to the AA method" are categorized as rigidity, stress on alcohol, superficiality, regressive aspects, dealing only with alcohol, emphasis on inspiration, fanaticism, and cost of the alcoholic role. Bean's (1975) critique is summarized below.

Rigidity. Bean notes that new members are discouraged from questioning since "until very recently they were drinking and are not in a position to know about sobriety...but it means that the problems of new or approaching members may not get a sympathetic hearing". And while some flexibility is built into the AA method, AA still tends to be "sluggish and rigid and to invoke dogmatic formulas" when it comes to responding to the special needs of groups such as women and

younger people: "Faithful adherents do not believe that individual differences require consideration, and if there is a conflict, the individual loses out to the method". However, she notes that since so many meetings are available, "a person can find one or several whose style and tone he finds sympathetic".

Stress on alcohol. While AA provides an effective means to curtail drinking, the "simplification of life to the conquest of alcohol" may be of concern if it "prevent(s) development of other aspects of the person's life" or "when it does not allow members to use (AA) in their own way, as an adjunct to other therapies". [N.B. This criticism may be less relevant in recent years due to the efforts by a number of clinicians to integrate 12-step groups into psychotherapy (Washton 1988, Levin 1987).]

Superficiality. This refers to "the neglect of etiology, the reduction of all problems to their relation to alcohol, the forbidding of interpretations, and the limitation of goals to change in behavior rather than elimination of causes". However, superficiality "depends on one's frame of reference" because what AA does accomplish is decidedly not superficial. AA "undertakes a complex behavior change with some subtlety and sophistication. It has a clear grasp of the alcoholic's vulnerabilities and assets, including what will threaten or repel him, how much reality he can tolerate, what he must do to stop drinking, what aids will help him shift his defenses to achieve this, danger points after initial restoration of sobriety, and some scope for expressing elaborated forms of maturity within the method".

Regressive aspects. "AA manages a complex trade-off between the assumption of responsibility for not drinking and the acceptance of dependence on AA...The method reduces a member's complex psychological state to the question of his relationship to alcohol...This is a disadvantage for those who are capable of more insight".

Dealing only with alcohol. "This allows him to redirect his energies to the problem of changing his behavior from drinking to not drinking...But in AA there is no concept of what a healthy person is like except that he does not drink". Nevertheless, broadening the focus of AA might reduce its ability to establish initial sobriety.

Emphasis on inspiration. "AA works by inspiring hope through testimonial and religious

fervor...Members who have been able to become sober easily in AA may have a somewhat jaundiced view of the difficulties others meet...Inspiration is effective, but why the other four-million-plus alcoholics in this country do not use AA remains a question".

Fanaticism. The intense loyalty which AA inspires is sometimes accompanied by "intolerance of anyone less zealous and less committed to the organization...Members who are fierce defenders of AA claim that it and only it is the proper treatment for alcoholism, and AA dogma requires the distortion that a person who does not use AA well is not really motivated to stop drinking. This attitude unfortunately frees AA from the responsibility of examining its own conscience in regard to failures. Some members fail because they meet a hostile reception or find the method incompatible with their psychological needs".

Cost of the alcoholic role After sobriety has been established, AA "provides no mechanism for the termination of the alcoholic role, which many members might be able to do". While some members "continue to need AA membership to stay sober...others do not; they have internalized the controls they need to avoid drinking, and for them the fact that AA demands a permanent member role obstructs their independence and their further personal growth".

Treatment Retention, Relapse, & Relapse Prevention

Factors Associated with Drug/Alcohol Treatment Retention, Abstinence, Relapse

Patient Variables

In a longtitudinal study of 407 alcoholics who are in the medical, legal, and social work professions, and some who are college educated women, Bissell & Haberman (1984) found several factors related to relapse between interviews: "By profession, physicians; those whose parents, especially fathers, were not reported to be alcoholics; and a history of other drug problems at the time of the initial interview (emphasis Bissell's). Attitudes or opinions which were directly related to relapses included: wanting to return to drinking if it could be done safely; thinking that an alcoholic can return safely to normal drinking; and regarding alcoholism as primarily mental, emotional, or psychological in etiology rather than physical". They found an inverse relationship between years of sobriety and relapse rate, as well as between age and relapse rate. However, neither self-reported AA attendance nor professional treatment before the initial interview were predictors of between-interview drinking (p 15).

Neumann and Tamerin (1971) identified five prognostic factors related to "successful completion" of treatment programs across addictions (defined as either a decrease in abuse or abstinence). As summarized by Ray (1983, p177), these factors were: Age: the older the subject, the greater the likelihood of success; Drinking style: episodic drinkers relapse less often than daily drinkers; Social Stability: family support and employment boosts the chances of enduring improvement; Diagnostic Category: neurotics did better than those with a history of sociopathy or psychotic disturbances; Motivation: the most important factor yet the most elusive to measure.

Gordis et al. (1981) found that having "a paying job at admission was the only one of the many social variables examined which was significant enough for inclusion in the predictor model" (quoted in Ray 1983, p178).

McLellan (1986) found "psychiatric severity" to be the best single predictor of treatment outcome. McLellan's "psychiatric severity" measure (from the Addiction Severity Index) is a

global estimate, and does not involve specific diagnosis. Like Neumann and Tamerin (1971), McLellan (1986) found that high severity in the areas of "family problems" and "employment" to be contraindications for outpatient treatment, however the relationship between age and outcome was not so straightforward as it was for Neumann & Tamerin (1971) and Bissell & Haberman (1984). McLellan (1986) found significantly worse outcome in older subjects with mid-level and high psychiatric severity. In low psychiatric severity patients, there was no relationship between age and outcome. While McLellan did not distinguish between "episodic" versus "daily" alcohol and drug abusers, he did find that alcohol and drug abuse severity "were generally not important in predicting outcome". McLellan et al.'s studies and results are discussed in greater detail below (see Matching Patients to Treatment section, below).

Treatment Program Variables

Emrick (1975), reviewed of "384 studies of psychologically oriented alcoholism treatment" and found that "differences in treatment methods did not significantly affect long term outcome" (quoted in Roy 1983. p 177). Although abstinence rates at 6 month follow-up did not differ between programs, and abstinence between those having received formal treatment versus those who didn't receive formal treatment were not significantly different (25% versus 16%), he did find a statistically significant higher likelihood of improvement ("abstinence or reduction in destructive drinking") in "65% of the formal treatment participants and in only 42% of thiose not in a formal program." The work of Armor, Polich, & Stanbul (the "Rand Report",1978), as well as Simpson, Savage, Lloyd, & Sells (1978) had similar findings - no differential effectiveness was seen among different alcohol and drug abuse treatments. Armor, Polich, & Stanbul (1978) also found low rates of long-term abstinence (28% four years after treatment) across different alcoholism treatment modalities.

In summary, prior to the work of McLellan et al. (1983, 1986), treatments were found to be about equally effective (or ineffective). Also, there were no criteria to match specific types patients to specific treatments. Subject variables were found to be weak predictors of treatment outcome. Most of the above studies deal with alcohol or opiates, not cocaine.

Relapse

As noted above, Wallace (1989) found that 76% percent of her cocaine-dependent subjects relapsed within 90 days post-detox. This replicated the results of Marlatt & Gordon (1985, p.36, 351) who found that "about two-thirds of all initial lapses occur within the first 90 days following initiation of the cessation attempt across various addictive behaviors" (p 36).

Stone et al.(1984) also recognize the perils of early-stage recovery, and describe a "'relapse binge trap' that usually occurs during the first three to six months of the attempted abstinence period. Relapse is followed by a binge, which is a waiting trap, when feelings of defeat and inadequacy concerning a return to drug use lead to using cocaine again, resulting in a binge" (Wallace 1989, p 96). Marlatt (1985) has also described this sort of phenomenon, and has termed it the "abstinence violation effect" (AVE). It refers to a single instance of drug usage escalating to a full-blown relapse (ie binge) due to the feelings of conflict, guilt, personal weakness and failure associated with the "transgression" of drug usage in someone who is committed to abstinence.

Yet, as Wallace (1989) observes "whether a patient is in or out of treatment, or beginning or ending treatment, relapse remains a high probability event. This highlights the lifelong challenge of maintaining abstinence" (p 96). Indeed, as noted above, Armor, Polich, & Stanbul (the "Rand Report",1978) found low rates of long-term abstinence (28% four years after treatment) across different alcoholism treatment modalities.

Relapse Determinents: Psychological and Environmental

Marlatt (1980) and Marlatt & Gordon (1985) established a relapse typology which resulted from a "microanalysis" of "311 initial relapse episodes" following treatment. Subjects were treated for a variety of problem behaviors ("problem drinking, smoking, heroin addiction, compulsive gambling, and overeating", 1985, p 37). They believe that the factors they identified underlie relapse across all addictions, and are divided into two broad categories: intrapersonal and interpersonal. These relapse determinents include:

Intrapersonal determinents: 1) negative emotional states; 2) positive emotional states; 3) testing personal control; 4) urges and temptations; 5) negative physical states

Interpersonal determinents: 1) interpersonal conflict (social rejection, work problems, tension family/friend problems); 2) social pressure to drink; 3) positive emotional states (social drinking, intimacy)

Marlatt and Gordon (1985) found that almost three-fourths of relapse was associated with three of their factors: negative emotional states (35%); interpersonal conflict (16%); and social pressure (20%). Social pressure may be direct or indirect. Direct social pressure refers to "direct interpersonal contact with verbal persuasion", while indirect social pressure might include "being in the presence of others who are engaging in the same target behavior, even though no direct pressure is involved" (Marlatt & Gordon 1985, p38).

A Model of Relapse

Wallace's (1989) study found empirical support for this typology which "classifies relapse episodes for psychological and environmental determinents". She adapted Gordon and Marlatt's (1985) typology to enhance its applicability to the population compulsive "crack" cocaine smokers. In her sample, subjects were re-entering an inpatient hospital detox treatment following relapse (N=35). Wallace enumerated specific relapse determinents which were more common to a chronic cocaine abusing population, and also incorporated psychodynamic constructs within her categories. Some categories were inspired by her review of various treatment approaches to relapse prevention, such as those by: Spitz & Rosecan (1987), Smith & Wesson (1985), Stone et al. (1984), and Washton & Gold (1987). Wallace's relapse determinents included:

The Psychological/Personality Domain

These factors involve "recurrent, painful affective states...use of psychological defenses, and personality characteristics of individuals". They include: 1) painful emotional state (40% of cases); 2) narcissistic denial/denial (28%); 3) failure to enter arranged aftercare treatment (37%); 4) refused aftercare treatment (11%); and 5) drug craving (6%)

The Environmental/Interpersonal Domain

These refer to "external" stimuli which "are poorly managed by psychologically vulnerable patients". They include: 1) environmental stimuli of people, places, and drugs (34%); 2) interpersonal stress (24%); 3) escalation to drug of choice (14%); 4) handling money (11%); 5) homelessness/no family support (14%); and 6) therapeutic community shortcoming (20%)

Most Common Combinations of Factors

1) painful emotional state & interpersonal stress (20%); 2) narcissistic denial & fails to enter/refuses aftercare treatment (23%)

Wallace (1989) sees the factors of the Psychological/Personality domain as highly interrelated, with many of them having pathological object relations and narcissism at their root. These factors, in turn, heighten a person's vulnerability to those in the Environmental/Interpersonal domain. For example, pathological narcissism involves feelings of loneliness, boredom, emptiness, and fluctuating self-esteem. These are some of the same painful emotional states which cocaine addicts are observed to self-medicate (Kleber & Gawin 1987, Washton 1987 & 1989). Wallace agrees with Levin (1987) that early-recovery cocaine patients are "vulnerable, depressed, insecure, fragile, and perhaps exhilerated". These are states which are also typical of pathological object relations and narcissism. The defense mechanisms associated with pathological object relations (grandiosity, splitting, denial, primitive idealization, and projective identification) are observed by Levin (1987) and Wallace (1987, 1989) in early-abstinence patients. The predominence of such defenses greatly impairs these patients' ability to regulate painful affective states, making self-medication more likely.

Another example is that of "narcissistic denial", which as Wallace (1989) uses it, is denial that has been exacerbated by pathological narcissism, and which "permits overconfidence, unrealistic goal setting, and naive courting of external danger" (p 101) (ie dangers from the Environmental/Interpersonal domain). Narcissistic denial, which can distort reality for the

patient so that he thinks his drug-taking imulses "do not exist or that he can accomplish anything", can also lead to failures to enter arranged aftercare treatment or to refusal of aftercare treatment. [This denial is also bolstered by a characteristic of the drug, namely the absence of a withdrawal syndrome like that in opiates, which may lead the patient to feel he's "cured" after a week's abstinence (Washton et al. 1988)]. In brief, the factors from the psychological/personality domain serve to make these patients vulnerable to many of the factors in the environmental/interpersonal domain.

Although Wallace's study did not include data on patients who had managed to maintain abstinence post-detox in order to identify distinguishing characteristics of these groups, her clinical/empirical evidence supports the view that object relations and reality testing play a significant role for those who do relapse after cocaine treatment.

Relapse Prevention

Marlatt (1985) defines the goals of relapse prevention as: 1) "to anticipate and prevent the occurrence of a relapse after the initiation of a habit change attempt"; and 2) "to help the individual recover from a "slip" or lapse before it escalates into a full-blown relapse". Or as Wallace (1989) puts it, relapse prevention "educates patients to avoid the most common and predictable factors leading to relapse". The broader goal is to initiate lifestyle changes which enable the individual to maintain long-term abstinence.

Wallace (1989) notes the critical roles of psychotherapeutic support and relapse prevention techniques on abstinence: "Ultimately, remaining in outpatient treatment with clinicians who support tenuous psychological functioning and address patients' vulnerability to environmental stimuli is central to prolonging abstinence. Patients need help managing tendencies toward addictive thinking, defensive functioning, and difficulty managing affect states" (p 97). In order to accomplish this she calls for a multifaceted approach involving psychodynamically-informed intervention, as well as behavioral, cognitive, educational, and self-control techniques.

Matching Drug and Alcohol Patients to Treatment

Psychiatric Severity as a key predictor

McLellan et al. (1980, 1983), in a series of related studies, examined a sample of 460 alcoholics and 282 drug addicts in a 4-year treatment outcome-prediction project. At the outset of treatment, they measured the severity of several problem areas commonly associated with addictive states, using the Addiction Severity Index, in an effort to predict outcome in several alcohol and drug abuse treatment modalities. The treatment modalities were:

For the alcohol group:

1) The Alcohol Treatment Unit (ATU): "a 60 day therapeutic community based on the principles of AA". Small-group therapy was provided four times per week;

2) Fixed Interval Drinking Decisions (FIDD): a 45 day program treating patients in the presence of alcohol, which included "two 1-week alcohol-free periods and a 4-week drinking decision phase...in which patients have the opportunity to decide whether to drink. Group and individual therapies are offered daily."

3) Alcohol Outpatient (AOP): "a variable length program that concentrates on the medical, psychological, and social problems of outpatient alcoholics...goals include abstinence through referral to AA and the concurrent reduction of medical and psychological problems associated with alcoholism."

For the Drug Abuse Group:

4) Therapeutic Community (TC): "a 60 day program designed to 'habilitate' the patient to society using individual and group psychological therapy, educational and vocational counseling, and the social structure of a self-governing therapeutic community."

5) Methadone Maintenance (MM): (no treatment duration specifed, possibly open-ended); This program "offers methadone maintenance, in combination with a full program of psychiatric and social work counseling."

Combined Groups

6) Combined Treatment (CMB): a 45 day program "that delivers intensive addiction

management therapy to both alcoholics and drug addicts." Subjects in the "drug abuse" group were overwhelmingly opiate addicts.

McLellan (1986) summarizes the results of these several studies. They found that the Addiction Severity Index's, pre-treatment psychiatric severity score, (a "global estimate of a patient's psychiatric symptomatology") was "the single best overall predictor of outcome across patient types, treatment methods [for both alcohol and drug abuse treatments], and outcome measures" (p 98). Outcome measures were again composite scores derived from the ASI, and reflected changes in the seven problem areas which the instrument measures. Psychiatric severity alone "accounted for an average of 10% of the outcome variance across the seven (outcome) criteria" (p 106).

Prior to identifying "psychiatric severity" as a significant predictor, their results had been consistent with previous studies (Armor, Polich, & Stanbul 1978; Simpson, Savage, Lloyd, & Sells 1978, Emrick 1975) which found no differential effectiveness among different alcohol and drug abuse treatments, nor significant patient-program matches (McLellan 1986, p106). However, after creating 6 subgroups based on psychiatric severity (low, medium, & high psychiatric severity alcohol groups, and low, medium, & high psychiatric severity drug abuser groups), significant outcome differences among subject groups were found, as were significant patient-program matches:

"Low (psychiatric) severity patients have the best prognosis generally, and they appear to improve significantly in any of the treatment programs to which they are assigned" (p 110). Greater lengths of treatment were associated with better outcomes, but there were no significant differences in outcome between different programs, and only a few significant patient-program matches. Yet significant family or employment problems were found to be contraindications for outpatient treatment.

High severity patients did not show better outcome with more treatment, nor were there significant differences in outcome among programs or significant patient-program matches.

For middle psychiatric severity subjects (60% of sample), significant differences in

outcome were associated with specific treatments, and there were significant patient-program matches. "For example, middle patients (both alcoholics and drug addicts) with more severe family and/or employment problems had poorer outcomes in outpatient treatment". (This was also true of low severity groups.) In addition, "two of the inpatient alcohol abuse treatment programs showed evidence of poorer outcomes with clients having more serious legal problems", while the CMB and AOP programs "did not show poorer outcome with these patients" (p 111).

With drug abusing, high psychiatric severity patients who have psychotherapy in addition to drug counseling, McLellan (1986) found greater improvement in drug abuse and related problems than for those getting drug counseling alone. He concluded: "Our observations suggest that the benefits of therapy were a result of the ability to form a relationship, combined with special knowledge and skill about how to use it...To the extent that drug use is an attempt to medicate these problems, and to the degree that psychotherapy can reduce them, psychotherapy can reduce drug use indirectly" (p 135).

The implication of this statement is that even among patients with equivalent, high "psychiatric severity", object relational differences might distinguish those who do better in treatment on the basis of their capacity to enter into a therapeutic relationship.

McLellan's group (1986) also found that "alcohol and drug abuse severity were not generally important in predicting outcome. In fact, pre-treatment psychiatric severity was a better predictor of post-treatment drinking than was pre-treatment drinking" (emphasis McLellan's).

McLellan is not surprised by the finding that pre-treatment psychiatric severity is such a significant predictor of treatment outcome, since "a great deal of research has indicated that it is the best and most reliable predictor of treatment outcome in psychotherapy (Luborsky, Mintz, & Auerbach, 1980), and in substance abuse treatment (DeLeon, 1984; Meyer, 1983)" (p 111).

Finally, McLellan's group found significant improvements in psychiatric status for all drug abusing patients at 6-month follow-up. In this study, some patients (n=116) were "matched" to a treatment modality they would be expected to do well in, given the findings of earlier phases of

the study (which are described above). Other patients were "mismatched" (n=182) - that is, assigned on the usual basis of patient preference and clinical staff judgement - and the above research findings were not taken into account in making a patient-treatment match. They found that the matched drug abuse group showed better outcome on all outcome variables, "significantly so in the areas of medical status, employment, drug abuse, illegal income, and psychiatric function".

Improvements in psychiatric status were significant for both "matched" and "mismatched" groups, with patients in the "matched" group showing somewhat greater improvement after statistical adjustment for "pretreatment differences" (p 113-115). These findings provide evidence that some of the psychopathology seen in substance abusing populations results from the substance abuse itself.

Summary of Treatment Retention, Relapse, & Relapse Prevention

1) There are several "internal" and "external" factors which contribute to relapse for the cocaine abuser attempting abstinence. These include problems in affect management (anxiety, depression) and in performing other self-regulatory functions (eg self-soothing, maintaining stable self-esteem), craving [which may follow or be amplified by internal states such as boredom or depression], and situational cues.

2) Many of these internal factors heighten one's vulnerability to external factors.

3) Psychoanalytic object relations theory can account for many of these internal factors (fluctuating positive & negative affect states, including dysphoria concomitant to self-esteem instability), and for their interplay with external factors. Pathological object relations and narcissism are also known to exacerbate denial and distortions of reality (Wallace 1989, p 101).

4) Pretreatment "psychiatric severity" was found to be the best single predictor of drug abuse treatment outcome.

5) Among patients of equivalent "psychiatric severity", treatment outcome is enhanced by the patient's ability to form a relationship with a therapist (ie object relational factors).

6) Baseline "psychiatric status" can significantly improve over the course of treatment, supporting the view that some of the psychopathology seen in drug abusers is a product of the addiction.

Since object relations reflect the capacity to form and maintain relationships, there was good reason to believe that measures of OR would be significantly related to the ability to engage in treatment, and thus to maintain abstinence. It was also expectable that significant changes in object relations and reality testing would occur over early recovery.

Empirical Studies of Object Relations

Object Relations: Trait or State?

Urist (1980) notes that the "clinical assessment of object relations focuses on the internal basis for an individual's capacity to experience human relatedness. The assessment of object relations rests fundamentally on the understanding that past relations between self and others give rise to the development of internal psychic structure". However, as Stricker and Healey (1990) observe in agreement with Greenberg and Mitchell (1983), "the concept of object relations is not easily defined or explained...the precise definitions and roles of this concept differ, depending on the variant of psychodynamic theory that is endorsed". This conceptual problem bears directly on the question of the measurement, since these differences in definitions and roles "will be reflected in the construction of methods for assessing object relations" (Stricker and Healey 1990).

Another conceptual problen involves the "permanence or malleability of object relations" (Stricker and Healey 1990). For example, while object relations "are thought to develop early, endure, and resist change" (ibid.), researchers have found that measures of them do change over relatively short time spans, as demonstrated by Tuber et al.'s (1989) finding of changes in children's OR scores after surgery (reported in Stricker and Healey, 1990, p227), and also Ryan & Bell's (1984) finding of OR changes in a schizophrenic population after the resolution of an acute psychotic episode. Whether and how these empirical findings should be addressed theoretically is currently unclear (Stricker and Healey 1990).

Yet Urist (1980) speaks of "an individual's internal repertoire of self and object representations" (p 826), and other writers (Zinberg 1984, Wurmser 1978, Levin 1987, and others) refer to various kinds of regression (ego, affect, narcissistic). These references all seem to imply that different qualities of ORs can be activated at different times, or be more or less prominent under different circumstances. Therefore, while certain OR internalizations may serve as templates for subsequent OR development, creating certain ego tendencies or "traits", measures of actual current functioning on the continuum of one's "internal repertoire" may have

a strong "state" component. Writers who use the concept of regression with respect to ego functions seem to take this for granted.

Empirical Studies of Object Relations in Substance Abusers

Most object relations measures are scales which have been developed for use with projective tests such as the Rorschach or TAT, and/or for application to other sorts of narratives (such as dream reports). For a review of the conceptual foundations and historical development of these projective measures, see Blatt & Lerner (1983) and Urist (1980). For a critical review of the empirical literature generated by these measures, as well as critiques of specific scales in terms of validity and reliability, see Stricker & Healey (1990). The Bell Object Relations Reality Testing Inventory (BORRTI), which was the measure used in the current study, is different from these scales in that it is an objective (non-projective), true/false, self-report inventory which has been standardized in a manner consistent with "accepted standards of psychological measurement" (Bell et al. 1986). This instrument measures object relations and reality testing vis-a-vis patients' most recent experiences in how they perceive and conduct relationships, and how they experience internal and external reality (Bell 1991). [See Instruments section of Method chapter for further discussion of the theoretical underpinnings and psychometric properties of the BORRTI.]

There have not been many studies of substance abusers which employ object relations measures. Blatt et al. (1984a, 1984b, 1990), using interview, self-report measures, and projective assessment data (Loevinger Sentence Completion Test & Rorschach), found impairments in ego functions and object relations in samples of opiate addicts. One study (1984a) found that "a primary disturbance in opiate addicts appears to be their relative inability to conceptualize people as well differentiated, articulated, and involved in meaningful, purposeful, and constructive activity. In addition, opiate addicts appear to have greater affective lability [than "normals"]. These difficulties in interpersonal relations and affect modulation are

consistent with disturbances in the neurotic range and suggest that opiate addicts have selected a particularly untoward, self-destructive, isolated mode of adaptation for achieving the satisfactions and pleasures most people seek in intimate personal relationships" (p156). Blatt et al. (1984b) found that opiate abusers were more depressed than polydrug abusers, normals, and psychiatric patients. They speculate that "the drug provides relief from the intense pain and suffering of an overly harsh, critical punitive superego and ego ideal" (p350). Blatt & Berman (1990) on the basis of interviews, projective assessment, and several subscales of the WAIS-R, identified three groups of addicts: 1) "those primarily with impaired interpersonal relationships and affective lability" (or "character disordered"); 2) "those primarily characterized by thought disorder and impaired ego functioning" (or "borderline psychotic"); and 3) "a group with diminished ideational and verbal activity (or "depressed"). Blatt and his colleagues do not speculate about differential treatment prognosis based upon their diagnostic distinctions.

Spero (1987) examined the relationship between field dependence (aka "locus of control"), and aspects of object relations such as self-other differentiation, mutuality of autonomy, and benevolence versus malevalence in groups of: normals, alcoholics, "remitted alcoholics" and psychiatric inpatients (n = 30 each). He found OR impairments in both the alcoholics and remitted alcoholic groups which were for the most part greater than the normal group, but not as severe as the psychiatric group. Although he found consistent differences between the alcoholics and remitted alcoholic groups across several dimensions of object relations in the direction of the remitted alcoholic group being healthier, none of these differences were statistically significant.

Tatarsky (1986) used the Bell Object Relations Reality Testing Inventory (BORRTI) and the Symptom Checklist 90 (a self report measure of manifest psychiatric symptomatology) to study samples of cocaine users in order to identify psychological variables related to compulsivity in cocaine use patterns. He distinguished three groups on the basis of users' own sense of the extent to which "they felt addicted to cocaine and unable to control their use". These groups were: 1) the

Recreational group (n=31); 2) the Compulsive group (n=38); and 3) the Quasi-Compulsive group (n=19). [All quotations about this study are from Tatarsky (1986).]

Cocaine Use and Psychosocial Consequences

Compared with recreational users, Tatarsky's (1986) compulsive users tended to use larger amounts, use more frequently, and spend more money for the drug. They also tended to use cocaine alone, often binged uncontrollably, did not confine their use to the weekends, and had stopped using cocaine in the past. The compulsive group experienced negative psychosocial consequences of cocaine use that were both more in number and greater in severity than recreational users. These included financial, interpersonal, vocational, legal and miscellaneous problems.

Recreational users, by contrast, "tended to use relatively small amounts of cocaine and spent relatively little money for the drug because they often got it free at parties or from friends. Their use pattern had been stable over an average of four and a half years. When they used cocaine they 1) tended to use small controlled amounts in 2) social situations 3) mainly on the weekends and 4) most had not stopped using cocaine in the past".

Object Relations & Reality Testing

Tatarsky (1986) found that "the most important psychological discriminator" of the recreational and compulsive groups was the AIn score on the object relations portion of the BORRTI. The UP and HD scores on the reality testing portion were also significant discriminators. In addition, the IA, Egc, and RD scores were elevated in the compulsive group relative to the recreational group. In short, compulsive users were more impaired than recreational users on three of four object relations subscales (AIn, IA, & Egc) and on all reality testing subscales (UP, HD, & RD). In contrast, the SI score (OR) was significantly lower for the compulsive group compared with the recreational group, indicating a higher level of social competence.

With regard to the recreational group, he found that "this sample is not significantly different from the normal population in quality of object relations and reality testing. They tend to have an an integrated, stable identity sense with the capacity to enter into satisfying

relationships with others who are seen empathically as separate integrated others. Reality testing is intact and there is minimal hallucinatory or delusional ideation reported".

Compulsive users, on the other hand, "experience substantial mistrust in their relationships, have fragile self-esteem associated with painfulness of relations with others and concerns about being liked and accepted and tend to be mildly narcissistic in relation to others. In these areas they are most similar to depressed and neurotic character disorder patients and less impaired than borderlines. They appear to have particular strength in their sense of social competence which parallels that of normal, non-pathological groups. Reality testing is relatively more impaired with the most severe disturbance in the capacity to [distinguish] inner and outer perceptions. There is evidence of gross breaks in reality testing manifested in hallucinatory and delusional ideation. A sense of doubt about the accuracy of perception is substantial".

Results for the "quasi-compulsive" group indicated that the "psychological profile of this group is similar to that of the compulsive users in impairment of basic trust and general reality testing problems. It is somewhat less impaired than the compulsive user group regarding concerns about being liked by others, egocentricity, uncertainty of perception and gross disruption of reality testing by hallucinatory and delusional experiences". Tatarsky notes that the longer quasi-compulsive users engaged in this pattern, the more they looked like compulsive users in terms of object relations and reality testing impairments.

Tatarsky concludes that his results support the position "that some individuals are able to engage in stable recreational cocaine use with minimal psychosocial problems". However, "increased use in this population is associated with greater object relations impairment and psychiatric symptomatology. This impairment may constitute an increased vulnerability to the seductive pull of cocaine which enables these individuals to self-medicate these painful affects. This is consistent with the hypothesis suggested by Spotts and Schontz (1975) the greater ego impairment is associated with increasing cocaine abuse".

Tatarsky notes that although the compulsive group had less education, it had nevertheless attained "comparable occupational and income status". This finding, combined with intact social

competence, and "few differences between recreational and compulsive user groups in previous level of psychosocial adaptation" lead him to conclude that "the compulsive cocaine users in this sample were particularly capable, achievement oriented people prior to their problems with cocaine". He believes that a substantial amount of the psychopathology seen in the compulsive user group "seems acutely related to the compulsive cocaine use and [is] not indicative of preexisting psychopathology". Tatarsky endorses Smith's (1984) "anecdotal report that only 10% of the depression seen in compulsive cocaine users reflects underlying depression".

Nevertheless, Tatarsky (1986) maintains that object relations impairments of the compulsive group, even after allowing for decrements caused by cocaine usage, probably constituted a psychological vulnerability for compulsive cocaine abuse patterns: "For these individuals, cocaine's 'ego fortifying effects' may initially serve as an ideal defensive support to the neurotic character's striving for mastery over the world. However , neurochemical depletions ..would give rise to the increased psychiatric distress and psychosocial dysfunction described in this study. This deterioration in functioning would represent, for these individuals, a further threat to their self-esteem". This then gives rise to a viscious circle of more cocaine use resulting in further deterioration (which is a "narcissistic crisis") resulting in more cocaine use ie a compulsive use pattern.

Relationships Between Psychopathology & Addiction

Kertzner (1987, p141), based on his review, summarizes several hypothesized relationships between psychopathology and drug abuse. These include:

1) "Psychopathology can be a consequence as well as an antecedent of drug abuse; Gawin & Kleber (1986) have recently addressed this issue by documenting cocaine abuse abstinence symptoms as a distinct phenomena"; 2) "Psychopathology can be a coexistant variable with no etiological significance (Meyer & Hasselbrock 1984)"; 3) "To some extent, psychopathology can also be considered an adaptation to the experience of being a drug-dependent individual in a society that stigmatizes such behavior (Millman 1986); consider the treatment many drug abusers receive in busy emergency rooms." [Zinberg (1975, 1984) also views most of the ego

dysfunction seen in addicts to be a consequence of addiction under adverse environmental conditions.]; 4) "Psychopathology becomes less clinically relevant as certain abused substances become more normative in our society (Meyer & Hesselbrock 1984)... the great reinforcing property of cocaine has led to the argument that premorbid disposition may be less relevant and drug availability more important to cocaine use than is true of other drugs (Kleber & Gawin, 1986)".

While most current theorists and researchers (Blatt 1984a, Khantzian et al. 1990, Khantzian 1987, Kernberg 1975, Kohut 1977b, Levin 1987, Wallace 1989, Tatarsky 1986) would acknowledge that addiction can exacerbate measures of psychopathology, it is also generally believed that pre-existing psychological factors create a heightened vulnerability for the development of an addiction. Khantzian et al. (1990) in particular have moved in the direction of "considering the possibility that degrees and sectors of psychological vulnerability are involved rather than global and severe psychiatric disturbance" in the development of cocaine (or other drug) dependence.

Is There an Addictive Personality?

Nathan (1988), in an article reviewing the literature on the relationship between personality and the etiology of alcohol and drug abuse, takes the position that "with regard to the depression that afflicts significantly more alcohol and drug abusers than nonabusers...the depression appear[s] far more often to be reactive to the consequences of the abuse (or the pharmacologic actions of the abused drug) than to be antecedent to it". Nathan ultimately concludes "the utility of personality for the prediction of substance abuse, for the differentiation of substance abusers from non-abusers, and for determining the response to treatment and the maintenance of treatment gains remains unproven" (p 187). Sutker & Allain (1988) criticize past attempts to identify "the addictive personality" as simplistic and unappreciative of the multifactorial nature of addiction.

From a psychodynamic point of view, Zinberg (1975) states that "there are no psychological profiles or consistent patterns of internal conflicts or phase-specific

developmental sequences that can be put forward as the determining factor in the history of drug use and addiction". Khantzian et al. (1990) assert that "there is no one personality type or 'addictive personality' involved which generally predisposes a dependence on drugs or on cocaine in particular". Rather, "sectors of vulnerability in personality organization appear to play a part in predisposing some individuals to cocaine dependence".

Bean-Bayog (1986) argues that the constellation of traits which has traditionally been labeled "the alcoholic personality" ("impulsive, self-centered, self-destructive, irresponsible, isolated, repressed, guilty, depressed, irritable, and moody...judgement is poor...they use an elaborate defensive system based on primitive denial, rationalization, projection, and minimization") is in large measure the product of the "trauma" of alcoholism, although once these patterns establish "they entrench and perpetuate the alcoholism". Alcoholism is likened to "the disruption produced by other overwhelming human experiences" such as natural disasters, life-threatening disease, combat, incarceration, or nuclear attack. Though not specifically mentioning cocaine or other drug abuse/dependence, the implication is that any chronic addictive state would have similar pathogenic effects.

Psychiatric Co-Morbidiy in Cocaine Abusers

Estimates of co-existent affective disorders (depression, and bipolar illness or cyclothymia) in cocaine abusers have ranged as high as 50% (Kleber & Gawin, 1984a). Others (Weiss & Mirin 1984) have found very high rates of Axis II pathology (90% in one study), especially borderline and narcissistic personality disorders. Attention deficit disorder has also been identified in some samples (Kleber & Gawin 1984b). These studies are reviewed in Kertzner (1987) and Skodol (1987).

These estimates are controversial, however. Skodol (1987) criticizes these studies for their small, highly unrepresentative samples and week methodology. Khantzian (1987) has called for larger, more representative samples to learn the true rates of comorbid affective and personality disorders. But beyond this remains the question of how much of the depression is consequent to the cocaine usage. Kleber & Gawin (1984b) point to the difficulties in

distinguishing psychiatric symptoms which result from abuse from those which are independent of it and call for prospective studies. The work of Nathan (1988), Tatarsky (1986), and Siegel (1984), suggests that much affective disturbance may result from the abuse syndrome.

Khantzian (1987) has identified in the literature several psychiatric factors that might "predispose individuals to cocaine addiction. They include: 1) preexistent chronic depression, 2) cocaine abstinence depression, 3) hyperactive restless syndrome or attention deficit disorder, and 4) cyclothymic or bipolar illness", but he adds that "we need further, larger representative studies of cocaine addicts in order to substantiate these and other possibilities" (p 238).

As to the questions of whether all cocaine addicts have prior psychopathology, and whether everyone might be suseptable to cocaine addiction, Khantzian (1987) feels an informed judgement cannot yet be made "until we have extensively studied and understood many more cocaine addicts and have better clarified the effects and mechanisms of action of cocaine at the neuronal and biochemical level". While some authors, such as Vereby & Gold (unpublished, reported in Tatarsky 1986), feel that all people are suseptible to cocaine addiction due to the intensely rewarding effects of the drug, Tatarsky (1986) asserts that these effects are not sufficient to explain addiction since many users, even with free and easy access to the drug, do not become compulsive users.

Alcohol and the Cocaine Abuser

Blume (1987) reports that it is common to uncover abusive drinking patterns in cocaine abusers which existed before regular cocaine use began, often in the service of alleviating unpleasant emotional states. Further, once cocaine enters the picture, alcohol may additionally be used to self-medicate cocaine side effects such as "tension, agitation, hyperalertness, and insomnia", thereby establishing "a second pattern of alcohol or other sedative abuse". This counter-productive strategy, however, exacerbates many of these very symptoms and can also create other serious medical and psychological consequences. Blume observes two especially dangerous patterns associated with continued alcohol use in cocaine dependent people who are attempting recovery. Since one of alcohol's first effects is the impairment of judgement centers

in the brain, and since both the social contexts and chemical effects of drinking can become powerful conditioned cues which cause or amplify cocaine craving, use of alcohol easily leads to relapse in cocaine abuse. The other pattern Blume (1987) notes is the "switching of dependencies...With cocaine no longer an option to counteract feelings of boredom, discouragement, or low self-esteem, alcohol...is used as a substitute. In this psychological setting, alcohol dependence tends to develop very rapidly" (p 203). Tatarsky (1986) anecdotally reports that many of the subjects in his study described abusive patterns of alcohol consumption. Washton (1987 & 1989), Washton et al. (1988), and Wallace (1989a) are in agreement with Blume's observations that continued use (of even small amounts) of alcohol is both quite common and quite dangerous for patients attempting abstinence from cocaine. These authors advocate complete abstinence from all mood altering substances as the best approach to treatment and recovery from cocaine dependence due to the heightened likelihood of relapse resulting from disinhibition and conditioning factors.

McLellan et al. (1985) criticize diagnostic typologies which dichotomize alcoholism and drug addiction, calling them "oversimplified...not systematically related to treatment outcome...and not [corresponding] well with actual patterns of abuse" (p 2).

Hypotheses

To reiterate, the goals of the present study were: 1) to evaluate levels of OR and RT impairment in a sample of cocaine addicts at the time of entry to treatment, and then to examine changes in these variables after 90 days of intensive outpatient drug treatment; 2) to test whether tendencies to relapse during the course of treatment are reflected in baseline levels of OR and RT; and 3) to assess whether tendencies to affiliate with 12-step groups are reflected in measured levels of OR and RT. These goals were operationalized into the following set of hypotheses:

1) For treatment completers, there will be significant improvements in object relations (OR) and reality testing (RT) at 90 days. (Discussed in section 1 of Results chapter.)

2) Days of alcohol and drug use during the course of treatment will be significantly related to baseline object relations and reality testing scores. (Section 2 of Results chapter.)

3) 12-Step group attendance during the course of treatment will be significantly related to baseline object relations and reality testing. (Section 3 of Results chapter.)

4) Having a sponsor within 12-step groups (during the current treatment) will be related to object relations and reality testing.

5) Level of 12-step attendance during the current treatment will be related to having a sponsor during the current treatment.

6) Lifetime 12-Step group attendance will be significantly related to levels of object relations and reality testing. (Section 4 of Results chapter.)

7) Lifetime history of having a sponsor within 12-step groups will be related to object relations and reality testing.

8) Lifetime level of 12-step attendance will be related to history of sponsor involvement.

Chapter 3

Method

Subjects

The initial subject sample consisted of 65 males who were admitted to outpatient treatment for cocaine addiction at the Washton Institute. All subjects met DSM III-R criteria for a primary Axis I diagnosis of Cocaine Dependence. Many also received secondary diagnoses for patterns of abuse of, or dependence upon, other substances. The frequencies and types of poly-addiction are given below. Of the 65 subjects in the original sample, 36 were still in treatment after 90 days and available for follow-up, while 29 had discontinued treatment. Only those subjects who participated in both the initial and follow-up portions of the study are included in the data analysis. One subject who did complete a follow-up interview was excluded for reasons which are discussed below. Thus, there are 35 subjects under consideration in the present study.

Demographics of the Sample: **See Tables 1&2, below.**

Age. Subjects ranged in age from 25 to 54 yr., with a mean age of 36 (sd=5.7). The median age was 35 yr.

Race. Fifteen subjects were White (43%), 13 were Black (37%), and 7 were Hispanic (20%).

Marital Status: Thirteen subjects were married (37%), 11 were never married (31%), 9 were separated or divorced (26%), and 2 were living with a sexual partner (6%).

Religious Affiliation: Sixteen subjects were Catholic (46%), 6 were Protestant (17%), 6 had no affiliation (17%), 4 were Jewish (11%), 2 had "other" affiliations (6%), and 1 was Islamic (3%).

Educational Level: One subject had a graduate degree (3%), 5 had Bachelor's degrees (14%), 18 had had some college (51%), 8 were high school graduate or GED (23%), and 3 were less than high school graduate (9%).

Job Status: Thirty one subjects (89%) were employed at the time of entry to the current treatment. Of these, 6 were on tempoary disability due to addiction-related problems. Four (11%) were unemployed.

Occupational Category: Subjects' job titles and/or job descriptions were assigned to a 7-point scale of occupational categories developed by Hollingshead and Redlich (1958) as a component indicator of Socio-Economic Status (SES). Lower assigned values are associated with higher SES. See page 8 of the 12-Step Program Participation Questionnaire (Appendix C) for a more complete description of these categories. See **Table 2** for the sample distribution in these categories.

Individual Income: This figure represents whole dollar, after-tax income received in the 30 days prior to entry to treatment from employment, unemployment compensation, disability pay, and in one case, severence pay. Income amounts ranged from $0 (zero) to $6300, with a mean of $1734 (sd=1360), and a median of $1300.

Preferred Route of Cocaine Ingestion: Twenty subjects (57%) identified smoking (ie "crack" and/or "freebase") as their preferred method of cocaine ingestion. The remaining 43% (n=15) identified intranasal ingestion as their preferred route. No one identified IV or IM injection as their preferred route, nor did anyone identify "a combination of intranasal and smoking".

Dual Addiction/Abuse of Multiple Substances: Thirty subjects (86%) were active abusers of other drugs in addition to cocaine at the time of entry into treatment. Alcohol abuse was involved with 69% (n=24) of the sample, while 60% (n=21) of the sample abused marijuana. Sixteen subjects (46%) abused both alcohol and marijuana. One subject (3%) abused alcohol, marijuana, and other drugs, and 3 subjects (9%) reported compulsive sexual behavior or compulsive gambling.

Compulsive gambling and compulsive sexual behavior are included here for those subjects who spontaneously reported them during interviews. However, since these areas were not systematically inquired about in the research protocal, the incidence of these "behavioral addictions" may be somewhat higher for the sample than reflected here.

Addiction Treatment History (Tx#): Addiction-focused treatments over a subject's life are included in their addiction treatment history. Inpatient medical detoxifications, periods in residential rehabilitation facilities, outpatient drug/alcohol treatment programs, and addiction-focused individual psychotherapy are counted. The patient need not have fully completed a course of treatment for it to be counted. Also, having attended 3 or more 12 Step group meetings within a 30 day period counts as a treatment episode, so long as the subject was not in detox or rehab at the time. Treatments which were done in tandem are counted separately. For example, if someone went from detox to a residential rehab, then participated in an aftercare counselling program, this would be counted as three episodes. If, in addition, he went to 3 or more 12-step meetings within 30 days during the course of the aftercare counselling program, a fourth treatment episode would be counted.

For 11 subjects (31%), the current treatment was their first treatment episode. The remaining 24 subjects reported between 1 and 9 previous treatments, with the majority (n=16) reporting 1, 2, or 3 episodes.

Medical Detoxification ("detox"): A medical detoxification typically lasts from 5 to 10 days. Twelve subjects (34%) reported at least one medical detoxification prior to starting the current treatment. Of these, the number ranged from 1 to 3, with most (n=8) reporting 1 detox.

Residential Rehabilitation ("rehab"): Residential rehabilitation treatment typically lasts from 21 to 28 days. Fourteen subjects (40%) had gone through at least one residential rehab treatment prior to starting the current treatment. For these subjects, the number of rehab treatments ranged from 1 to 5, with most (n=9) reporting 1 rehab.

Inpatient Treatment Immediately Prior to the Current Treatment: Eight subjects (23%) came to the current treatment within 30 days following an inpatient treatment. Of these 8 subjects, 3 were in a dextox, and 5 were in a residential rehab.

Abstinence Prior to the Current Treatment: Six subjects (17%) were abstinent from cocaine, alcohol and all other drugs during the 30 days prior to entry into treatment. These periods of abstinence ranged from 5 to 10 weeks, with a mean of 7.7 weeks (sd=1.9). Among

these 6 subjects, 3 had been in residential rehab facilities, and 1 had been in a detox at some point during the 30 days prior to starting the current treatment.

Cocaine Problem Duration: This refers to subjects' response to the question: "How long ago did you first notice cocaine had become a problem for you?". Responses ranged from 1 to 96 months, with a mean duration of 32.5 (sd=27.3), and a median of 24 months.

Treatment Dropouts: See Tables 1&2, below.

Of the 65 subjects who received baseline interviews, 29 (45%) had dropped out of treatment by day 90 and did not receive follow-up interviews. There were no significant differences between those followed up and those not followed up on age, race, marital status, religious preference, educational level, job status (employed, temporary disability, or unemployed), individual income, preferred route of cocaine ingestion, abuse of multiple substances, overall number of substance abuse treatments, number of medical detoxifications, number of residential rehabilitations, cocaine problem duration, or number of days of use in the past 30 of cocaine, alcohol, other drug, or poly-drug. One treatment dropout was excluded from this analysis because a cross-check of his baseline protocol in conjunction with collateral reports from counselling staff cast doubt on the veracity of several responses.

The only significant socio-demographic measure was occupational category (Hollingshead & Redlich, 1958). Occupational category was significantly related to treatment completion (Mann-Whitney U, $p < .03$). Of the 35 treatment completers, 23 (66%) were in the top 4 categories, while 12 (34%) were in the bottom three categories of skill and status. Of the 28 treatment dropouts, only 6 (21%) were in the top 4 categories, and 22 (79%) were in the bottom 3 categories.

There were no significant differences on the Addiction Severity Index composite scores of medical, employment, alcohol, drug, legal, family/social, or psychological problems. In addition, there were no significant differences on the object relations scores of alienation, insecure attachment, egocentricity, or social incompetence, nor were there any significant differences on the reality testing scores of reality distortion, uncertainty of perception, or

hallucinations and delusions. The reality distortion score was higher for treatment dropouts, but this difference only approached significance ($p < .09$).

Table 1: Baseline Comparisons for Cocaine Addicts who were and were not Followed-Up: Interval Variables

Variable	Subjects followed up (n=35) mean	sd	Subjects not followed up (n=28) mean	sd	U or t	z* or df	2-tail p
Number of days/past 30 (Pre-Tx):							
Cocaine	7.1	6.6	9.2	9.5	448.5	z = -.578	n.s.
Alcohol	7.7	9.4	6.9	9	473	z = -.239	n.s.
Other	2.8	6.4	3.9	7.5	457	z = -.506	n.s.
Polydrug	5.4	6.6	6.5	8.2	466	z = -.339	n.s.
Age	36	5.7	35.6	6.8	.300	61 df	n.s.
Individual Income	1734	1360	1448	1062	427	z = -.872	n.s.
#Tx (inpt + outpt)	3.1	2.2	3.8	2.9	432	z = -.819	n.s.
#Detoxifications	.49	.78	.93	1.7	462.5	z = -.449	n.s.
#Residential Rehab's	.69	1.1	.75	.84	437.5	z = -.807	n.s.
Coke Prob Dur(months)	32.5	27.3	40.7	46.3	486	z = -.055	n.s.
#12-Step Meetings:							
Past 30 days	6.3	10.4	7.3	9.5	449.5	z = -.601	n.s.
Lifetime	48.4	90.8	110.7	206	432	z = -.808	n.s.
Addiction Severity Index Composite Scores:							
Medical	.255	.31	.293	.32	-.474	61 df	n.s.
Employment	.483	.25	.512	.24	-.466	61	n.s.
Alcohol	.257	.23	.225	.24	.528	61	n.s.
Drug	.227	.08	.242	.09	-.682	61	n.s.
Legal	.032	.09	.014	.05	.891	61	n.s.
Family/Social	.212	.23	.248	.23	-.608	61	n.s.
Psychological	.310	.2	.393	.19	-1.690	61	n.s.

*corrected for ties

Table 1 continued: Interval Variables

Variable	Subjects followed up (n=35) mean	sd	Subjects not followed up (n=28) mean	sd	t	df	2-tail p
Object Relations Scores:							
Alienation	.208	.69	.228	.78	-.106	61	n.s.
Insecure Attachment	.101	.85	.196	.81	-.454	61	n.s.
Egocentricity	-.025	.8	.111	.87	-.646	61	n.s.
Social Incompetence	-.002	.93	.159	1.0	-.659	61	n.s.
Reality Testing Scores:							
Reality Distortion	-.204	.50	.124	.97	-1.730	61	.09
Uncertainty of Perception	.327	.9	.253	.76	.432	61	n.s.
Hallucinations/Delusions	-.146	.54	-.070	.72	-.481	61	n.s.

Table 2: Baseline Comparisons for Cocaine Addicts who were and were not Followed-Up: Categorical Variables

Variable	Subjects followed up (n=35) n	%	Subjects not followed up (n=28) n	%	Chi square*	df	p
Race							
White	15	43	12	43			
Black	13	37	15	54	4.251	2	n.s.
Hispanic	7	20	1	4			
Marital Status							
Married/Cohabiting	15	43	15	54			
Separated/Divorced	9	26	7	25	.955	2	n.s.
Never Married	11	31	6	21			
Religious Preference							
Protestant	6	17	7	25			
Catholic	16	46	6	21			
Jewish	4	11	1	4	7.413	4	n.s.
Other	3	9	7	25			
None	6	17	7	25			

* with correction

Table 2: continued: Categorical Variables

Variable	Subjects followed up (n=35) n	%	Subjects not followed up (n=28) n	%	Chi-square or U*	df or z	p
Educational Level							
Graduate Degree	1	3	1	4			
BA/BS	5	14	3	11			
Some College	18	51	10	36	U = 564	z = -1.092	n.s.
HS grad or GED	8	23	12	43			
Less than HS grad	3	9	2	7			
Job Status							
Working	25	71	22	79			
Temporary Disability	6	17	3	11	X^2 = .564	2 df	n.s.
Unemployed	4	11	3	11			
Occupational Category (Hollingshead & Redlich)							
1 (Highest)	2	6	1	4			
2	6	17	0	0			
3	4	11	5	18			
4	11	31	0	0	U = 335	z = -2.211	.03
5	0	0	3	11			
6	1	3	6	21			
7 (Lowest)	11	31	13	46			
Preferred Route of Cocaine Ingestion							
Intra-Nasal	15	43	9	32	X^2 = .757	1 df	n.s.
Crack or Freebase	20	57	19	69			
Dual Addiction							
Cocaine only	5	14	5	18	X^2 = .149	1 df	n.s.
Cocaine and other(s)	30	86	23	82			

*with correction

Treatment Setting

The Washton Institute is a free-standing, private agency located in NYC. It is dually licensed by New York State (Division of Alcoholism and Alcohol Abuse, and Division of Substance Abuse Services) to conduct medically-supervised outpatient alcoholism and drug treatment.

The clinical staff is made up of licensed social workers and Ph.D. psychologists. A primary-care physician and psychiatrist are also on staff for management of medical aspects of the treatment and for psychiatric management when indicated.

Treatment Philosophy and Attitude Toward 12-Step Groups

Treatment at the Washton Institute is abstinence-oriented. Emphasis is placed on the integration of psychotherapy with 'twelve-step' self-help groups such as AA and CA. Psychotherapy, drug education, family counselling, urine testing, relapse prevention, and coping strategies conducive to maintaining a drug-free lifestyle are all integral to the treatment. 12-Step group participation is not mandatory, but is encouraged. 12-step group meetings do not take place on the premises, but there is a mandatory "12-Step Workshop" run by a 12-step group affiliate who is also a graduate of the Washton Institute program. Further, there is an "alumni association" of program graduates who, among other things, encourage 12-step group participation. Thus, all subjects in this study have had exposure to 12-Step group principles, but have not been required to go to 12-step meetings.

The Treatment Program

The duration of the complete treatment program is 16 weeks and consists of two phases. Phase 1 is comprised of the first 90 days (12 weeks), and is the more intensive of the two. Phase 1 features "intensive counseling and therapy at least 4 or 5 times per week" (Washton Institute pamphlet). Therapy consists primarily of therapeutic group sessions with other patients recovering from a substance dependency. These groups are usually co-led by two members of the clinical staff. Patients also have individual sessions with counselors at least once every two weeks, or more as indicated by level of treatment progress. Family counseling and

family education groups are available. The goal of phase 1 is to attain 90 days continuously free of alcohol and drugs (Ibid). While confrontation of denial and other defenses which maintain drug taking behavior is considered a necessary part of treatment, the treatment is not as intensely confrontative as in some residential drug treatment settings such as therapeutic communities. Phase 2 consists of fewer sessions per week (2-3), and the emphasis is on the "mastery of relapse prevention skills and coping strategies needed to maintain a drug-free lifestyle" (Ibid.). Supervised urine testing is a mandatory part of the treatment program.

Exclusionary Criteria for Admission to Outpatient Drug Treatment at the Treatment Setting

Those in need of medically supervised detoxification are accepted to treatment only after completing such a detoxification. These tend to be patients who, in addition to cocaine addiction, have moderate to severe addictions to substances associated with physiological withdrawal syndromes such as alcohol, benzodiazapines, barbiturates, and opiates. Patients maintained on Methadone are not currently accepted to this abstinence-oriented treatment program.

Procedure

Recruitment of Subjects

The researcher attended weekly clinical intake meetings at the Washton Institute to identify potential subjects starting treatment. During the recruitment phase, February to July 1991, approximately 80 patients were identified as potential subjects, having met the criteria for inclusion into the study (male, with a primary diagnosis of cocaine dependence). Recruitment of subjects was done in one of two ways: either by the researcher approaching them individually just before or just after therapy sessions, or by the counselors asking them to print their name and phone number on a form so the researcher could call them, explain the study, and solicit their participation. Five potential subjects did not return after the intake to enter treatment, so could not be recruited. Approximately 75 patients were recruited. This yielded 65 completed baseline protocols. Six subjects started the baseline interview but dropped out of treatment

before finishing it, and 4 recruits refused participation in the study entirely. Of the 65 original subjects, 36 remained in treatment and had follow-up interviews after completion of the 90-day first phase of treatment. Follow-up interviews were completed in early November 1991. One subject who completed a follow-up interview was excluded from the data analysis of treatment completers because of sparse and erratic treatment attendance, and was thus poorly matched to the rest of the completers on level of treatment received, as well as on exposure to 12-Step groups. All four subjects who entered treatment yet refused participation in the study had dropped out by day 90. Subjects were scheduled for interviews at times which did not conflict with treatment schedules, and thus participation in the study represented an extra task for them- requiring them to be at the clinic at times they would not otherwise be there.

The Research Protocol

Baseline interviews were scheduled as close to the start of treatment as possible. The "start of treatment" is defined as the date of the first psychotherapeutic session following the diagnostic ("intake") evaluation by counseling staff. Logistical difficulties sometimes hampered the optimal timing of baseline interviews. These difficulties included the frequent situation of being unable to recruit subjects until after they had already started treatment, tight work schedules, family or child care responsibilities, missed or "forgotten" appointments, and combinations of all of these. The number of days between treatment start and baseline interview ranged from 3 to 37 days, with a mean of 15 (sd=8.5), and a median of 14.

At baseline, subjects were administered the Addiction Severity Index (ASI), the Bell Object Relations Reality Testing Inventory (BORRTI), and a questionnaire about past 12-Step group affiliation. Additional information was also obtained regarding demographic, socio-economic, and treatment history factors. Each completed baseline protocol represents about 1 hr.45min. of interviewing and testing.

Follow-up interviews were scheduled as close to 90 days following the start of treatment as possible. Logistical problems found at baseline were also encountered at follow-up. The number of days between treatment start and follow-up interview ranged from 77 to 236 days, with a

mean of 105 (sd=26.5), and a median of 97. No follow-up was attempted for those who dropped out of treatment. [Days between baseline and follow-up interviews ranged from 56 to 211, with a mean of 90 (sd=26.7), and a median of 84.]

At follow-up, subjects were re-administered the Addiction Severity Index (ASI), the Bell Object Relations Reality Testing Inventory (BORRTI), and a questionnaire about 12-Step group affiliation since starting treatment. Each completed follow-up protocol represents about 1 hr. 30 min. of interviewing and testing.

Instruments

The Bell Object Relations and Reality Testing Inventory (BORRTI) See Appendix A

The BORRTI is "a self-administered paper and pencil inventory consisting of 90 descriptive statements which the respondent marks as 'true' or 'false' about his or her 'most recent experience'. Scoring yields four Object Relations (OR) subscales: Alienation (Aln), Insecure Attachment (IA), Egocentricity (Egc), and Social Incompetence (SI); and three Reality Testing (RT) subscales: Reality Distortion (RD), Uncertainty of Perception (UP), and Hallucinations and Delusions (HD). Object relations and reality testing are each represented by 45 items worded to reflect various levels of object relations and reality testing ego functioning. The BORRTI is appropriate for clinical and non-clinical populations, 15 years of age or older, and requires a sixth grade reading level" (Bell 1989). Subscale scores are calculated by a computer scoring program supplied by the instrument's author.

Bell et al. (1986) assert that in contrast to the use of projectives in which responses are identified along a developmental continuum, "an alternate rationale for assessing the quality of object relations is that this ego function can be discerned from the way an individual conducts his relationships and the way he experiences himself in relation to others." This rationale derives from the work of Bellak et al. (1973), "who offered a multidimensional continuum for rating object relations from clinical interviews in which patients describe their experience of

relationships. Working from Bellak's description of levels of object relations functioning, Bell, Metcalf, and Ryan (1979, 1980) developed a true-false self-report questionnaire composed of items adapted from patients' descriptions of their experience of relationships and their characteristic patterns of relating."

The BORRTI was developed "using a procedure that combines empirical and rational methods of test construction and relies heavily on the techniques of factor analysis" (Alpher 1990). Development of both the Object Relations and Reality Testing components of the BORRTI followed Loevinger's (1957) views on construct validity - that it is comprised of three sequential components: The first step is "theoretical substantive" which refers to "the development of items that necessarily reflect the theoretical premises and orientation of the test developers". The second phase is the "structural" or "internal-structural" which refers to "the actual construction of the instrument itself and the refinement of its discriminative attributes." The third and final component is "external validation" which "is the process of accumulating evidence of the relationship of the measure to other known attibutes of individuals, such as is reflected in established measures" (Alpher 1990).

Psychometric Properties of the Bell Object Relations Reality Testing Inventory

The following paragraph is exerpted from: An Introduction to the Bell Object Relations Reality Testing Inventory (Bell 1989, p 3-4):

"In brief, the OR and RTsubscales were created through factor analysis (N=336) of an earlier version of the scale which had produced a single OR and RT score. A factor replication study (N=613) revealed a high degree of factorial invariance. Discriminant validity was demonstrated in the BORRTI's ability to differentiate well-identified pathological groups. Concurrent validity was supported by related measures of psychopathology. Subscales were also found to have high internal consistency and high split-half reliability; no age bias was revealed (17 years to 70 years); nor were significant gender differences found. One study of college freshmen has demonstrated significantly higher scores for men on the Social Incompetence Scale, but this finding may reflect a particular characteristic of male college freshmen at a

large midwestern university rather than a gender bias in the scale. Social desirability bias was not found on most subscales" [Bell et al. (1985) found that "among undergraduates, social desirability correlated positively with UP, but not with RD or HD" (p 510).]. "Unpublished data on test-retest reliability on clinical and nonclinical populations from periods of 2 weeks to 8 weeks have revealed adequate levels of stability of scores over time. Used as a repeated measure in studies of clinical outcome, the BORRTI has shown alterations in scores concordant with changes in clinical status".

The groups included in Bell's original factor analysis "were selected from seven subpopulations to ensure that a wide range of ego functioning was represented in the development of subscales and that the instrument could be useful for assessment of object relations functioning in nonclinical as well as clinical samples" (Bell et al 1986). These seven subpopulations included: 1) male and female community active adults (a high functioning sample), 2) male and female undergraduates with no identified pathology from three universities (average range of functioning), 3) male and female outpatients who met DSM III criteria for personality disorders other than borderline, 4) male and female out patients as well as male and female inpatients meeting DSM III crieria for borderline personality disorder, 5) male and female inpatients meeting diagnostic criteria for schizophrenia (without evidence of affective disorder), 6) male and female inpatients meeting diagnostic criteria for major affective disorder (without evidence of schizophrenia), 7) male and female inpatients meeting diagnostic criteria for schizoaffective mixed features. (Bell et al 1986, underlining added).

The validity and reliability of the BORRTI are well established. See Bell et al. (1985 & 1986) for complete discussions of the psychometric properties (validity, reliability, and factorial invariance) of the OR and RT subscales of the BORRTI. Alpher (1990) critiques the instrument and its psychometric properties. He concludes that "it would appear that there is no comparable clinical tool at present for the multifactorial identification of severe distortions and alterations in reality perception and difficulties with interpersonal relations" (Alpher 1990, p 51).

Clinical Interpretation of Elevations on OR & RT Subscales

Alienation (Aln): Heightened scores on Alienation refer to "a lack of basic trust in relationships, inability of attain closeness, and hopelessness about maintaining a stable and satisfying level of intimacy" (Bell et al. 1986)..."Relationships tend to be unstable and ungratifying...social relations are superficial with no real sense of connection or belonging...anger and hostile withdrawal are common" (Bell 1989).

Insecure Attachment (IA): On Insecure Attachment, "the theme of high loading items...is painfulness of interpersonal relations. High scorers are likely to be very sensitive to rejection and to have neurotic concerns about being liked and accepted...Relationships are entered into as a result of of a painful search for security, not from enjoyment of others as separate and unique (Bell et al. 1986)...Desparate longings for closeness are present, but separations, losses, and loneliness are poorly tolerated...Relationships are psychologically important, but worry, guilt, jealousy, and anxiety lead to recurrent maladaptive patterns often marked by intense sadomasochistic binds. High scorers frequently seek reassurance of the other's devotion and remain vigilant for any signs of potential abandonment" (Bell 1989).

Egocentricity (Egc): The Egocentricity subscale taps "three general attitudes toward relationships: Others' motivations are mistrusted, others exist only in relation to oneself; and others are to be manipulated for one's own self-centered aims. High scorers tend to have a self-protective and exploitive attitude and be intrusive, coercive, and demanding. They may believe that cooperation toward mutual goals is impossible because everyone is out for him or herself and anyone will try to humiliate and defeat anyone else if given the chance. The high scorer alternately may view him or herself as omnipotent or as powerless and under the control of some indomitable force" (Bell et al. 1986).

Social Incompetence (SI): Elevation on Social Incompetence reflects "shyness, nervousness, and uncertainty about how to interact with members of the oppposite sex and difficulty in making friends. It suggests a self-experience of social incompetence in which relationships appear bewildering and unpredictable and may cause anxiety relieved by avoidance and escape from the interpersonal field...patients with low scores may tend to be gregarious and

superficially confident about their ability to relate to others" (Bell 1989).

Reality Distortion (RD): The Reality Distortion factor taps distortion of internal and external reality. High scorers "are likely to distort the meaning of internal experience leading to bizarre somatic concerns, confusion between waking and dream states, experiences of unreality and difficulty in understanding their own feelings and the feelings of others. Paranoid projection of impulses, wishes and fears and consequent feelings of vulnerability and helplessness may be present...High scorers may have delusions of influence (being controlled externally), thought control, thought broadcasting and paranoid beliefs of being watched, plotted against, condemned, and victimized. They may harbor grandiose or depressive beliefs, become disoriented and have hallucinatory experiences as well...While an elevation on this subscale may suggest the presence of thought disorder and first rank symptoms of schizophrenia, a single elevation on RD without an elevated score on Hallucinations and Delusions (HD) has not been closely linked in research to psychotic disorders" (Bell 1989). However, Bell (1989) speculates that this subscale may identify a predisposition for psychotic symptoms or for the "micro-psychotic" episodes seen in borderline personality disorder. Reality Distortion is highly correlated with depressive mood (Bell et al. 1985).

Uncertainty of Perception (UP): High scorers on Uncertainty of Perception have "a keen sense of doubt about their own perception of internal and external reality. They may be uncertain about their grasp on reality. They are confused by their feelings and by the behavior and feelings of others. Their social judgement may be poor as they stumble through interpersonal events unsure of how to to interpret these happenings. They may experience extreme ambivalence and be unable to be decisive in even small matters. They may use denial as a principal defense against the intense anxiety they experience when confronted with conflict. Although they may have the reflective awareness to be suspect of their own projections and may have sufficient resiliency to identify (sometimes in retrospect) their misperceptions, they are left shaken by their lapses of reality testing. They may feel as though they are on the edge of becoming psychotic...UP is the only subscale to be correlated with social desirability...Unusually low scores on UP in the profile of a psychiatric patient may reflect a denial of illness or lack of

insight. An elevation on UP may also suggest a desire on the respondent's part to convey to the examiner a sense of desperation or a cry for help...Since this scale is an indication of the patient's belief that something is wrong with their mental functioning, it can sometimes represent motivation to seek treatment" (Bell 1991). UP also correlates with depression and anxiety, "suggesting that higher scores may relate to negative self-appraisal and dysphoria" (Bell et al. 1985).

Hallucinations and Delusions (HD): This factor "identifies a dimension of ego function involving severe breaks from reality...(Elevations) suggest the presence of of hallucinatory experiences and paranoid delusions of various types. Many HD items appear on RD but at lower weights, and these two subscales are found to be the most highly correlated (r=.48)...High scorers are most commonly found among schizophrenic and schizoeffective samples with some borderline patients also receiving elevated scores" (Bell 1989).

The Addiction Severity Index (ASI) See **Appendix B** for a copy of the ASI.

The ASI is a "structured, 30- to 40 minute, clinical research interview designed to assess problem severity in seven areas commonly affected by addiction: alcohol use, drug use, medical condition, employment, legal problems, family relations, and psychiatric problems. In each of the areas...objective questions measuring the number, extent, and duration of problem symptoms in the patient's lifetime are asked, and the patient also supplies a subjective report of the recent (past 30 days) severity and importance of each problem area" (McLellan et al.1985; McLellan, Luborsky, O'Brien, & Woody, 1980). As a research tool, information from the objective and subjective areas are combined to form a "composite score" for each of the 7 problem areas measured by the ASI. These composite scores constitute the measure of problem severity (McLellan et al. 1985). The ASI is a very widely used instrument in clinical research on addiction (Emrick & Hanson 1982).

McLellan (1986) found, using the Addiction Severity Index, that this instrument's pre-treatment "global estimate of a patient's psychiatric symptomatology (ie his or her 'psychiatric severity') is the single best overall predictor of outcome across patient types, treatment

methods [for both alcohol and drug abuse treatments], and outcome measures" (p 98).

McLellan (1986) also found "less than 5% inconsistency" between patient self-reports, and consistency checks such as built-in consistency checks within the ASI, "and through spot checks on subsamples of the outpatient population, by assessing the ASI data against urinalysis, pharmacy, and criminal justice system records...Similar findings have been reported by many other investigators studying the validity of patients' self-reports" (p.103).

The validity and reliability of the ASI are well established. See McLellan et al. (1985) for a complete description and discussion of the validity and reliability studies.

12-Step Program Participation Questionnaire: See **Appendix C**

The format of this questionnaire is modeled on the Addiction Severity Index, asking about both lifetime involvement, and also the past 30 days. The content of most of the questions derives from the research on AA conducted by Vaillant (1983), Bissell & Haberman (1984), and Brown (1985). Many of the same questions they asked about affiliation patterns and attitudes towards AA were incorporated into this questionnaire. Occupational categories were derived from Hollingshead & Redlich (1958).

The questions relate to the following areas: frequency of participation with 12-step groups, affiliation with a sponsor, socio-demographic characteristics of sponsor and perceived satisfaction of relationship with sponsor, social support received from family/friends for participation in 12-step groups, and characteristics of 12-step groups which patients found most and least helpful or appealing.

Two Approaches to the Measurement of 12-Step Group Affiliation

The measurement of affiliation with 12-step groups was done in two ways, with separate data analyses for each. One was to measure the number of 12-step meetings subjects attended between baseline and follow-up interviews. The other approach recorded subjects' lifetime history of attendence prior to entering the current treatment (ie the number of meetings attended lifetime).

Demographic, Socio-economic, and Treatment History

Questions eliciting this information are divided between the ASI and the 12-Step questionnaire. The information is not necessarily reflected in ASI problem severity scores. This information includes: age, race, religious preference, marital status, number of children, educational level, occupation, individual income, family income, presence of multiple current addictions, history of past addictions, number of previous treatments for addiction (detoxifications, residential rehabilitations, outpatient treatments), number of non-addiction related psychological and psychiatric treatments, amount of drug-free time prior to starting the current treatment, and involvement in illegal activity.

Diagnostic Criteria for Cocaine Dependence

Information obtained in the research protocol confirmed that subjects met DSM III-R diagnostic criteria for Cocaine Dependence. This information addressed the areas of loss of control (over the occasion or amount of cocaine use), cocaine problem duration, psychosocial consequences of cocaine use, and continued use despite the consequences.

Special Variables

Certain variables derived from OR and RT subscale scores end with a 'PE' (eg AlnPE). These are dichotomous variables which categorize the original subscale score as either pathologically elevated or 'not pathologically elevated', using Bell's (1987) criteria ($\geq$ 85th percentile on non-pathological norms). Also, for some data analyses, OR/RT subscale scores were ranked by percentile and then sorted into the percentile groups of lower, middle, and upper thirds. These variables are expressed as %ile Aln, %ile IA, %ile Egc, etc.

Chapter 4

Results

This chapter is has 4 main sections. Section 1 gives an overview of the follow-up sample: changes in drug and alcohol use between baseline and follow-up, changes in object relations (OR) and reality testing (RT) scores, and comparisons with several diagnostic criterion groups on OR & RT scores at baseline and at follow-up. Section 2 deals with the relationship between drug relapse during the current treatment and OR & RT variables. Section 3 examines with the relationship between OR & RT variables and 12-step attendance during the current treatment, as well as the covariation of attendance with other outcome measures such as drug use and ASI severity scores. Section 4 addresses OR, RT, and other correlates of lifetime 12-step attendance, as well as the covariation of levels of lifetime attendance with outcome measures, including level of attendance during the current treatment. Sections 3 and 4 also explore the covariation of 12-step group sponsor involvement with attendance and outcome measures.

Section 1: Overview of the Follow-Up Sample

Baseline versus Follow-Up Drug and Alcohol Use

The number of days subjects used cocaine, alcohol, and other drugs declined significantly during the current treatment. The largest decline was in days of cocaine use. **See Table 3, below.** At baseline (measuring the 30 days prior to treatment start), days of cocaine use ranged from 0 to 22 with a mean of 7.1 (sd=6.6). At follow-up, days of use (for the 30 days preceding the follow-up interview) ranged from 0 to 10 with a mean of .49 (sd=1.7), Wilcoxon, $z = -4.666$, $p < .0001$.

Days of alcohol use at baseline ranged from 0 to 30 with a mean of 7.7 (sd=9.4). At follow-up, days of use ranged from 0 to 7 with a mean of .43 (sd=1.3), Wilcoxon, z = -3.979, p< .0001.

At baseline, days of other drug use ranged from 0 to 30 with a mean of 2.8 (sd=6.4). At follow-up, days of use ranged from 0 to 30 with a mean of .91 (sd=5.1), Wilcoxon, z = -3.179, p< .002.

Days of polydrug use at baseline ranged from 0 to 20 with a mean of 5.4 (sd=6.6). At follow-up, days of use ranged from 0 to 15 with a mean of .54 (sd=2.6), Wilcoxon, z = -4.115, p< .0001.

Table 3: Mean days of Drug and Alcohol Use: Baseline versus Follow-Up

	Baseline		Follow-Up		Wilcoxon	
Measure	mean	sd	mean	sd	z	p
Number of days/past 30:						
Cocaine	7.1	6.6	.5	1.7	-4.666	.0001
Alcohol	7.7	9.4	.5	1.3	-3.979	.0001
Other Drug	2.8	6.4	1	5.1	-3.179	.002
Polydrug	5.4	6.6	.5	2.6	-4.115	.0001

Note: Baseline means were lowered somewhat by the six subjects who were totally abstinent during the 30 days prior to entry into treatment.

Baseline versus Follow-Up Addiction Severity Scores

There were significant declines in problem severity scores on alcohol, drug, and family/social dimensions of the Addiction Severity Index (ASI). **See Table 4, below.** The greatest decline was on the drug severity score. The highest mean severity scores were on employment and psychological, both at baseline and at follow-up. Medical, employment, legal, and psychological scores non-significantly declined.

On medical, the theoretical range is from 0 to 1, with 1 representing the greatest severity. At baseline scores ranged from 0 to 1, with a mean of .255 (sd=.31). At follow-up, scores ranged from 0 to .833, with a mean of .213 (sd=.28). This decline was non-significant.

On employment, the theoretical range is from .139 to 1. At baseline, scores ranged from

.211 to 1, with a mean of .483 (sd=.25). At follow-up, scores again ranged from .211 to 1, with a mean of .436 (sd= .24). The decline was non-significant.

On alcohol severity, where the theoretical range is from 0 to .901, actual scores ranged from 0 to .83 at baseline, with a mean of .257 (sd= .23). At follow-up, scores ranged from 0 to .524, with a mean of .137 (sd= .14), matched t= 3.415, 34 df, p< .001.

On drug severity, the theoretical range is from 0 to 1.25. Baseline scores ranged from .084 to .417, with a mean of .227 (sd=.08). At follow-up, scores ranged from 0 to .375, with a mean of .107 (sd=.07), matched t= 8.498, 34 df, p< .0001.

On legal severity, the theoretical range is from 0 to .887. At baseline, scores ranged from 0 to .45 with a mean of .032 (sd=.09). At follow-up, scores ranged from 0 to .15 with a mean of .01 (sd= .03). The decline was non-significant.

On family/social, the theoretical range is from -.2 to .8. Baseline scores ranged from -.2 to .648 with a mean of .212 (sd=.23). At follow-up, scores ranged from -.2 to .552 with a mean of .051 (sd= .22), matched t= 3.399, 34 df, p< .001.

On psychological severity, the theoretical range is from 0 to 1.006. At baseline, scores ranged from 0 to .646 with a mean of .31 (sd= .2). At follow-up, scores ranged from 0 to .642 with a mean of .278 (sd= .18). The decline was non-significant.

Table 4: Addiction Severity Index Composite Scores: Baseline vs Follow-Up

	Baseline		Follow-Up		Paired		2-tail
ASI Composite	mean	sd	mean	sd	t	df	p
Medical	.255	.31	.213	.28	.634	34	n.s.
Employment	.483	.25	.436	.24	1.398	34	n.s.
Alcohol	.257	.23	.137	.14	3.415	34	.001
Drug	.227	.08	.107	.07	8.498	34	.0001
Legal	.032	.09	.01	.03	1.581	34	n.s.
Family/Social	.212	.23	.051	.22	3.399	34	.001
Psychological	.310	.2	.278	.18	.876	34	n.s.

Relapse During Treatment

Days of drug and alcohol usage for the entire 90 days since the start of treatment was recorded. About half the sample (51%, n=18) was abstinent from cocaine during the 90 days preceding the second interview. Of the 17 subjects (49%) who used cocaine at least once during the current treatment, the number of days of cocaine usage ranged from 1 to 18, with a mean of 2.8 (sd=4.1). Eight of the 17 who used cocaine used it on one day only, while 9 had 2 or more "slips" (ie days of use). Three subjects had 4 or more days of cocaine usage. Thus, while the overall rates of drug and alcohol use for the sample steeply declined over the course of treatment, there is variability in the occurrence of relapse, and it is this variability which OR and RT measures were hypothesized to account for (see section 2, below).

OR and RT: Baseline versus Follow-Up Measures

In the domain of object relations (OR), there was a significant decline on the mean Alienation score (from .208 to .007, paired $t = 2.172$, 34 df, $p < .03$). Insecure Attachment, Egocentricity, and Social Incompetence non-significantly declined. In the domain of reality testing (RT), the mean Reality Distortion score significantly declined (from -.204 to -.312, paired $t = 2.007$, 34 df, $p < .05$). The RT subscales Uncertainty of Perception and Hallucinations/Delusions non-significantly declined. Alienation and Uncertainty of Perception had the highest proportions of subjects scoring in the pathologically elevated range both at baseline and follow-up.

See Tables 5 & 6, below.

Table 5: OR and RT Scores: Baseline vs Follow-Up

	Baseline		Follow-Up		Paired		2-tail
OR/RT Subscale	mean	sd	mean	sd	t	df	p
Alienation	.208	.69	.007	.73	2.172	34	.04
Insecure Attachment	.101	.85	.030	.77	.581	34	n.s.
Egocentricity	-.025	.80	-.241	.55	1.728	34	n.s.
Social Incompetence	-.002	.93	-.044	.80	.468	34	n.s.
Reality Distortion	-.204	.50	-.312	.47	2.007	34	.05
Uncertainty of Perception	.327	.9	.133	.72	1.68	34	n.s.
Hallucinations/Delusions	-.146	.54	-.193	.55	.458	34	n.s.

Table 6: Proportion of Subjects Meeting Criterion for Pathological Elevation* on OR and RT Scores: Baseline versus Follow-Up

	Baseline		Follow-Up		Wilcoxon	
OR/RT Subscale	n	%	n	%	z	p[1]
Alienation	13	37	11	31	-.5	n.s.
Insecure Attachment	10	29	7	20	-.905	n.s.
Egocentricity	6	17	4	11	-1	n.s.
Social Incompetence	7	20	5	14	-.632	n.s.
Reality Distortion	4	11	4	11	0	n.s.
Uncertainty of Perception	12	34	11	31	-.243	n.s.
Hallucinations/Delusions	3	9	2	6	-.447	n.s.

* ≥85th percentile of Bell's non-pathological norms (N=934, Bell 1987). 1: alpha = .05

Although the proportions of scores in the pathologically elevated (PE) range did not significantly change between baseline and follow-up (Table 6), the variability in the number of subscales on which subjects scored in the PE range revealed a wide range of ego functioning both at baseline and at follow-up. At baseline, 13 subjects (37%) had no pathologically elevated (PE) OR/RT subscale scores. Nine subjects (26%) had one subscale score in the PE range, six subjects (17%) had two scores in the PE range, 3 subjects (9%) had four scores in the PE range, 2 (6%) subjects had five scores in the PE range, and 2 subjects (6%) had six scores in

the PE range at baseline. The most frequent combination was Alienation and Uncertainty of Perception (n=8, 23% of all subjects).

At follow-up, 16 subjects (46%) had no pathological elevations, while six subjects (17%) had one, six subjects (17%) had two, 3 subjects (9%) had three, 3 subjects (9%) had four, and 1 subject (3%) had five scores in the PE range at follow-up. The most common combination at follow-up was again Alienation and Uncertainty of Perception (n=7, 20% of all subjects). These findings demonstrate a broad spectrum of ego functioning and impairment among subjects both at baseline and at follow-up.

Object Relations Subscales

On Alienation, baseline scores ranged from -.819 to 1.523 with a mean of .208 (sd=.69). A score above .36 is considered pathologically elevated, and 37% (n=13) met criterion for pathological elevation at baseline. At follow-up, scores ranged from -.857 to 1.732 with a mean of .007 (sd=.73). The decline was significant (paired t = 2.172, 34 df, p< .03). Thirty one percent (n=11) were in the pathologically elevated range at follow-up.

On Insecure Attachment, baseline scores ranged from -1.284 to 1.896 with a mean of .101 (sd=.85). A score above .72 is considered pathologically elevated, and 29% (n=10) met criterion for pathological elevation at baseline. At follow-up, scores ranged from -1.309 to 1.418 with a mean of .03 (sd=.77). The decline was non-significant. Twenty percent (n=7) were in the pathologically elevated range at follow-up.

On Egocentricity, baseline scores ranged from -1.013 to 2.283 with a mean of -.025 (sd=.8). A score above .43 is considered pathologically elevated, and 17% (n=6) met criterion for pathological elevation at baseline. At follow-up, scores ranged from -1.292 to .993 with a mean of -.241 (sd=.55). The decline was non-significant. Eleven percent (n=4) were in the pathologically elevated range at follow-up.

On Social Incompetence, baseline scores ranged from -.953 to 2.025 with a mean of -.002 (sd=.93). A score above .98 is considered pathologically elevated, and 20% (n=7) met criterion for pathological elevation at baseline. At follow-up, scores ranged from -1.046 to 2.093 with a

mean of -.044 (sd=.8). The decline was non-significant. Fourteen percent (n=5) were in the pathologically elevated range at follow-up.

Reality Testing Subscales

On Reality Distortion, baseline scores ranged from -.761 to 1.881 with a mean of -.204 (sd=.5). A score above .20 is considered pathologically elevated, and 11% (n=4) met criterion for pathological elevation at baseline. At follow-up, scores ranged from -.844 to 1.413 with a mean of -.312 (sd=.47). The decline was significant (matched t= 2.007, 34 df, p< .05). Eleven percent (n=4) were again in the pathologically elevated range at follow-up.

On Uncertainty of Perception, baseline scores ranged from -1.189 to 2.304 with a mean of .327 (sd=.9). A score above .54 is considered pathologically elevated, and 34% (n=12) met criterion for pathological elevation at baseline. At follow-up, scores ranged from -1.262 to 1.813 with a mean of .133 (sd=.72). The decline was non-significant. Thirty one percent (n=11) were in the pathologically elevated range at follow-up.

On Hallucinations/Delusions, baseline scores ranged from -.537 to 1.633 with a mean of -.146 (sd=.54) A score above .11 is considered pathologically elevated, and 9% (n=3) met criterion for pathological elevation at baseline. At follow-up, scores ranged from -.679 to 1.965 with a mean of -.193 (sd=.55). The decline was non-significant. Six percent (n=2) were in the pathologically elevated range at follow-up.

Comparison of the Cocaine Dependent Sample with Bell's Criterion Groups At Baseline

Using multiple t-test comparisons, the baseline OR and RT scores of the cocaine-dependent sample were compared with five criterion groups which were part of Bell's standardization sample. These criterion groups were: Borderline Personality Disorder, Other Personality Disorder (non-Borderline), College Students, Community Active Adults, and Major Affective

Disorder. **See Table 7, below.**

At baseline, the current sample of cocaine addicts most closely resembled Bell's major affective disorder criterion group, and there were no significant differences on any of the OR/RT subscales. The current sample was non-significantly lower on Egocentricity, Social Incompetence, and Reality Distortion, and was non-significantly higher on Alienation, Insecure Attachment, Uncertainty of Perception, and Hallucinations/Delusions.

Table 7: Bell's Criterion Groups versus Cocaine Addicts at Baseline

	Baseline OR or RT Subscale						
Criterion Group	**Aln**	**IA**	**Egc**	**SI**	**RD**	**UP**	**HD**
Borderline (n=37)	5.591[a]	3.942[a]	3.161[b]	1.070	3.689[a]	2.922[b]	3.772[a]
Other Axis II (n=40)	2.087[d]	2.056[d]	.570	1.049	2.167[d]	.014	-.711
Students (n=145)	-3.725[a]	-1.651	-1.130	-.896	.453	-3.446[a]	-.400
CAA (n=60)	-7.789[a]	-3.648[a]	-2.884[b]	-2.081[d]	-3.326[b]	-5.264[a]	-1.045
Major Affective*	-.583	-.215	1.291	1.288	2.389[c]	-.97	-.813

Superscripts across rows: [a] $p < .001$; [b] $p < .01$; [c] $p < .02$; [d] $p < .05$;

A positive t-score signifies that the criterion group mean was higher than that of the current Cocaine-Addict sample. A negative t-score signifies that the Cocaine-Addict mean was higher than that of the criterion group. The relative sample sizes of the Student and CAA groups are too large for t-test comparisons with the current sample, but the data is included for illustration.

*Because the standard deviations of the scores of the Major Affective Disorder criterion group (n=29) were not available, their means were treated as population means, and comparisons were made with one-sample t-tests. Thus it is highly probable that the significant t-value on RD would be non-significant had it been possible to use an idependent t-test.

The cocaine addicts were highly dissimilar to both Borderlines and Community Active Adults. The cocaine addicts were significantly lower than Borderlines on all OR and RT subscales except Social Incompetence (OR), and were significantly higher than Community Active Adults on all OR and RT subscales except Hallucinations/Delusions (RT).

Compared to College Students, the cocaine sample scored significantly higher on Alienation (OR) and Uncertainty of Perception (RT). With respect to the Other Personality Disorder group, the cocaine addicts scored significantly lower on Alienation, Insecure Attachment, and

Reality Distortion.

Thus, to rank the criterion groups according to their similarity to the cocaine sample (ie according to the number of subscales on which they significantly differed from the cocaine addicts), most to least similar: Major Affective Disorder, College Students, Other Personality Disorder, Borderlines, and Community Active Adults (Borderlines and CAA's are tied- each are significantly different from cocaine addicts on 6 subscales, though in opposite directions).

At Follow-Up

Follow-up OR & RT scores were also compared with Bell's five criterion groups using multiple t-test comparisons. The general decline of OR & RT scores at follow-up increased the current sample's similarity to non-pathological groups and its dissimilarity to pathological groups. **See Table 8.**

Table 8: Bell's Criterion Groups versus Cocaine Addicts at Follow-Up

	Follow-Up OR or RT Subscale						
Criterion Group	**Aln**	**IA**	**Egc**	**SI**	**RD**	**UP**	**HD**
Borderline (n=37)	6.556[c]	4.530[c]	4.605[c]	1.333	4.164[c]	4.143[c]	3.944[c]
Other Axis II (n=40)	3.134[d]	2.526[e]	1.722	1.317	2.761[d]	1.053	-.257
Students (n=145)	-2.174[f]	-1.225	.372	-.658	1.228	-2.258[f]	.027
CAA (n=60)	-5.822[c]	-3.354[d]	-1.500	-1.950	-2.200[f]	-4.496[c]	-.609
Major Affective*	1.084	.309	4.217[a]	1.802	3.897[b]	.384	-.295

Superscripts across rows: a p< .0002; b p< .0004; c p< .001; d p< .01; e p< .02; f p< .05. A positive t-score signifies that the criterion group mean was higher than that of the current Cocaine-Addict sample. A negative t-score signifies that the Cocaine-Addict mean was higher than that of the criterion group. The relative sample sizes of the Student and CAA groups are too large for t-test comparisons with the current sample, but the data is included for illustration.

*Because the standard deviations of the scores of the Major Affective Disorder criterion group (n=29) were not available, their means were treated as population means, and comparisons were made with one-sample t-tests. Thus, "actual" significance levels are undoubtedly lower than reported here.

At follow-up, the cocaine dependent sample scored significantly lower than the major affective disorder group on Reality Distortion and Egocentricity.

The cocaine addicts were most dissimilar to Borderlines, and again scored significantly lower on all OR & RT subscales except Social Incompetence, which was non-significantly lower.

Compared with Community Active Adults, the cocaine sample remained significantly higher on Alienation, Insecure Attachment, Reality Distortion, and Uncertainty of Perception, but was no longer significantly different on Egocentricity or Social Incompetence. The difference on Hallucinations/Delusions remained non-significant.

The cocaine sample remained significantly higher than College Students on Alienation and Uncertainty of Perception, though the magnitude of difference was smaller than at baseline.

With respect to the Other Personality Disorder group, the cocaine sample was again significantly lower on Alienation, Insecure Attachment, and Reality Distortion.

Thus, to rank the criterion groups according to their similarity to the cocaine sample at follow-up (most to least similar): College Students & Major Affective Disorder (each different on 2 subscales), Other Personality Disorder, Community Active Adults, and Borderlines.

Comparison of OR & RT Scores with Tatarsky's Cocaine User Groups

Baseline

At baseline, OR/RT scores for the current sample were intermediate between Tatarsky's (1986) recreational and compulsive groups on all factors except Social Incompetence, where the current sample had the highest mean score. The current sample at baseline more closely resembled Tatarsky's compulsive user group, but had less impaired reality testing. **Table 9.**

Compared with Tatarsky's compulsive user group (n=38), the current sample at baseline was significantly lower on Reality Distortion and Hallucinations/Delusions, and was non-significantly lower on Alienation, Insecure Attachment, Egocentricity, and Uncertainty of Perception. The current sample was non-significantly higher on Social Incompetence at baseline. Compared with Tatarsky's recreational user group (n=31), the current sample at baseline was significantly higher on Alienation, Insecure Attachment, Egocentricity, and Uncertainty of Perception, while being non-significantly higher on Social Incompetence, Reality Distortion, and Hallucinations/Delusions.

Table 9: Tatarsky's Groups* Versus the Current Sample

	Recreational (n=31)			Quasi-Compulsive (n=19)			Compulsive (n=38)		
QR/RT Subscale	mean	sd	%ile[1]	mean	sd	%ile	mean	sd	%ile
Alienation	-.43[ac]	.54	53	.05	.76	75	.24	.75	80
Insecure Attachment	-.32[a]	.64	46	.17	.97	68	.29	.88	72
Egocentricity	-.45[a]	.44	41	-.05	.81	66	.08[d]	.85	72
Social Incompetence	-.26	.84	56	-.29	.55	55	-.22	.68	58
Reality Distortion	-.38	.42	53	.10[d]	.91	81	.30[bd]	1.35	86
Uncert. of Perception	-.37[ac]	.48	49	-.01	.74	68	.38	.92	80
Halluc. & Delusions	-.29	.27	54	.21[d]	1.33	86	.32[bd]	1.17	88

* Data excerpted from Tatarsky (1986). The relative sample size of Quasi-Compulsive group is too small for t-test comparisons with the current sample, but data is included for illustration.

[1] Assigns the mean score to its approximate percentile rank on Bell's (1987) non-pathological norms.

[a] significantly lower than the current sample's baseline score ($p < .05$); [b] significantly higher than the current sample's baseline score ($p < .05$); [c] significantly lower than the current sample's follow-up score ($p < .05$); [d] significantly higher than the current sample's follow-up score ($p < .05$); Comparisons by t-tests for independent samples.

Follow-Up

At follow-up, mean scores for the current sample were again intermediate between Tatarsky's recreational and compulsive groups on all factors except Social Incompetence, where the current sample still had the highest mean score. The current sample at follow-up more closely resembled Tatarsky's recreational user group.

Compared with Tatarsky's compulsive user group (n=38), the current sample at follow-up was significantly lower on Egocentricity, Reality Distortion and Hallucinations/Delusions. They were non-significantly lower on Alienation, Insecure Attachment, and Uncertainty of Perception, while remaining non-significantly higher on Social Incompetence. Compared with Tatarsky's recreational user group (n=31), the current sample at follow-up was significantly higher on Alienation and Uncertainty of Perception, and non-significantly higher on Insecure Attachment, Egocentricity, Social Incompetence, Reality Distortion, and

Hallucinations/Delusions.

Summary of Section 1

Comparison of the current sample to pathological and non-pathological criterion groups revealed significant object relational and reality testing ego impairments both at baseline (see Table 7) and at follow-up (see Table 8). All OR & RT subscales declined between baseline and follow-up. On Alienation and Reality Distortion, the declines were significant (matched t-tests). These results support Hypothesis 1 ("For treatment completers, there will be significant improvements in object relations and reality testing at 90 days").

There was large variation in the number of OR & RT subscales on which subjects scored in the pathologically elevated (PE) range, indicating a wide range of ego functioning and impairment among subjects both at baseline and at follow-up. At baseline, 37% (n=13) were non-PE on all subscales. At follow-up, 46% (n=16) were non-PE on all OR/RT subscales. The most frequent PE combination was Alienation and Uncertainty of Perception both at baseline (n=8, 23%) and at follow-up (n=7, 20%).

At baseline, the current sample of cocaine addicts most closely resembled Bell's major affective disorder criterion group. The cocaine addicts were highly dissimilar to both Borderlines and Community Active Adults. The general decline of OR & RT scores at follow-up increased the current sample's similarity to non-pathological groups, and its dissimilarity to pathological groups. Nevertheless, the current sample was still significantly more impaired than Community Active Adults on Alienation, Insecure Attachment, Reality Distortion, and Uncertainty of Perception at follow-up.

At baseline, the current sample more closely resembled Tatarsky's compulsive user group but had less impaired reality testing. At follow-up, the current sample more closely resembled Tatarsky's recreational group.

The number of days subjects used cocaine, alcohol, and other drugs significantly declined from baseline to follow-up. The largest decline was in days of cocaine use. About half the sample (51%, n=18) was abstinent from cocaine during the 90 days preceding the second interview. Of

the 17 subjects who used cocaine at least once during the current treatment, 8 used it on one day only, while 9 had 2 or more "slips" (ie days of use). Three subjects had 4 or more days of cocaine use.

The highest mean ASI severity scores were on employment and psychological, both at baseline and at follow-up. There were significant declines in problem severity scores on alcohol, drug, and family/social dimensions of the Addiction Severity Index. The greatest decline was in the drug severity score.

Conclusion

Comparison of the current sample to pathological and non-pathological criterion groups revealed significant object relational and reality testing ego impairments both at baseline and at follow-up. Some of these impairments (Alienation & Reality Distortion) significantly improved over the course of the current treatment, supporting the hypothesis that there would be significant improvements in object relations and reality testing at 90 days for treatment completers (Hypothesis # 1).

There was also a wide range of ego functioning and impairment among subjects both at baseline and at follow-up, as manifest by large variation in the number of OR & RT subscales on which subjects scored in the pathologically elevated (PE) range.

Section 2: Object Relations, Reality Testing, and Relapse

About half the sample (51%, n=18) was abstinent from cocaine during the 90 days preceding the second interview, while 49% (n=17) had at least one "slip" (ie day of cocaine use). Of the 17 who used cocaine at least once, the number of days of cocaine use ranged from 1 to 18, with a mean of 2.8 (sd=4.1). Fourteen of the 17 who used cocaine used it on one or two days, while 3 subjects had 4 or more days of cocaine use. Only 13 subjects (37%) were abstinent from all drugs and alcohol.

Part A of this section focuses on cocaine relapse. Part B focuses on all drug and alcohol relapse. Part C looks at subjects' inpatient (residential) rehabilitation history in order to take a longer term view of the relationship between OR/RT variables and relapse.

A) Cocaine Relapse

Baseline OR and RT Scores as Predictors of Cocaine Use

Social Incompetence (SI) was the strongest baseline OR/RT correlate of days of cocaine use between baseline and follow-up ($r = .388$, $r^2 = .151$, adj. $r^2 = .125$, $p < .02$). The correlation between Alienation and cocaine use approached significance ($r = .313$, $p < .06$). Other baseline OR & RT subscales had low, non-significant correlations. Baseline OR/RT variables by themselves did not meet criteria for inclusion into a multiple regression analysis.

Cocaine Use During Treatment as a Function of Baseline OR & RT Percentile Group

For each baseline OR and RT subscale, subjects were divided into three groups based on their percentile score: lower third (n=11), middle third (n=12), and upper third (n=12). The groups on each subscale were then compared for days of cocaine use during treatment using Kruskal-Wallis non-parametric ANOVAs. No statistically significant differences were found on days of cocaine use based on these groupings for any OR or RT subscale.

Miscellaneous Predictors of Cocaine Relapse

Several non-hypothesized variables were incidentally found to be positively and significantly correlated to days of cocaine use in the 90 days preceding follow-up. These variables included: number of residential rehabilitation admissions ($r = .599$, $r^2 = .359$, $p < .0001$), overall treatment number (inpatient plus outpatient, $r = .514$, $r^2 = .265$, $p < .001$), number of detoxification admissions ($r = .471$, $r^2 = .222$, $p < .001$), and baseline ASI Drug severity score ($r = .44$, $r^2 = .194$, $p < .008$).

Preferred Route of Administration

Subjects who preferred smoking crack or freebase (n=20) did not differ significantly from those who preferred intranasal cocaine administration (n=15) on the number of days of cocaine use during the research period (Mann-Whitney U). For the crack group, days of cocaine use ranged from 0 to 18, with a mean of 2 (sd= 4). For the intra-nasal group, days of cocaine use ranged from 0 to 4, with a mean of 1 (sd=1.2). Eleven (55%) crack users remained abstinent in the 90 days preceding follow-up, and 7 (47%) intra-nasal users remained cocaine abstinent. There were also no significant differences on days of alcohol, other, or polydrug use during the current treatment.

Alcohol and Other Drug Use as Correlates of Cocaine Use During Treatment

Nineteen subjects (54%) remained abstinent from alcohol in the 90 days preceding follow-up. For the sixteen who drank alcohol on at least one day, the number of days ranged from 1 to 12, with a mean of 2.7 (sd=3). The numbers of days of alcohol use for all subjects correlated .493 ($r^2 = .243$, $p < .002$) with the number of days of cocaine use during treatment.

Of the 18 subjects who were abstinent from cocaine in the 90 days preceding follow-up, 4 (22%) used alcohol on at least one occasion, and one (6%) used marijuana (though not alcohol). Thus, only 13 subjects (37%) were abstinent from all drugs and alcohol.

Of the 17 subjects who used cocaine at least once, 12 (71%) used alcohol at least once. One additionally used marijuana, and one additionally used marijuana and benzodiazepines. Five

subjects used only cocaine during this period. Thus, 75% of those who drank alcohol between baseline and follow-up also used cocaine, and conversely, 71% of those who used cocaine also drank alcohol.

B) All Drugs and Alcohol: Low versus High Relapse

As noted above, only 13 subjects (37%) were abstinent from all drugs and alcohol between baseline and follow-up. In order to consider relapse on all mood altering substances (rather than just cocaine), days of use between baseline and follow-up of all substances (alcohol, cocaine, and other drugs) were added together and used as the dependent variable. Use of this broader relapse measure enabled the division of subjects into low and high relapse groups. The low relapse group (n=18) had zero or one day of use for all drug/alcohol categories combined. Thirteen subjects had no days of use, while 5 had one day of use. Those in the high relapse group (n=17) had 2 or more days of use resulting from the sum of alcohol+cocaine+other drug categories (mean= 8.8, sd= 20). Days of use ranged from 2 to 85. The high relapse group had significantly more days of alcohol, cocaine, and polydrug use between baseline and follow-up, and was non-significantly higher on days of "other" drug use (Mann-Whitney U). **See Table 10, below**. The low and high relapse groups did not significantly differ on drug or alcohol use prior to starting the current treatment.

Table 10: Drug and Alcohol Use Comparisons for Low vs High Relapse Groups

	Low Relapse (n=18)		High Relapse (n=17)				2-tail
Variable	**mean**	**sd**	**mean**	**sd**	**U***	**z****	**p**
Number of days/past 30 (Pre-Tx):							
Cocaine	5.7	6	8.6	7	117	z = -1.196	n.s.
Alcohol	7.2	9.7	8.2	9.4	151	z = -.067	n.s.
Other	2.7	5.8	2.9	7.2	129.5	z = -.861	n.s.
Polydrug	5.3	6.9	5.5	6.4	149	z = -.135	n.s.
Number of days/past 90 (follow-up):							
Cocaine	.11	.32	2.7	4.2	26	z = -4.553	.0001
Alcohol	.17	.38	2.4	3.1	52.5	z = -3.67	.0004
Other	0	0	3.7	14.5	126	z = -1.835	.07
Polydrug	0	0	2.3	5.4	54	z = -3.985	.0001

*Mann-Whitney U; ** corrected for ties

Using this broader measure of relapse, object relations subscales were the only variables (other than their relapse rates) which significantly distinguished the low and high relapse groups. These differences were not evident using cocaine relapse alone as the dependent measure.

OR & RT

At baseline, those who would later fall into the high relapse group scored significantly higher on Alienation compared with the low relapse group. **See Table 11, below.** On Social Incompetence, the difference between the high and low relapse groups only approached significance ($p < .07$) even though Social Incompetence was the strongest baseline OR/RT correlate to the broader relapse measure ($r = .376$, $r^2 = .142$, $p < .03$). The high relapse group was also non-significantly higher on Insecure Attachment, Egocentricity, and Uncertainty of Perception, and was non-significantly lower on Reality Distortion and Hallucinations/Delusions.

At follow-up, the high relapse group remained significantly higher than the low relapse group on Alienation. On Social Incompetence, the high relapse group was now significantly higher than the low relapse group. The high relapse group was now non-significantly higher on

all other OR/RT subscales: Insecure Attachment, Egocentricity, Reality Distortion, Uncertainty of Perception, and Hallucinations/Delusions.

Table 11: OR & RT for Low vs High Relapse Groups

	Low Relapse (n=18)			High Relapse (n=17)					2-tail
Variable	**mean**	**sd**	**%ile***	**mean**	**sd**	**%ile***	**t**	**df**	**p**
Baseline									
Alienation	-.049	.58	71	.481	.71	87	-2.427	33	.02
Insecure Attachment	-.024	.87	59	.233	.82	71	-.898	33	n.s.
Egocentricity	-.066	.94	66	.019	.65	69	-.307	33	n.s.
Social Incompetence	-.274	.74	55	.287	1.03	71	-1.858	33	.07
Reality Distortion	-.176[a]	.64	69	-.232	.32	65	.326	33	n.s.
Uncertainty of Perception	.251[b]	.93	76	.408	.89	80	-.513	33	n.s.
Hallucinations/Delusions	-.101	.59	76	-.194	.46	68	.503	33	n.s.
Follow-Up									
Alienation	-.245	.60	63	.273	.77	81	-2.221	33	.03
Insecure Attachment	-.159	.71	54	.23	.80	70	-1.522	33	n.s.
Egocentricity	-.313	.56	51	-.165	.51	60	-.796	33	n.s.
Social Incompetence	-.382	.37	50	.313	.98	72	-2.812	33	.008
Reality Distortion	-.321[a]	.51	58	-.302	.5	59	-.113	33	n.s.
Uncertainty of Perception	-.043[b]	.64	66	.32	.78	78	-1.513	33	n.s.
Hallucinations/Delusions	-.197	.56	67	-.188	.55	68	-.05	33	n.s.

Superscripts down colums (within groups): [a] $p < .04$, [b] $p < .08$ (approaches significance), matched t-tests

No within group comparison was significant for the high relapse group.

*Assigns the mean score to its approximate percentile rank on Bell's (1987) non-pathological norms.

ASI problem severities

There were no significant differences between the low and high relapse groups either at baseline or follow-up on ASI problem measures. **See Table 12, below**. At baseline, the low relapse group was non-significantly lower on employment, drug, legal, and psychological, and was non-significantly higher on medical, alcohol, and family/social.

Between baseline and follow-up, the low relapse group significantly declined on medical, alcohol, drug, and family/social, while the high relapse group significantly declined on drug only. At follow-up, the low relapse group was non-significantly lower on all ASI severities.

Table 12: Addiction Severity Index Scores for Low vs High Relapse Groups

	Low Relapse (n=18)		High Relapse (n=17)				2-tail
Variable	**mean**	**sd**	**mean**	**sd**	**t**	**df**	**p**
Baseline							
Medical	.301[a]	.30	.207	.31	.902	33	n.s.
Employment	.425	.24	.543	.24	-1.441	33	n.s.
Alcohol	.284[b]	.24	.228	.21	.737	33	n.s.
Drug	.224[c]	.08	.231[e]	.08	-.234	33	n.s.
Legal	.03	.11	.033	.08	-.087	33	n.s.
Family/Social	.26[d]	.23	.162	.23	1.26	33	n.s.
Psychological	.296	.2	.325	.20	-.442	33	n.s.
Follow-Up							
Medical	.165[a]	.26	.263	.30	-1.031	33	n.s.
Employment	.382	.22	.493	.26	-1.364	33	n.s.
Alcohol	.137[b]	.12	.138	.15	-.04	33	n.s.
Drug	.088[c]	.06	.126[e]	.08	-1.598	33	n.s.
Legal	.008	.02	.012	.04	-.409	33	n.s.
Family/Social	.037[d]	.19	.066	.26	-.384	33	n.s.
Psychological	.235	.17	.324	.19	-1.468	33	n.s.

Superscripts down columns (within groups): [a] $p < .05$, [b] p .009, [c] $p < .0001$, [d] $p < .006$, [e] $p < .0001$ (matched t-tests).

Differences on Miscellaneous Variables

Differences between low and high relapse groups were not significant on any of the following variables: age, income, past drug treatments, duration of the cocaine problem, race, marital status, religious preference, educational level, job status, occupational category, preferred route of cocaine ingestion, dual addiction, lifetime 12-step attendance, 12-step attendance between baseline and follow-up, or use of 12-step sponsors.

Miscellaneous Predictors of Alcohol/Drug Relapse

Use of the broader measure of relapse strengthened the positive association between relapse and 2 non-hypothesized variables. Both measured inpatient drug treatment: number of residential rehabilitation admissions ($r = .627$, $r^2 = .393$, $p < .0001$) and number of detoxification admissions ($r = .508$, $r^2 = .258$, $p < .002$). Overall treatment number (inpatient plus outpatient, $r = .505$, $r^2 = .255$, $p < .002$), and ASI drug severity ($r = .425$, $r^2 = .18$, $p < .01$) correlated somewhat lower with the broader relapse measure.

Linear Combinations of Miscellaneous Variables (Multiple Linear Regression)

Two models of stepwise linear regression were applied to the broader measure of relapse (days of alcohol+cocaine+other drug use). The first (model 1) used only descriptive/historical and addiction severity index variables. The second (model 2) used variables from model 1 and also OR/RT variables. For both models, the proportion of relapse variance accounted for was somewhat higher than when only days of cocaine use was used as the dependent measure. **See Table 13, below.**

Table 13: Miscellaneous Baseline Predictors of All Drug Use During Treatment

Regression Variables	R	R^2	adj.R^2	crit F	df	p	Multicollin Tolerance
Model 1[a]							
#Rehab & Coke Prob Dur	.768	.59	.564	5.34	2, 32	.0001	.01
#Rehab & Coke Prob Dur & Drug	.832	.692	.662	4.51	3, 31	.0001	.01
Model 2[b]							
#Rehab & Coke Prob Dur & SI	.819	.671	.639	4.51	3, 31	.0001	.01

[a] descriptive and ASI variables only; [b] descriptive, ASI, and OR/RT variables

Model 1 (descriptive/historical and ASI variables only)

The stepwise procedure identified #Rehab (number of rehab admissions), CokeProbDur (cocaine problem duration), and Drug (ASI drug severity) as meeting criteria for inclusion into a multiple regression equation. The linear combination of #Rehab & CokeProbDur accounted for 59% of sample variance on days of alcohol/drug use. The addition of Drug increased the relationship such that the linear combination of #Rehab & CokeProbDur & Drug accounted for 69.2% of the sample variance on days of all drug and alcohol use.

Model 2 (descriptive/historical, ASI, and baseline OR/RT variables)

The linear combination of #Rehab & CokeProbDur & Social Incompetence accounted for 67.1% of sample variance on days of alcohol/drug use. Again, this was also a somewhat higher proportion of the variance accounted for than when only days of cocaine use was the dependent variable.

C) Inpatient Rehabilitation History

As noted above, the number of residential rehabilitation admissions correlated .627, (r^2 = .393, p< .0001) with "all drug and alcohol" relapse between baseline and follow-up. This was the single greatest correlate of relapse of any variable recorded in the study. Subjects were divided into two groups based on this variable: those with no history of inpatient rehabilitation (the "no-rehab" group, n=21), and those with at least one admission (the "rehab" group, n=14). For those with at least one admission, the number ranged from one to five, with most (n=9) having had one admission.

OR & RT

There were significant OR/RT differences between these groups both at baseline and at follow-up. **See Table 14, below**. At baseline, the rehab group scored significantly higher on Alienation, Insecure Attachment, and Uncertainty of Perception. They were also higher on Reality Distortion, with a difference that approached significance (p< .06) (Mann-Whitney U). At follow-up, the rehab group remained significantly higher on Uncertainty of Perception (p< .02) (Mann-Whitney U).

At follow-up, the rehab group significantly declined on Alienation and Hallucinations/Delusions. The decline on Uncertainty of Perception approached significance (p< .06). The no-rehab group did not significantly decline on any OR/RT subscale, though a decline on Reality Distortion approached significance (p< .07) (matched t). A surprising result, however, was that the no-rehab group significantly <u>increased</u> (worsened!) on Hallucinations/Delusions between baseline and follow-up.

Table 14: OR & RI by Inpatient Rehabilitation History

	No H/O Inpt Rehab (n=21)		H/O Inpt Rehab (n=14)				
Variable	mean	sd	mean	sd	U*	z**	p
Baseline							
Alienation	-.007	.64	.53[a]	.66	78	-2.323	.03
Insecure Attachment	-.209	.78	.566	.73	70	-2.593	.01
Egocentricity	-.102	.75	.091	.89	127	-.673	n.s.
Social Incompetence	-.144	.87	.212	1.0	109	-1.28	n.s.
Reality Distortion	-.28[c]	.55	-.089	.41	90	-1.919	.06
Uncertainty of Perception	.031	.77	.771[b]	.92	75	-2.424	.02
Hallucinations/Delusions	-.278[a]	.36	.052[a]	.69	102	-1.515	n.s.
Follow-Up							
Alienation	-.099	.69	.166[a]	.78	122	-.842	n.s.
Insecure Attachment	-.082	.80	.197	.71	112	-1.179	n.s.
Egocentricity	-.285	.53	-.175	.59	120	-.909	n.s.
Social Incompetence	-.204	.67	.195	.94	112	-1.179	n.s.
Reality Distortion	-.394[c]	.47	-.188	.46	99	-1.616	n.s.
Uncertainty of Perception	-.067	.73	.433[b]	.62	75	-2.424	.02
Hallucinations/Delusions	-.086[a]	.68	-.354[a]	.18	118	-.976	n.s.

* Mann-Whitney U; ** z corrected for ties; Superscripts down colums (within groups): [a] $p < .05$, [b] $p < .06$, [c] $p < .07$ (approaches significance), matched t-tests.

The significant increase for the no-rehab group on Hallucinations/Delusions between baseline and follow-up seems to have resulted from especially sharp increases for three subjects, along with a number of small increases. Indeed, two-thirds (14 of 21) of subjects in the no-rehab group increased on this factor between baseline and follow-up, in contrast to the "rehab group" which significantly declined on this factor.

The three subjects with large increases on Hallucinations/Delusions were significantly different from the rest of the no-rehab group on a number of baseline and follow-up variables. At baseline, they were significantly higher on Reality Distortion ($p < .02$) and Hallucinations/Delusions ($p < .009$). Their higher scores on Alienation ($p < .09$) and Egocentricity ($p < .07$) approached significance (Mann-Whitney U). At follow-up, they were significantly higher on Egocentricty ($p < .03$), Reality Distortion ($p < .009$), and

Hallucinations/Delusions ($p < .02$) compared with the rest of the no-rehab group (Mann-Whitney U). Between baseline and follow-up, they used significantly more "other drugs" (all non-alcohol, non-cocaine drugs such as marijuana, opiates, tranquilizers) compared with the rest of the group ($p < .0004$). They also had significantly greater employment problems ($p < .02$) at follow-up. Unlike the no-rehab group as a whole, there were no significant improvements on ASI severities for alcohol, drug, or family/social for these three subjects (matched t-tests).

The baseline OR/RT elevations of the three subjects relative to the rest of the no-rehab group do not seem to be related to greater drug/alcohol use prior to entering treatment. Actually, they had significantly lower cocaine use in the 30 days preceding entry to treatment ($p < .03$), and nearly-significant lower alcohol use ($p < .054$) compared with the rest of the no-rehab group. The difference on other drugs was non-significant (Mann-Whitney U).

ASI problem severities

There were no significant differences between "rehab" and "no-rehab" groups either at baseline or follow-up on ASI severities. **See Table 15, below.** The baseline alcohol severity for the no-rehab group was higher and approached significance ($p < .06$, Mann-Whitney U). Between baseline and follow-up, the no-rehab group significantly declined on alcohol, drug, and family/social. The rehab group significantly declined on employment and drug, while the decline on family/social approached significance ($p < .06$, matched t-tests).

Table 15: Addiction Severity Index Scores by Inpatient Rehabilitation History

	No H/O Inpt Rehab (n=21)		H/O Inpt Rehab (n=14)				
Variable	**mean**	**sd**	**mean**	**sd**	**U***	**z****	**p**
Baseline							
Medical	.32	.32	.158	.27	101.5	-1.648	n.s.
Employment	.434	.23	.556[e]	.25	101.5	-1.532	n.s.
Alcohol	.324[b]	.25	.155	.13	91	-1.887	.06
Drug	.234[a]	.07	.218[c]	.09	118	-.977	n.s.
Legal	.046	.12	.011	.04	131	-.771	n.s.
Family/Social	.224[d]	.23	.195[f]	.24	132	-.505	n.s.
Psychological	.316	.2	.302	.20	140	-.237	n.s.
Follow-Up							
Medical	.201	.27	.23	.31	146.5	-.018	n.s.
Employment	.44	.25	.43[e]	.24	128.5	-.624	n.s.
Alcohol	.139[b]	.13	.136	.15	140.5	-.222	n.s.
Drug	.098[a]	.06	.119[c]	.08	136	-.371	n.s.
Legal	.009	.02	.011	.04	138	-.549	n.s.
Family/Social	.058[d]	.25	.04[f]	.18	147	0	n.s.
Psychological	.271	.18	.288	.2	142.5	-.152	n.s.

* Mann-Whitney U; ** corrected for ties; Superscripts down columns (within groups): [a] p< .0001, [b] p .0007, [c] p< .002, [d] p< .02, [e] p< .03, [f] p< .06 (approaches significance), matched t-tests

Drug and Alcohol Use Prior to and During the Current Treatment

The no-rehab group had significantly higher alcohol use in the 30 days prior to entering treatment (p< .04, Mann-Whitney U). Differences on cocaine, other, and polydrug were non-significant. Thus the elevations of the rehab group on OR/RT factors do not seem attributable to greater drug and alcohol use just prior to starting treatment.

The rehab and no-rehab groups did not significantly differ on cocaine, alcohol, other, or polydrug relapse between baseline and follow-up. **See Table 16, below.**

Table 16: Drug and Alcohol Use by Inpatient Rehabilitation History

	No H/O Inpt Rehab (n=21)		H/O Inpt Rehab (n=14)				
Variable	**mean**	**sd**	**mean**	**sd**	**U***	**z****	**p**
Number of days/past 30 (Pre-Tx):							
Cocaine	7	5.7	7.3	7.9	138	-.305	n.s.
Alcohol	10.7	10.3	3.2	5.8	83.5	-2.138	.04
Other	2.3	4.6	3.5	8.6	129	-.673	n.s.
Polydrug	6.1	6.8	4.5	6.4	123	-.826	n.s.
Number of days/past 90 (follow-up):							
Cocaine	.76	1.1	2.3	4.8	124	-.841	n.s.
Alcohol	1.3	2.7	1.1	2	139.5	-.297	n.s.
Other	.14	.48	4.3	16	144.5	-.173	n.s.
Polydrug	.48	1	2.1	6.1	122	-1.027	n.s.

* Mann-Whitney U, ** corrected for ties

Miscellaneous variables: "rehab" versus "no-rehab" groups

The rehab group had a significantly longer cocaine problem duration ($p < .02$) and a significantly greater number of medical detoxifications than the no-rehab group ($p < .02$, Mann-Whitney U).

With respect to 12-step attendance, the rehab group had attended significantly more meetings on all measures: in the 30 days prior to entering treatment ($p < .02$), lifetime ($p < .02$), and during the current treatment ($p < .02$, Mann-Whitney U).

There was a significant relationship with educational level such that a history of inpatient rehabilitation was associated with lower educational level ($p < .03$; Mann-Whitney U). There was also a significant relationship with occupational category such that a history of inpatient rehabilitation was associated with occupations of lower skill and status. ($p < .02$, Mann-Whitney U). **See Table 17.**

Table 17: Miscellaneous Comparisons by Inpatient Rehabilitation History

Variable	No H/O Inpt Rehab (n=21) mean	sd	H/O Inpt Rehab (n=14) mean	sd	U*	z**	p
#Detoxifications	.2	.4	1	1	83	-2.568	.02
#Residential Rehab's	0	0	1.7	1.2	0	-5.651	.0001
Coke Prob. Dur.(months)	21	16	50	32	72.5	-2.517	.02
#12-Step Meetings:							
Past 30 days (Pre-Tx)	2.2	4	12.6	13.8	82	-2.389	.02
Lifetime	38	108	64	56	77	-2.378	.02
Past 90 days (Follow-Up)	9.8	15	36	50	72	-2.557	.02
Educational Level	n	%	n	%			
Graduate Degree	1	5	0	0			
BA/BS	4	19	1	7			
Some College	12	57	6	43	U = 86	z = -2.229	.03
HS grad or GED	4	19	4	29			
Less than HS grad	0	0	3	21			
Occupational Category (Hollingshead & Redlich)							
	n	%	n	%			
1 (Highest)	2	10	0	0			
2	5	24	1	7			
3	2	10	2	14	U = 78.5	z = -2.389	.02
4	8	38	3	21			
6	1	5	0	0			
7 (Lowest)	3	14	8	57			

* Mann-Whitney U; ** corrected for ties

Summary of Section 2

Cocaine Use

When only cocaine use was used as the relapse measure, support for a predictive relationship between OR/RT variables and cocaine relapse was present but very weak. Social Incompetence correlated .388 ($p<.02$) with days of cocaine relapse. This result provides weak support for Hypothesis 2 ("Days of alcohol and drug use during the course of treatment will be significantly related to baseline object relations and reality testing scores").

Certain non-hypothesized baseline variables were found to be more highly correlated to cocaine relapse than OR/RT variables. These included: number of residential rehabilitation admissions ($r = .599$, $p< .0001$), overall treatment number (inpatient plus outpatient, $r = .514$, $p< .001$), number of detoxification admissions ($r = .471$, $p< .001$), and ASI drug severity score ($r = .44$, $p< .008$).

Alcohol was implicated with cocaine relapse such that 75% of those who used alcohol at least once between baseline and follow-up also used cocaine at least once, and 71% of those who used cocaine at least once also used alcohol. Days of alcohol use correlated .493 ($p< .002$) with days of cocaine use during treatment.

Crack and freebase smokers did not significantly differ from intranasal users on cocaine relapse rate between baseline and follow-up.

All Drug and Alcohol Use, Low versus High Relapse

Use of this broader relapse measure enabled the division of subjects into low and high relapse groups which then demonstrated significant OR differences at baseline and at follow-up. Object relations subscales were the only variables (other than their relapse rates) which significantly distinguished the low and high relapse groups. These differences were not evident using cocaine relapse alone as the dependent measure, and are not attributable to differences in pre-treatment rates of alcohol and drug use. These results support Hypothesis 2 ("Days of alcohol and drug use during the course of treatment will be significantly related to baseline object relations and reality testing scores").

At baseline, the high relapse group scored significantly higher on Alienation. The difference on Social Incompetence approached significance. At follow-up, the high relapse group was significantly higher on both Alienation and Social Incompetence, and was now non-significantly higher on all other OR/RT subscales. [Social Incompetence was the strongest baseline OR/RT correlate of days of "all drug and alcohol" use ($r = .376$, $p<.03$)].

There were no significant differences between the low and high relapse groups on ASI problem severities either at baseline or follow-up. Between baseline and follow-up, the low relapse group significantly declined on medical, alcohol, drug, and family/social, while the high relapse group significantly declined only on drug. At follow-up, the low relapse group was non-significantly lower on all ASI severities.

The two linear regression models were applied to the broader relapse (dependent) variable. The linear combination of #Rehab & CokeProbDur accounted for 59% of the sample variance on days of alcohol/drug use, while #Rehab & CokeProbDur & Drug accounted for 69.2% of the sample variance on days of alcohol/drug use. The linear combination of #Rehab & CokeProbDur & Social Incompetence accounted for 67.1% of sample variance. These proportions of variance were somewhat higher than when only 'days of cocaine use' was used as the dependent measure.

Inpatient Rehabilitation History

The division of subjects by residential rehabilitation experience takes a longer-term view of the relation between OR/RT and relapse. The number of residential rehab admissions was also the single greatest correlate to relapse during the current treatment. Those with a prior history of residential rehabilitation had significantly more overall treatments, more detoxifications, more 12-step meetings lifetime, longer problem duration, and the need for extended inpatient intervention, all of which imply a more chronic relapse history and a greater severity of addiction. These subjects were significantly more impaired on OR & RT at baseline compared with those with no history of residential rehabilitation treatment. These OR/RT differences do not seem attributable to greater alcohol or drug use prior to starting the current treatment. In fact, the rehab group had significantly fewer days of alcohol use prior to starting the current

treatment. The rehab group was significantly higher on Alienation, Insecure Attachment, and Uncertainty of Perception, and was nearly significantly higher on Reality Distortion ($p < .06$). The rehab group continued to have greater RT impairment at follow-up, remaining significantly higher on Uncertainty of Perception. However, the rehab group at follow-up was no longer so broadly impaired relative to the no-rehab group. This implies a greater propensity for OR regression by the rehab group in the face of roughly equivalent drug and alcohol use.

A history of residential rehabilitation treatment was significantly associated with lower educational levels and occupational categories of lower skill and status.

Conclusion

These results support Hypothesis 2 ("Days of alcohol and drug use during the course of treatment will be significantly related to baseline object relations and reality testing scores"). OR/RT variables significantly distinguished low versus high relapse groups both at baseline (Alienation) and at follow-up (Alienation and Social Incompetence). Also, there was a weak but significant baseline OR correlate to relapse during the current treatment. Social Incompetence correlated .388 ($p < .02$) with days of cocaine use, and correlated .376 ($p < .03$) with days of all drug/alcohol use.

These results also go beyond Hypothesis 2. OR/RT variables significantly distinguished "rehab" versus "no-rehab" groups both at baseline and at follow-up. Subjects with more chronic relapse histories (ie the "rehab" group) seem to have a greater propensity for OR/RT regression in the face of roughly equivalent drug and alcohol use, and also have relatively more impaired RT even after treatment.

Section 3: Twelve-Step Group Attendance During the Research Period

Twenty five subjects (71%) attended at least one 12-step group meeting between admission to treatment and the follow-up interview, while 10 (29%) attended no meetings. Twelve-step meetings were attended in addition to the psychotherapeutic sessions of their current outpatient treatment.

Baseline OR and RT Correlates of 12-Step Group Attendance during Treatment

Linear correlations between baseline OR and RT scores and 12-step group attendance during the current treatment were weak and non-significant. Insecure Attachment ($r = .232$, n.s.) and Uncertainty of Perception ($r = .188$, n.s.) were the strongest linear correlates. None of the OR/RT variables met the criteria for inclusion into a multiple linear regression analysis

There was a significant Spearman correlation between baseline %ileHD (lower, middle, upper thirds on Hallucinations/Delusions) and attendance category (low, middle, high): rho = .357, $p < .04$.

12-Step Group Affiliation as a Function of Baseline OR & RT Percentile Group

The lower (n=11), middle (n=12), and upper (n=12) thirds on each subscale were compared on number of 12-Step meetings attended during treatment, using Kruskal-Wallis non-parametric ANOVAs. No statistically significant differences were found on 12-step group affiliation based on these groupings for any OR or RT subscale.

Further, for each baseline OR and RT subscale, subjects were assigned to either Pathologically Elevated or Non-Pathologically Elevated groups, using Bell's (1987) criteria. There were no statistically significant differences in affiliation between the pathologically elevated and the non-elevated on any baseline OR or RT subscale (Mann-Whitney U).

Low, Middle and High 12-step Attendance at Follow-Up

Subjects were divided into low, middle, and high levels of 12-step attendance during the current treatment (ie between baseline and follow-up). The low group (n=12) attended from 0 to 4 meetings (mean = .42, sd=1). The middle group (n=13) attended from 5 to 15 meetings (mean = 10, sd=4). The high group (n=10) attended from 24 to 190 meetings (mean = 57, sd=50).

OR and RT Scores as a Function of Attendance Level

Low, middle, and high attendance groups did not significantly differ on OR or RT subscales either at baseline or at follow-up (one-way ANOVAs). **See Table 18, below.** The pattern of scores was such that the high attendance group had the highest mean scores on six out of seven OR/RT subscales both at baseline and at follow-up. However, significance was not attained due to the large spread of scores within groups.

At follow-up, the low attendance group significantly declined on Reality Distortion. Neither the middle nor the high attendance group significantly declined on any OR/RT subscale between baseline and follow-up. For the middle attendance group, declines on Alienation and Egocentricity approached significance ($p < .08$), (matched t-tests).

As noted earlier, there was a significant Spearman correlation between baseline %ileHD (lower, middle, upper thirds on Hallucinations/Delusions) and attendance category (low, middle, high): rho = .357, $p < .04$. When all OR/RT subscales were grouped by percentile (lower, middle, upper thirds), the high attendance group ranked significantly higher on on %ile Hallucinations/Delusions than the low attendance group at baseline (Mann-Whitney U, $p < .03$). At follow-up, the high attendance group ranked significantly higher than the low attendance group on %ile Uncertainty of Perception (Mann-Whitney U, $p < .04$).

Table 18: OR and RT Scores by Level of 12-Step Attendance During the Current Treatment

	Low 0-4 Meetings (n=12)			Middle 5-15 Meetings (n=13)			High 24-190 Meetings (n=10)		
OR/RT Subscale	**mean**	**sd**	**%ile***	**mean**	**sd**	**%ile***	**mean**	**sd**	**%ile***
Baseline:									
Alienation	.081	.68	76	.2[2]	.72	79	.371	.70	85
Insecure Attachment	.173	.82	68	-.178	.90	53	.376	.77	75
Egocentricity	-.076	.94	65	.04[3]	.72	70	-.048	.8	66
Social Incompetence	-.015	.88	66	-.154	.98	61	.211	.96	70
Reality Distortion	-.26[1]	.37	63	-.326	.31	57	.024	.76	78
Uncert. of Perception	.271	.79	77	.082	.97	71	.712	.88	89
Halluc. & Delusions	-.236	.6	63	-.184	.53	69	.011	.49	80
Follow-Up:									
Alienation	-.192	.77	66	-.04[2]	.67	71	.306	.73	82
Insecure Attachment	-.018	.82	60	-.157	.77	61	.329	.7	74
Egocentricity	-.412	.63	44	-.188[3]	.48	58	-.105	.54	63
Social Incompetence	.01	.84	66	-.09	.86	64	-.051	.77	65
Reality Distortion	-.497[1]	.28	40	-.251	.42	63	-.17	.67	69
Uncert. of Perception	-.054[a]	.78	66	.055	.79	70	.459[a]	.46	82
Halluc. & Delusions	-.287	.31	54	-.207	.57	66	-.061	.74	77

Superscripts down columns (within groups): **1** = p< .02, **2, 3** = p< .08 (approaches significance), matched t-tests. Superscripts across rows (between groups): **a** = p< .08 (one-way ANOVA).
No between-group comparison was significant either at baseline or at follow-up with one-way ANOVAs.

* Assigns the mean score to its approximate percentile rank on Bell's (1987) non-pathological norms.

Drug and Alcohol Use Prior to and During the Current Treatment

In the 30 days prior to entering the current treatment, the low attendance group had used significantly more alcohol than both the middle and high attendance groups. **See Table 19, below.** Days of cocaine, other, and polydrug use were not significantly different among attendance groups for the 30 days prior to the current treatment.

Table 19: Drug and Alcohol Use by Level of 12-Step Attendance During the Current Treatment

	Low 0-4 Meetings (n=12)		Middle 5-15 Meetings (n=13)		High 24-190 Meetings (n=10)	
Variable	**mean**	**sd**	**mean**	**sd**	**mean**	**sd**
Number of days/past 30 (Pre-Tx):						
Cocaine	9	6	6	6	6	8
Alcohol	15[ab]	12	5[a]	6	2[b]	4
Other	3	6	5	9	.5	.85
Polydrug	9	9	5	5	3	4
Number of days/past 90 (follow-up):						
Cocaine	.67	.89	2	5	1	2
Alcohol	2	3	1[a]	2	.5[a]	1
Other	.17	.58	5	17	0	0
Polydrug	.42	.79	2	6	.5	1

Superscripts across rows (between groups): **a**, **b** = $p < .05$, (Mann-Whitney U)

At follow-up, the middle attendance group had significantly more days of alcohol use than the high attendance group (Mann-Whitney U). The low, middle, and high attendance groups did not significantly differ in relapse rate for cocaine, other drugs, or polydrug use.

On cocaine, 58% (n=7) of the low attendance group, 46% (n=6) of the middle attendance group, and 50% (n=5) of the high attendance group were abstinent between baseline and follow-up (Chi-square, n.s.).

Addiction Severity Index Scores: Low, Middle, & High 12-Step Attendance

At baseline, there was only one significant between-group difference on any of the ASI severity scores. **See Table 20, below.** On medical, the high attendance group was significantly higher than that of the middle attendance group. At follow-up, the difference on medical was no longer significant due to a non-significant decline by the high attendance group and a non-significant increase by the middle attendance group. Severity scores for employment,

alcohol, drug, legal, family/social, or psychological were not significantly different among groups at baseline.

At follow-up, the low attendance group had significantly declined on alcohol and drug severities. The middle attendance group significantly declined on drug and family/social. The high attendance group also significantly declined on alcohol and drug severities (matched t-tests). Also, at follow-up there were no significant between-group differences on any of the seven ASI composite severity scores: medical, employment, alcohol, drug, legal, family/social, or psychological.

Table 20: ASI Composite Scores by Level of 12-Step Attendance During the Current Treatment

	Low 0-4 Meetings (n=12)		Middle 5-15 Meetings (n=13)		High 24-190 Meetings (n=10)	
ASI Composite	**mean**	**sd**	**mean**	**sd**	**mean**	**sd**
Baseline:						
Medical	.279	.36	.129[a]	.22	.391[a]	.3
Employment	.482	.29	.462	.2	.511	.27
Alcohol	.342[5]	.29	.191	.16	.24[6]	.19
Drug	.252[1]	.06	.215[2]	.1	.214[3]	.07
Legal	.029	.09	.051	.13	.011	.03
Family/Social	.198	.26	.208[4]	.18	.236	.27
Psychological	.311	.23	.300	.21	.322	.16
Follow-Up:						
Medical	.247	.31	.183	.27	.21	.27
Employment	.451	.28	.409	.23	.454	.24
Alcohol	.139[5]	.15	.151	.15	.118[6]	.12
Drug	.084[1]	.07	.115[2]	.09	.123[3]	.04
Legal	.004	.01	.015	.04	.008	.03
Family/Social	.056	.24	.011[4]	.21	.098	.23
Psychological	.286	.19	.28	.20	.266	.16

Superscript across row (between groups): **a** = significant at the 95% level (one-way ANOVAs); Superscripts down columns (within groups): **1** = $p < .0001$, **2** = $p < .0004$, **3** = $p < .002$, **4** = $p < .005$, **5** = $p < .01$; **6** = $p < .04$ (matched t-tests).

Differences on Miscellaneous Variables

Educational level was significantly related to attendance between baseline and follow-up such that lower education was associated with higher attendance. Higher attendance was also significantly associated with occupational categories of lower skill and status. (Kruskal-Wallis) **See Table 21, below.**

Table 21: Education and Occupational Categories by Level of 12-Step Attendance During the Current Treatment

# Meetings:	Low 0-4 (n=12)		Middle 5-15 (n=13)		High 24-190 (n=10)				
Variable	n	%	n	%	n	%	H*	df	p
Educational Level									
Graduate Degree	1	8	0	0	0	0			
BA/BS	1	8	4	31	0	0			
Some College	8	67	6	46	4	40	H = 6.432	2	.05
HS grad or GED	2	17	2	15	4	40			
Less than HS grad	0	0	1	8	2	20			
Occupational Category (Hollingshead & Redlich)									
1 (Highest)	2	17	0	0	0	0			
2	2	17	4	31	0	0			
3	0	0	4	31	0	0	H = 9.236@	2	.01
4	5	42	1	8	5	50			
6	1	8	0	0	0	0			
7 (Lowest)	2	17	4	31	5	50			

*Kruskal-Wallis H corrected for ties; @ top 3 and bottom 4 categories collapsed

Further, the high attendance group had significantly more residential rehabilitation admissions than the low attendance group. **See Table 22, below.**

On lifetime 12-step attendance, the groups maintained their ordinal ranking. Those in the high attendance group (during the current treatment) had attended significantly more meetings lifetime than both low and middle groups. Of the low attendance group, 50% (n=6) had never attended a 12-step meeting prior to starting the current treatment, while 23% (n=3) of the

middle group had never attended one. Of the high attendance group, all had attended at least one meeting prior to starting the current treatment, and only one had attended fewer than 50 lifetime. However the linear correlation between 12-step meetings attended lifetime and meetings attended during the current treatment was weak and non-sigificant ($r = .276$, n.s.).

There were no significant differences found among groups on age, individual income, detoxifications, cocaine problem duration, race (white vs non-white), marital status, religious preference (preference vs no preference), job status (working, temporary disability, unemployed), preferred route of cocaine ingestion (intranasal vs smoking), or dual addiction.

Table 22: Miscellaneous Baseline Comparisons by Level of 12-Step Attendance During the Current Treatment

	Low 0-4 Meetings (n=12)		Middle 5-15 Meetings (n=13)		High 24-190 Meetings (n=10)	
Variable	**mean**	**sd**	**mean**	**sd**	**mean**	**sd**
Treatment# (inpt+outpt)	2[a]	1	3	3	4[a]	2
#Detoxifications	.3	.45	.7	1	.5	.7
#Residential Rehab's	.17[a]	.39	1	2	1[a]	1
Coke Prob. Dur.(mo)	24	24	34	26	41	33
#12-Step Meetings:						
Past 30 days (Pre-Tx)	.5[c]	1	6[a]	10	14[ca]	13
Lifetime	16[c]	37	22[d]	32	121[cd]	141
Past 90 days (Follow-up)	.42[cd]	1	10[ce]	4	57[de]	50

Superscripts across rows (between groups): **a, b** = $p < .05$, **c, d, e** = $p < .01$ (Mann-Whitney U)

Miscellaneous Correlates of 12-Step Affiliation During the Current Treatment

A number of non-hypothesized variables were incidentally found to be significantly correlated to number of 12-step meetings attended in the 90 days preceding follow-up. These variables included: cocaine problem duration ($r = .452$, $r^2 = .204$, $p < .006$), number of residential rehabilitation admissions ($r = .408$, $r^2 = .166$, $p < .01$), and overall (inpatient plus

outpatient) treatment number ($r = .338$, $r^2 = .114$, $p < .04$). These variables did not meet criteria for inclusion into a multiple regression analysis, either by themselves or in conjunction with OR/RT variables.

Affiliation with 12-Step Sponsors During the Current Treatment: Covariation with 12-Step Meeting Attendance, Relapse, and OR/RT

Of the 25 subjects who attended at least one 12-step meeting during the current treatment, 10 (40%) reported involvement with a sponsor during this time. Fifty percent (n=5) of those who used a sponsor between baseline and follow-up had used a sponsor prior to entering the current treatment. Those who had a sponsor had a slightly higher level of attendance during treatment than those without a sponsor, but the difference did not attain significance. For those who used a sponsor (n=10), number of meetings attended between baseline and follow-up ranged from 6 to 75, with a mean of 28.6 (sd=24). For those who attended without a sponsor (n=15), the number of meetings ranged from 1 to 190, with a mean of 27.8 (sd=48) (Mann-Whitney U = 53, z= -1.223, n.s.). Sixty percent (n=6) of those who used a sponsor fell into the high level of attendance at follow-up, and 40% of those with a sponsor fell into the middle level of attendance at follow-up. **See Table 23, below.**

There were no significant differences among sponsored, unsponsored, and no attendance subjects on cocaine, alcohol, other drug, or polydrug relapse during the current treatment (Kruskal-Wallis H).

Those who used a sponsor during the current treatment (n=10) were compared on OR and RT subscales with those who attended meetings but didn't use a sponsor (n=15). At baseline, those who used a sponsor were significantly higher on Social Incompetence than those who didn't (Mann-Whitney U, $p < .05$). At follow-up, there were no significant differences between these two groups on OR/RT subscales. Both groups non-significantly declined on Social Incompetence at follow-up.

Finally, those who used a sponsor had a greater cocaine problem duration compared with non-sponsored attendees, with a difference that approached significance (Mann-Whitney U =

40, z = -1.95, p< .051).

Table 23: Use of 12-Step Sponsors by Attendance During the Current Treatment

# Meetings:	Low 0-4 (n=12)		Middle 5-15 (n=13)		High 24-190 (n=10)				
Variable	**n**	**%**	**n**	**%**	**n**	**%**	**H***	**df**	**p**
Used a 12-Step Sponsor									
Past 90 Days									
No	2	17	9	69	4	40			
Yes	0	0	4	31	6	60	H = 3.323[a]	2	n.s.
No Attendance	10	83	0	0	0	0			
Lifetime									
No	5	42	7	54	4	40			
Yes	1	8	3	23	6	60	H = 3.333[b]	2	n.s.
No Lifetime Attendance	6	50	3	23	0	0			

*Kruskal-Wallis H corrected for ties; [a] doesn't include the 10 subjects with no attendance between baseline and follow-up. [b] Doesn't include the 9 subjects with no lifetime attendance;

Summary of Section 3

Hypothesis 3 ("12-Step group attendance during the course of treatment will be significantly related to baseline object relations and reality testing") was supported by the data, though weakly.

There was a significant correlation (Spearman rho= .357, z= 2.083, p< .05) between baseline percentile group on Hallucinations/Delusions and ranked affiliation group (low, middle, high 12-step attendance). When all OR/RT subscales were grouped by percentile (lower, middle, upper thirds), the high attendance group ranked significantly higher on %ile Hallucinations/Delusions than the low attendance group at baseline (Mann-Whitney U, p< .03). At follow-up, the high attendance group ranked significantly higher on %ile Uncertainty of Perception than the low attendance group (Mann-Whitney U, p< .04).

Hypothesis 4 ["Having a sponsor within 12-step groups (during the current treatment) will be related to object relations and reality testing"] was supported by the data. At baseline, those who used a sponsor were significantly higher on Social Incompetence than those who didn't. At follow-up, there were no significant differences between these two groups on OR/RT subscales. Both groups non-significantly declined on Social Incompetence at follow-up. Those who used a sponsor had longer cocaine problem durations compared with non-sponsored attendees, with a difference that approached significance ($p < .051$).

Hypothesis 5 ("Level of 12-step attendance during the current treatment will be related to having a sponsor during the current treatment") was not supported by the data. Sponsored subjects did not significantly differ on attendance (or relapse) from non-sponsored subjects who attended meetings during the current treatment.

Higher 12-step attendance during the current treatment was significantly associated with lower eductional level and also occupational categories of lower skill and status. The high attendance group had significantly more residential rehabilitation admissions than the low attendance group.

Certain non-hypothesized variables significantly correlated with attendance between baselne and follow-up. These included cocaine problem duration ($r = .452$, $p < .006$), number of residential rehabilitation admissions ($r = .408$, $p < .01$), and overall (inpatient plus outpatient) treatment number ($r = .388$, $p < .04$).

Those with low, middle, and high attendance during the current treatment kept their ordinal ranking on lifetime attendance. Those in with a high level of attendance between baseline and follow-up had significantly higher lifetime attendance than those with low or middle attendance during the current treatment.

In terms of relapse, the low, middle, and high attendance groups did not significantly differ in relapse rate for cocaine, other drugs, or polydrug use. The middle attendance group had significantly more days of alcohol use than the high attendance group (Mann-Whitney U), but was not significantly different from the low attendance group.

On ASI severity scores, the high attendance group was significantly higher on medical than the middle attendance group at baseline. At follow-up, there were no significant between-group differences on any ASI problem severity score. At follow-up, both the low and high attendance groups had significantly declined on alcohol and drug severities. The middle attendance group significantly declined on drug and family/social.

Conclusion

No compelling relationship was found between baseline OR/RT variables and 12-step attendance during the current treatment, though there was a tendency for the high attendance group to have somewhat more impaired reality testing than the low attendance group both at baseline and at follow-up. Hypothesis 3 ("12-Step group attendance during the course of treatment will be significantly related to baseline object relations and reality testing") may be considered weakly supported by the data.

At baseline, those who used a sponsor during the current treatment were significantly higher on Social Incompetence than those who didn't. These results support Hypothesis 4 ["Having a sponsor within 12-step groups (during the current treatment) will be related to object relations and reality testing"].

Sponsored and non-sponsored 12-step attendees did not significantly differ on attendance during the current treatment. Therefore, Hypothesis 5 ("Level of 12-step attendance during the current treatment will be related to having a sponsor during the current treatment") was not supported by the data.

Section 4: Lifetime 12-Step Group Attendance

Twenty six subjects (74%) had attended at least one 12-step group meeting lifetime prior to the current treatment. Twenty one subjects (60%) had attended 10 or more meetings lifetime, twelve subjects (34%) had attended 50 or more, and six (17%) had attended 100 or more meetings, to a maximum in one case of 500 meetings lifetime.

Baseline OR and RT Associations with Lifetime 12-Step Group Attendance

No baseline OR or RT subscale significantly correlated with lifetime 12-step group attendance (number of meetings attended lifetime). The greatest Pearson correlates were Alienation ($r = .301$, n.s.), and Insecure Attachment ($r = .226$, n.s.).

There were significant Spearman correlations between 2 baseline RT subscales and number of meetings attended lifetime. Uncertainty of Perception and Hallucinations/Delusions. The correlation with Alienation approached significance. **See Table 24.**

Table 24: Spearman Ranked Correlations: Baseline OR & RT Scores and Number of 12-Step Meetings Attended Lifetime

OR/RT Subscale	rho*	z*	p	OR/RT Subscale	rho*	z*	p
Alienation	.301	1.752	.08	Reality Distortion	.07	.409	n.s.
Insecure Attachment	.214	1.245	n.s.	Uncert. Percept.	.445	2.593	.01
Egocentricity	-.011	-.066	n.s.	Halluc&Delusions	.406	2.367	.02
Social Incompetence	.265	1.547	n.s.				

*corrected for ties

The lower (n=11), middle (n=12), and upper (n=12) thirds on each baseline OR and RT subscale were compared on the number of 12-step groups attended lifetime. **See Table 25, below.** On Uncertainty of Perception, the lower third scored significantly below both the middle ($p < .005$) and upper thirds ($p < .007$) on lifetime attendance (Mann-Whitney U). On Hallucinations/Delusions, the lower third scored significantly below the upper third (Mann-Whitney U, $p < .04$). Non-parametric ANOVA was significant only for Uncertainty of Perception

($p < .01$), while for Hallucinations/Delusions it approached significance ($p < .1$).

Table 25: Lifetime 12-Step Attendance as a Function of Baseline OR and RT Percentile Group

OR/RT Percentile:	Lower Third (n=11)		Middle Third (n=12)		Upper Third (n=12)	
OR/RT Subscale	mean	sd	mean	sd	mean	sd
Alienation	16	26	39	46	88	141
Insecure Attachment	21	28	37	55	85	139
Egocentricity	31	35	85	143	28	41
Social Incompetence	17	24	47	64	79	138
Reality Distortion	73	146	26	42	49	57
Uncert. of Perception*	7[ab]	15	71[a]	139	63[b]	59
Halluc. & Delusions**	17[c]	31	68	140	58[c]	59

Superscripts across rows (between groups): a = $p < .005$, b = $p < .007$, c = $p < .04$ (Mann-Whitney U).
* Kruskal-Wallis H = 10.283, 2 df, $p < .01$; ** Kruskal-Wallis H = 4.927, 2 df, $p < .1$ (approaches sig.)

Low, Middle, and High Lifetime 12-Step Attendance

Subjects were categorized into 3 groups based on their lifetime level of 12-step group attendance. The low lifetime attendance group (n=11) attended from 0 to 4 meetings (mean=.45, sd=1). The middle group (n=13) attended from 5 to 54 meetings (mean=18, sd=16). The high group (n=11) attended from 60 to 500 meetings (mean=133, sd=127).

OR and RT Scores

Differences at Baseline

Compared with the low lifetime attendance group, the high lifetime attendance group was significantly higher on Alienation, Uncertainty of Perception, and Hallucinations/Delusions (one-way ANOVAs). Their higher scores on Social Incompetence approached significance ($p < .07$). **See Table 26, below.** For the most part, scores for the middle lifetime attendance group were intermediate between low and high attendance groups and significantly different

from neither. On Uncertainty of Perception, the high attendance group's higher scores approached significance ($p < .07$) with respect to the middle attendance group.

Table 26: Baseline OR and RT Scores as a Function of Lifetime 12-step Attendance

	Low 0-4 Meetings (n=11)			Middle 5-54 Meetings (n=13)			High 60-500 Meetings (n=11)		
OR/RT Subscale	**mean**	**sd**	**%ile***	**mean**	**sd**	**%ile***	**mean**	**sd**	**%ile***
Baseline:									
Alienation	-.125[a]	.53	68	.263[2]	.66	81	.476[a]	.79	87
Insecure Attachment	-.127	.77	55	.01	.78	61	.435	.96	77
Egocentricity	-.049	.69	66	-.133[1]	.7	62	.127	1.04	75
Social Incompetence	-.366[b]	.71	55	-.014	.89	66	.378[b]	1.07	73
Reality Distortion	-.341	.22	56	-.27	.35	62	.012[4]	.77	77
Uncert. of Perception	-.222[a]	.8	57	.291[b]	.76	78	.919[ab3]	.83	93
Halluc. & Delusions	-.399[a]	.18	30	-.142	.53	73	.101[a]	.68	83
Follow-Up:									
Alienation	-.06	.68	70	-.147[2]	.61	67	.255	.89	81
Insecure Attachment	-.001	.79	60	-.092	.66	57	.205	.9	69
Egocentricity	-.046	.52	67	-.465[1]	.52	43	-.172	.56	59
Social Incompetence	-.321	.8	57	.017	.63	66	.159	.97	83
Reality Distortion	-.395	.30	52	-.324	.45	58	-.215[4]	.64	58
Uncert. of Perception	-.076[c]	.84	65	.001[b]	.56	68	.498[3bc]	.7	83
Halluc. & Delusions	-.292	.35	54	-.187	.56	68	-.1	.71	76

Superscripts across rows (between groups): **a** = significant at 95% (one-factor ANOVA), **b** = $p < .07$, **c** = $p < .09$; Superscripts down columns (within groups): **1** = $p < .008$, **2** = $p < .01$, **3** = $p < .03$, **4** = $p < .06$ (matched t-tests). *Assigns the mean score to its approximate percentile rank on Bell's (1987) non-pathological norms.

Changes from Baseline to Follow-Up

At follow-up, the high attendance group significantly declined on Uncertainty of Perception, while the decline on Reality Distortion approached significance ($p < .06$). There were non-significant declines on Alienation, Insecure Attachment, Egocentricity, Social Incompetence, and Hallucinations/Delusions.

The middle attendance group significantly declined on Alienation and Egocentricity. There were non-significant declines on Insecure Attachment, Reality Distortion, Uncertainty of Perception, and Hallucinations & Delusions, and a non-significant rise on Social Incompetence.

There were no significant declines for the low attendance group. This group increased non-significantly on all subscales except Reality Distortion, which non-significantly declined.

Matched t-tests were used for within-group comparisons.

Differences at Follow-Up

At follow-up, there were no significant between-group differences on any OR/RT subscale, but the high attendance group still had the highest Uncertainty of Perception score which approached significance with respect to both the low attendance ($p < .09$) and middle attendance ($p < .07$) groups. Indeed, with one exception the high lifetime attendance group had the highest mean scores on all OR and RT subscales both at baseline and follow-up. The single exception was Egocentricity at follow-up, where the low lifetime attendance group was somewhat higher.

Drug and Alcohol Use Prior to and During the Current Treatment

In the 30 days prior to entering the current treatment, the low lifetime attendance group had significantly higher days of alcohol use than both the middle ($p < .05$) and high ($p < .05$) attendance groups (Mann-Whitney U). The groups did not significantly differ on days of cocaine, other, or polydrug use. **See Table 27, below.**

At follow-up (ie relapse during treatment), the low lifetime attendance group had significantly higher days of alcohol use than the high attendance group (Mann-Whitney U, $p < .05$). The groups did not significantly differ on days of cocaine, other, or polydrug use.

Table 27: Drug and Alcohol Use as a Function of Lifetime 12-Step Attendance

	Low 0-4 Meetings (n=11)		Middle 5-54 Meetings (n=13)		High 60-500 Meetings (n=11)	
Variable	**mean**	**sd**	**mean**	**sd**	**mean**	**sd**
Number of days/past 30 (Pre-Tx):						
Cocaine	7	6	6	6	8	8
Alcohol	16[ab]	11	6[a]	7	2[b]	2
Other	3	6	3	5	3	9
Polydrug	8	8	5	6	3	5
Number of days/past 90 (follow-up):						
Cocaine	1	1	.77	.73	2	5
Alcohol	3[a]	4	.62	.87	.73[a]	2
Other	.18	.6	.08	.28	6	18
Polydrug	1	1	.4	.51	2	7

Superscripts across rows (between groups): **a, b** = $p < .05$, (Mann-Whitney U)

Addiction Severity Index Scores as a Function of Lifetime Attendance

At baseline the low lifetime attendance group was significantly higher on ASI alcohol severity than the high lifetime attendance group(one-way ANOVA, $p < .05$). **See Table 28, below**. The middle group mean was intermediate between the two. There were no significant differences among low, middle, and high lifetime attendance groups on ASI scores of medical, employment, drug, legal, family/social, or psychological severity at baseline. At follow-up, there were no significant between-group differences on any ASI scale.

From baseline to follow-up, the low group significantly declined on alcohol and drug severities (matched t-tests). The middle and high attendance groups both significantly declined on drug and family/social severities.

Table 28: ASI Composite Scores by Level of Lifetime 12-Step Attendance

	Baseline		Follow-Up		Paired		2-tail
ASI Composite	mean	sd	mean	sd	t	df	p
Low: 0-4 meetings (n=11):							
Medical	.151	.25	.234	.33	-1.002	10	n.s.
Employment	.43	.25	.437	.26	-.178	10	n.s.
Alcohol	.378[1]	.3	.13	.14	3.577	10	.005
Drug	.225	.09	.081	.07	5.053	10	.0005
Legal	.068	.16	.005	.02	1.472	10	n.s.
Family/Social	.172	.21	.124	.25	.736	10	n.s.
Psychological	.319	.2	.31	.20	.129	10	n.s.
Middle: 5-54 meetings (n=13):							
Medical	.278	.38	.179	.28	.7	12	n.s.
Employment	.525	.23	.438	.25	1.726	12	n.s.
Alcohol	.213	.17	.137	.10	1.695	12	n.s.
Drug	.215	.06	.11	.04	4.625	12	.0006
Legal	.02	.04	.015	.04	1.122	12	n.s.
Family/Social	.179	.23	-.017	.18	2.886	12	.01
Psychological	.253	.21	.253	.17	-.013	12	n.s.
High: 60-500 meetings (n=11):							
Medical	.333	.31	.231	.25	.961	10	n.s.
Employment	.485	.27	.433	.24	.635	10	n.s.
Alcohol	.187[1]	.15	.145	.17	.754	10	n.s.
Drug	.245	.09	.129	.1	4.913	10	.0006
Legal	.009	.03	.008	.03	1	10	n.s.
Family/Social	.292	.26	.059	.24	2.167	10	.05
Psychological	.369	.18	.275	.19	1.854	10	n.s.

Superscripts down columns (between groups): 1 = significant at the 95% level (one-way ANOVA).

12-Step Attendance During Treatment as a Function of Lifetime Attendance

The high, middle, and low lifetime attendance groups maintained their ordinal standings on 12-step meetings during the current treatment. The high group attended significantly more 12-step meetings between baseline and follow-up than both the middle ($p < .01$) and low ($p < .01$) groups (Mann-Whitney U). The middle and low groups were not significantly different from each other. **See Table 29.**

Table 29: Miscellaneous Baseline Variables as a Function of Lifetime 12-Step Attendance

	Low 0-4 Meetings (n=11)		Middle 5-54 Meetings (n=13)		High 60-500 Meetings (n=11)	
Variable	**mean**	**sd**	**mean**	**sd**	**mean**	**sd**
Tx# (inpt+outpt)	1[cd]	1	3[c]	2	5[d]	2
#Detoxifications	.0[a]	.3	.5	.78	1[a]	1
#Residential Rehab's	0[ab]	.3	1[a]	1	1[b]	2
Coke Prob. Dur.(mo.)	15[ab]	13	42[a]	27	39[b]	31
#12-Step Meetings:						
Past 30 days (Pre-Tx)	3[a]	8	5	8	12[a]	13
Lifetime	.45[cd]	1	18[ce]	16	133[de]	127
Past 90 days (Follow-up)	8[c]	18	9[d]	10	46[cd]	53

Superscripts across rows (between groups): **a, b** = $p < .05$, **c, d, e** = $p < .01$ (Mann-Whitney U)

Differences on Miscellaneous Baseline Variables

The high attendance group had significantly more detoxifications ($p < .05$) than the low attendance group (Mann-Whitney U). The low lifetime attendance group had significantly fewer residential rehabilitations than both the middle ($p < .05$) and high ($p < .05$) lifetime attendance groups (Mann-Whitney U). Also, the low attendance group had a significantly shorter cocaine problem duration than both the middle ($p < .05$) and high ($p < .05$) lifetime attendance groups (Mann-Whitney U). **See Table 29, above.**

There was a significant relationship ($p < .02$) between occupational category and lifetime attendance group such that higher lifetime attendance was associated with occupations of lower skill and status. **See Table 30, below.**

Table 30: Education and Occupational Category by Lifetime 12-Step Attendance

*Meetings Lifetime:	Low 0-4 (n=11)		Middle 5-54 (n=13)		High 60-500 (n=11)				
Variable	**n**	**%**	**n**	**%**	**n**	**%**	**H***	**df**	**p**
Educational Level									
Graduate Degree	1	9	0	0	0	0			
BA/BS	1	9	4	31	0	0			
Some College	5	45	6	46	7	64	H = 1.621	2	n.s.
HS grad or GED	4	36	1	8	3	27			
Less than HS grad	0	0	2	15	1	9			
Occupational Category (Hollingshead & Redlich)									
1 (Highest)	2	18	0	0	0	0			
2	3	27	3	23	0	0			
3	2	18	2	15	0	0	H = 9.065	2	.02
4	2	18	4	31	5	45			
6	1	9	0	0	0	0			
7 (Lowest)	1	9	4	31	6	55			

*Kruskal-Wallis H corrected for ties

Lifetime Affiliation with Sponsors within 12-Step Groups

Of the 26 subjects with at least one 12-step meeting lifetime (prior to the current treatment), 10 (38%) reported having had a sponsor at least at some point during their affiliation. Having had a sponsor was significantly related to lifetime attendance group (Kruskal-Wallis H = 9.261, 2 df, $p < .01$). Eight of the 11 subjects (73%) in the high lifetime attendance group had had a sponsor. Conversely, 8 of the 10 subjects who had had a sponsor were also in the high lifetime attendance group. Two of the 10 sponsored attendees were in the middle lifetime attendance group. **See Table 31, below.**

Table 31: Lifetime Use of 12-Step Sponsors by Lifetime Attendance Level

*Meetings Lifetime:	Low 0-4 (n=11)		Middle 5-54 (n=13)		High 60-500 (n=11)				
Variable	n	%	n	%	n	%	H*	df	p
Use of 12-Step Sponsor									
Lifetime									
No	2	18	11	85	3	27			
Yes	0	0	2	15	8	73	H = 9.261@	2	.01
No Lifetime Attendance	9	82	0	0	0	0			

*Kruskal-Wallis H corrected for ties; @ Doesn't include the 9 subjects with no lifetime attendance.

For those with a history of a sponsor (n=10), number of lifetime meetings ranged from 12 to 500, with a mean of 128 (sd=138). Five of these 10 subjects had attended 100 or more meetings. For those who attended meetings but did not have a sponsor (n=16), number of lifetime meetings ranged from 1 to 120 with a mean of 26 (sd=32) [Mann-Whitney U, p< 0006].

Those with a history of sponsor involvement also had greater 12-step attendance during the current treatment, with levels that neared significance (Mann-Whitney U = 43.5, z = 1.93, p< .054). For those with a history of sponsor involvement, meetings attended during the current treatment ranged from 0 to 75, with a mean of 31 (sd=24). For attendees with no history of sponsor involvement, meetings attended during the current treatment ranged from 0 to 190, with a mean of 23 (sd=47).

Those with a history of sponsor involvement did not significantly differ from non-sponsored attendees on days of cocaine, alcohol, other, or polydrug use during the current treatment.

Lifetime History of Sponsor Involvement: OR & RT Scores

Subjects with a history of sponsor involvement (n=10) were compared with attendees with no history of sponsor involvement (n=16) on OR and RT subscales. No significant differences on any OR or RT variable were found either at baseline or at follow-up (Mann-Whitney U).

Further comparisons were made of sponsored versus non-sponsored subjects within the high lifetime attendance group, as well as sponsored versus non-sponsored subjects within the middle attendance group. No significant differences were found on OR/RT subscales either at baseline or at follow-up after controlling for attendance group (Mann-Whitney U).

Summary of Section 4

Hypothesis 6 ("Lifetime 12-Step group attendance will be significantly related to levels of object relations and reality testing") was supported by the data. There were significant Spearman correlations between number of meetings attended lifetime and two baseline reality testing subscales: Uncertainty of Preception (rho = .445, $p < .01$) and Hallucinations/Delusions (rho = .406, $p < .02$). Compared with the low lifetime attendance group, the high lifetime attendance group at baseline was significantly higher on Alienation, Uncertainty of Perception, and Hallucinations/Delusions. Their higher scores on Social Incompetence approached significance ($p < .07$). On Uncertainty of Perception, the high attendance group's higher scores approached significance ($p < .07$) with respect to the middle attendance group. These OR/RT differences are not attributable to differences in pre-treatment levels of alcohol or drug use. At follow-up, there were no significant between-group differences on any OR/RT subscale, but the high attendance group still had the highest Uncertainty of Perception score which approached significance with respect to both the low attendance ($p < .09$) and middle attendance ($p < .07$) groups. With one exception the high lifetime attendance group had the highest mean scores on all OR and RT subscales both at baseline and follow-up. The single exception was Egocentricity at follow-up, where the low lifetime attendance group was somewhat higher.

The absence of significant between-group OR/RT differences at follow-up suggests that the

high attendance group had a relatively greater tendency to regress in the face of equivalent pre-treatment levels of alcohol and drug use.

Hypothesis 7 ("Lifetime history of having a sponsor within 12-step groups will be related to object relations and reality testing") was not supported by the data. For those with any history of lifetime attendance, those who used a sponsor were not significantly different than those without a sponsor on any OR/RT subscale either at baseline or at follow-up, nor were there any OR/RT differences after controlling for attendance level.

Hypothesis 8 ("Lifetime level of 12-step attendance will be related to history of sponsor involvement") was supported by the data. Those with a history of sponsor involvement attended significantly more meetings lifetime than attendees without a history of sponsor involvement. Also, lifetime history of sponsor involvement was significantly related to lifetime attendance category (low, middle, high). Seventy three percent (n=8) of the high lifetime attendance group had used a sponsor at some point, and conversely, 80% (n=8) of those who'd had a sponsor were in the high lifetime attendance group.

Those with a history of sponsor involvement also had greater 12-step attendance during the current treatment, with levels that neared significance ($p < .054$).

Those with a history of sponsor involvement did not significantly differ from non-sponsored attendees on days of cocaine, alcohol, other, or polydrug use during the current treatment.

Relapse, Addiction Severity Index Scores, and Miscellaneous Variables

At follow-up (ie relapse during treatment), the low lifetime attendance group had significantly higher days of alcohol use than the high attendance group (Mann-Whitney U, $p < .05$). The groups did not differ significantly on days of cocaine, other, or polydrug use.

At baseline, the low lifetime attendance group was significantly greater on ASI alcohol severity than the high attendance group. At follow-up, there were no statistically significant between-group differences on any ASI severity score.

There was a significant relationship between occupational category and lifetime attendance group such that higher lifetime attendance was associated with occupational categories of lower skill and status.

The low lifetime attendance group had significantly fewer detoxifications than the high attendance group. The low lifetime attendance group had significantly fewer residential rehabilitations than both the middle and high lifetime attendance groups. Also, the low attendance group had a significantly shorter cocaine problem duration than both the middle and high lifetime attendance groups.

The lifetime attendance groups maintained their ordinal standings on 12-step attendance during the current treatment. The high lifetime attendance group attended significantly more 12-step meetings during the current treatment than both the low and middle lifetime attendance groups.

Conclusion

Baseline OR/RT scores significantly distinguished low and high lifetime attendance groups, with high attendance being associated with greater OR and RT impairment. These differences are not attributable to greater alcohol or drug use prior to starting the current treatment. These results support Hypothesis 6 ("Lifetime 12-Step group attendance will be significantly related to levels of object relations and reality testing"). At follow-up, there were no significant between-group differences on any OR/RT subscale, suggesting that the high attendance group had a relatively greater tendency to regress in the face of equivalent pre-treatment levels of alcohol and drug use.

Hypothesis 7 ("Lifetime history of having a sponsor within 12-step groups will be related to object relations and reality testing") was not supported by the data. For those with any history of lifetime attendance, those who used a sponsor were not significantly different than those without a sponsor on any OR/RT subscale either at baseline or at follow-up, nor were there any differences after controlling for attendance level.

Lifetime affiliation with a sponsor was significantly associated with greater levels of lifetime attendance. Sponsored subjects had significantly higher lifetime attendance than non-sponsored attendees. These results support Hypothesis 8 ("Lifetime level of 12-step attendance will be related to history of sponsor involvement").

Brief Summary of Results Chapter

Comparison of the current sample with pathological and non-pathological criterion groups revealed specific impairments on OR & RT both at baseline and follow-up (tables 7 & 8). Some of these impairments significantly improved over the course of treatment, supporting Hypothesis 1.

Also within the sample, there was a wide range of ego functioning and impairment both at baseline and at follow-up, as manifest by the large variation among subjects in the number of OR & RT subscales on which they scored in the pathologically elevated (PE) range.

Baseline OR/RT variables significantly distinguished low and high relapse groups. Baseline Social Incompetence scores significantly correlated with days of cocaine relapse, and also with days of all-drug relapse. These data support Hypothesis 2. Baseline OR/RT variables also significantly distinguished groups defined by residential rehabilitation history. Further, OR/RT variables significantly distinguished these groups at follow-up (high vs low relapse and also rehab vs no-rehab, see Tables 11 & 14).

OR/RT variables were not terribly useful in predicting, or distinguishing between, levels of 12-step attendance during the current treatment. There was a significant but weak positive association between attendance and baseline impairments in reality testing. Hypothesis 3 was weakly supported (see section 3 of Results).

Those who used a 12-step sponsor during the current treatment were significantly higher on Social Incompetence at baseline than attendees who didn't use one, supporting Hypothesis 4.

Since sponsored and non-sponsored attendees (during the current treatment) did not differ significantly on attendance during the current treatment, Hypothesis 5 was not supported. Nor did sponsored and non-sponsored attendees significantly differ on relapse rates.

Baseline OR/RT variables significantly distinguished low and high lifetime 12-step attendance groups. Two baseline reality testing subscales (UP and HD) significantly correlated with number of meetings attended lifetime. These data support Hypothesis 6. (Tables 24 & 26).

However there were no significant differences on OR/RT variables between those who had a lifetime history of 12-step sponsor involvement and lifetime attendees with no such history. Hypothesis 7 was therefore not supported.

Those who had a lifetime history of 12-step sponsor involvement had significantly greater lifetime attendance than lifetime attendees with no such history, supporting Hypothesis 8. Those who had a lifetime history of 12-step sponsor involvement also had nearly-significant greater attendance during the current treatment.

Certain sub-groups demonstrated greater regressive vulnerability on OR/RT variables in the face of equivalent pre-treatment drug and alcohol use. This was seen in comparisons of high versus low lifetime 12-step attendance, and in rehab versus no-rehab groups (tables 14 & 26). At baseline, the high attendance and rehab groups were each significantly and broadly more impaired than their respective comparison groups. Yet at follow-up they were no longer so easily distinguishable from their comparison groups, although somewhat greater reality testing impairment remained. These groups with greater regressive vulnerability had longer, more chronically relapsing addictions, though not necessarily more actual drug or alcohol use during periods of relapse.

Chapter 5

Discussion

The purposes of the current study have been 1) to evaluate object relations and reality testing impairments in a sample of cocaine addicts at the time of entry to treatment, and to view changes in these measures over the course of early recovery; 2) to test whether tendencies to relapse during the course of treatment are reflected in baseline levels of object relations and reality testing; and 3) to determine whether tendencies to affiliate with 12-step groups such as AA and CA are reflected in measured levels of object relations and reality testing. These purposes were carried out with an eye toward determining whether measures of object relations and reality testing are useful in assessing treatment prognosis, and in identifying those likely to most benefit from membership in 12-step groups.

Overview of the Follow-Up Sample

These results support the view that active compulsive cocaine abusers have co-morbid disturbances in object relations and impairments in reality testing, and also support the hypothesis that significant improvements in some of these impairments occur over the course of an intensive, short-term treatment. The implication of these relatively rapid changes in object relations and reality testing is that some of these impairments are a product of the addictive syndrome. This supports the views of writers who have made similar observations about addiction causing or exacerbating ego dysfunction (Khantzian et al. 1990, Zinberg 1975, McLellan 1986, Bean 1975, Tatarsky 1986, Levin 1987).

Further, there were still deficits after 90 days of treatment, admitting the possibility that pre-existing ego deficits may have created a heightened vulnerability for the development of compulsive use patterns, in accord with Khantzian et al. (1990), Tatarsky (1986), and Wallace (1991). But such an inference from this data set must be highly tentative for two

methodological reasons. The short follow-up time may not have captured all of the improvement that might have been measured had a longer follow-up time been used, assuming continued curtailment of drug use. More importantly, however, the pre-addiction impairments cannot be known with certainty since the current study was not prospective, so that no matter what the length of the follow-up, the treatment intervention may have altered the "pre-addiction baseline" to which the sample "returns". Thus, while we can say that improvement occurred following curtailment of drug use and the treatment intervention, we cannot know with certainty whether follow-up scores reflect impairments that existed prior to the onset of addiction, and which therefore constituted vulnerabilities for the development of addiction. Also, the relative contributions of abstinence and treatment in effecting improvement cannot be ascertained in the absence of control groups (discussed below in further detail).

There was large variation in the number of OR & RT subscales on which subjects scored in the pathologically elevated range, indicating a wide range of ego functioning and impairment among subjects both at baseline and at follow-up. At baseline, more than a third (37%, n=13) were in the non-pathological range on all subscales. This replicates the finding of Tatarsky (1986) who found a similar distribution of pathological elevation in his compulsive-user group. At follow-up, almost half (46%, n=16) were non-pathologically elevated on all OR/RT subscales. These results accord with Kleber & Gawin's (1984b) observation that cocaine abusers seeking treatment are a highly diverse group. It also supports the view of those who assert that the development of compulsive patterns of use is not confined to particular gradations or constellations of pre-addiction psychopathology (Zinberg 1975 & 1984, Khantzian et al.1990, Tatarsky 1986). To put it another way, these results argue against the position of those such as Wurmser (1974, 1978) and Hartocollis & Hartocollis (1980) who postulate severe psychopathology as a necessary precursor of addiction.

Using the proportion of subjects scoring in the pathologically elevated range as a guide to relative strengths and weaknesses, the most prominent baseline OR deficit was reflected in the Alienation score (37% in the pathological range), which refers to an internal experience of

disconnection with others, a lack of intimacy, and little hope that a sense of closeness and belonging is attainable. Lesser proportions of subjects were in the pathological range on Insecure Attachment (29%), Social Incompetence (20%), and Egocentricity (17%). This, combined with the fact that significantly higher scores were found relative to a high functioning criterion group (Community Active Adults, part of the instrument's standardization sample) suggest strains of painful (neurotic) concern about being liked and accepted, manipulativeness and suspiciousness toward others, interpersonal shyness, difficulty making friends, negative self-evaluations and fear of social failure. The tendency toward isolation is covalent with a bitter, antagonistic attitude toward others. All four OR subscales were significantly higher than Community Active Adults.

The greatest reality testing impairment was manifest on Uncertainty of Perception, which had the greatest proportion of subjects in the pathological range (34%). This score was also significantly higher than Community Active Adults. The Uncertainty of Perception subscale taps a self-reflective sense of doubt about misperceptions of reality and projection of impulses, feelings about self, and feelings about others. Tatarsky (1986) found a similar proportion of his compulsive-user group in the pathological range, and also found Uncertainty of Perception to be a significant discriminator of recreational and compulsive cocaine users.

On Reality Distortion, 11% were in the pathological range and the current sample was significantly higher than Community Active Adults. Reality Distortion taps distortion of internal and external reality: a tendency to have distorted perceptions of self and other, confusion between waking and dream states, experiences of unreality and difficulty in understanding their own feelings and the feelings of others, and paranoid projection of impulses, wishes and fears. Pathologically elevated scorers may harbor grandiose or depressive beliefs.

The Hallucinations /Delusions score showed little tendency for severe breaks from reality. The current sample, with 9% in the PE range, was not significantly different from Community Active Adults at baseline. This baseline composite profile suggests a neurotic level of disturbance for this sample in which relationships are important but highly conflicted. Neurotic emotional needs and concerns, exacerbated by significant deficits in testing reality, have led in the

direction of disengagement and a subjective sense of isolation from others, with amalgams of disappointment, bitterness, fear, and negative self-evaluation.

With respect to Bell's criterion groups, the current sample at baseline was most similar to patients suffering from major affective disorder, and no subscale score was significantly different from this criterion group. This similarity replicates the empirical findings of Tatarsky (1986) with respect to his compulsive user group. However since affective experience was not directly measured in the current study, a firm conclusion cannot be made about about the frequency of co-morbid affective disorder within this sample. It can only be said that at the time of entry into treatment, the sample had a constellation of object relations and reality testing consistent with major affective disorder. Thus, these results are at least consistent with the views of other writers who, based on clinical observation, identify affective disturbance as a central feature of cocaine-dependence symptomatology (Khantzian 1987, Krystal & Raskin 1970, Wurmser 1974), and also those who say that object relational impairments make one vulnerable to affective disorders (Wallace 1987).

Further, while Borderline Personality Disorder may constitute a vulnerability to the development of addiction (Kernberg 1985), these results show that the converse does not necesarily hold. That is, a borderline organization should not be assumed merely because addiction is present, as some have suggested (Wurmser 1974, 1978, Hartocollis & Hartocollis 1980). This is related to the point made earlier about the large variation in ego functioning among subjects both at baseline and at follow-up. Even prior to treatment (baseline), the current sample was significantly lower than borderlines on three of four object relations subscales (Alienation, Insecure Attachment, and Egocentricitry), and on all reality testing subscales (Reality Distortion, Uncertainty of Perception, and Hallucinations/Delusions). Indeed, it seems to be the relative "sturdiness" or fragility of the level of integration (that is, the vulnerability to regression) that is most pronounced among clinically meaningful sub-groups of subjects which appear quite disturbed at baseline (see below for discussions of "rehab vs no-rehab" groups and "low vs high lifetime 12-step attendance" groups).

The results of the current study support the hypothesis that there would be significant improvements in object relations and reality testing after completion of the 90 day first phase of treatment. As noted above, these relatively rapid changes imply that at least some of the deficits measured at baseline were produced by the addictive syndrome. In the area of object relations, a statistically significant improvement occurred on Alienation. The trend toward improvement on Egocentricity approached significance ($p < .09$). These improvements point to an increased valuation of relationships, and greater trust that they can serve as a source of fulfillment and gratification. Also, there is less mistrust of others' motivations, less of a sense that others exist to be manipulated for self-serving goals, and a concomitantly increased recognition of others as existing independently of one's needs or wishes concerning them. In the area of reality testing, there was a significant improvement on Reality Distortion. The trend toward improvement on Uncertainty of Perception approached significance ($p < .1$). These improvements suggest a more accurate appraisal of reality, less confusion between internal and external events, and less paranoid projection of impulses with concomitant feelings of vulnerability alternating with grandiosity. There is also less uncertainty over the perception of internal and external reality, which is to say a greater ability to recognize breaches of reality testing as such when they do occur.

At follow-up, the current sample no longer so closely mirrored Bell's major affective disorder criterion group. Specifically, it was now significantly lower on Egocentricity and Reality Distortion. With respect to the highest functioning of the criterion groups (Community Active Adults, CAA's) the current sample at follow-up was still significantly higher on Alienation, Insecure Attachment, Reality Distortion , and Uncertainty of Perception, but it was no longer more egocentric or socially incompetent. The subjects' tendency for major breaks in reality testing (HD) was not significantly greater than CAA's either at baseline or follow-up.

At follow-up, Alienation remained the area of greatest impairment in the OR sphere, while Uncertainty of Perception remained the highest RT elevation. Both at baseline and at follow-up, the most frequent combination of pathologically elevated scores was Alienation with Uncertainty

of Perception. These may represent areas of particular and enduring vulnerability for the development of cocaine addiction. Indeed, Tatarsky (1986) found these subscales to be significant discriminators of recreational and compulsive cocaine user groups.

Finally, for the sample as a whole, Addiction Severity Index alcohol and drug severities significantly declined. These scales measure both objective data (eg days of use) and also subjective data (patients' own rating of severity). The family/social severity also declined significantly. This may be understood as the interaction between internal and external events: less family tension as one's drug problem is confronted and dealt with and internal changes (OR and RT) enhancing one's ability to relate.

Object Relations, Reality Testing, and Relapse

Baseline levels of OR significantly distinguished level of relapse during treatment, and these results therefore support the hypothesis that relapse would be significantly related to baseline levels of OR & RT. Compared with the low relapse group, the high relapse group (those who used any mood altering substance on 2 or more days) showed significantly greater disturbance on object relations both at baseline and at follow-up. At baseline, those who would later fall into the high relapse group scored significantly higher than the low relapse group on Alienation. On Social Incompetence, the higher scores for the high relapse group approached significance ($p < .07$). (Social Incompetence was actually the strongest baseline OR/RT correlate of both cocaine relapse [$r = .388$, $p < .02$] and all-drug/alcohol relapse [$r = .376$, $p < .03$]).

The low relapse group significantly declined on Reality Distortion between baseline and follow-up, and the decline on Uncertainty of Perception approached significance ($p < .08$). By contrast, there were no significant declines for the high relapse group. At follow-up, the high relapse group was now significantly higher on both Alienation and Social Incompetence.

It should be noted, however, that division of low and high relapse groups in the current study is quite conservative relative to the standards of current clinical practice. The cut-off for low relapse (zero or one day of use of any mood altering substance) versus high relapse (2 or more days of use) groups was chosen primarily because of the skewness of the distribution for

"days of use". For example, only three (out of 35) follow-up subjects had 4 or more days of cocaine use during the course of treatment. Thus the creation of comparison groups involved a significant degree of arbitrariness, and certain subjects defined as "high relapse" in the current study would probably not be considered as such from the viewpoint of treatment providers.

Nevertheless, OR scores significantly distinguished the groups both at baseline and at follow-up. As noted, those with low relapse had less impaired object relations at baseline. Further, these OR differences do not seem attributable to differences in the severity or duration of their drug problem, greater 12-step attendance, greater pre-treatment drug use, or any of the other control variables. The low relapsers at baseline tended to attach relatively greater value to relationships as a vehicle for satisfaction, to harbor less mistrust of others, and to be less likely to react with hostile withdrawal to interpersonal frustration compared with the high relapsers. There was also more willingness to engage others in a more-than-superficial way. That is, low relapsers may have been poised for greater therapeutic engagement from the outset. The actual success in engaging with others may have been facilitated by a relatively greater sense of social competence. That is, the wish to connect with others and one's confidence in the ability to do so may have acted in a mutually reinforcing way in the direction of greater therapeutic engagement for the low relapse group. To put it another way, the low relapsers were both relatively more interested in engagement with others, and relatively more able to actualize this interest, thereby facilitating the actual work of the drug treatment.

This is not the whole story, of course, and it cannot be said that the high relapse group is simply disinterested in relationships. Indeed, about one third (35%) of the high relapse group was in the pathologically elevated range on Insecure Attachment at baseline (versus 22% for the low relapse group, n.s.). This speaks to significant preoccupations about being liked and sensitivity to rejection, clinginess, and jealous desire for exclusivity in close relationships. Yet the high relapse group was not significantly different than the low relapse group on Insecure Attachment. But in the context of significantly higher Alienation, with concomitant distrust of others, and also higher Social Incompetence (with an attendant sense of shyness and social failure) the balance of these these countervailing (approach-avoidance) tendencies for the high

relapse group was perhaps tilted in favor of drug use rather than use of the therapeutic group as a vehicle to work through craving and other feelings associated with drug use.

It seems appropriate, in this regard, to apply Khantzian et al's (1990) hypothesis of "sectors of vulnerability" to treatment outcome. Just as specific psychological vulnerabilities may contribute to the likelihood that addictive patterns of drug abuse will emerge, it seems reasonable that specific strengths and vulnerabilities will contribute to the ability to maintain abstinence, even given equivalant levels of "global psychiatric severity" (McLellan 1986). Indeed, these results give empirical support to McLellan's (1986, p135) observation that among patients with equivalent psychiatric severity, those who are able to form and use a relationship do significantly better in drug treatment than those who can't. And it may be that these object relational variables, as McLellan also suggests (though he doesn't use OR concepts), exert their effects indirectly - by influencing one's ability to engage in treatment in order to do the work of treatment.

Given the relative weaknesses of the high relapse group, it might also be harder to carry out other demands which treatment makes, such as the lifestyle changes patients need to make in order to remain drug free. Drug treatment helps patients break ingrained behavioral patterns as they occur within social contexts (Washton 1989, Wallace 1989, Zinberg 1984). One way to help to do this is by getting patients to change the social contexts and other interpersonal situations into which they place themselves and which result in drug taking (Washton 1989, Wallace 1989). The patient is to avoid the "people, places and things" which serve as conditioned cues for drug taking behavior. To carry this out requires the user both to avoid drug-using acquaintences and to establish new relationships with non-drug-taking individuals (the therapeutic group being the first opportunity for this). Yet the data indicate that both of these are harder for the high relapse group.

Relationships with drug cohorts don't require anything approaching intimacy. The goal-directed, mostly superficial interactions with drug cohorts and can well-suit the needs of those who fear being alone but who also need to keep others at a distance. To reject these cohorts, as treatment requires, activates fears of loss, abandonment, and rejection (areas in which they are

vulnerable). At the same time they are faced with the prospect of making new social contacts, an activity at which they feel inept. The difficulty is compounded by suspiciousness toward others and doubt that efforts to make these friends is worth the anxiety and uncertainty to which they must subject themselves. The low relapse group, by contrast, must also struggle with fear and uncertainty over dramatic changes in their social matrix, but are more confident in their ability to make this shift (to make new friends). They also have a greater expectation that the effort will pay off.

One might also speculate that the relatively greater sense of social inadequacy in the high relapse group might further contribute to relapse by activating fears that they won't be able to "gracefully" refuse drugs when offered, and may thus appear awkward in the social interaction. A further speculative point is that since a sense of social failure extends to heterosexual interactions, there may be a relatively greater reliance on cocaine as an initiator of such interactions, and as an interpersonal confidence builder (ego enhancer) during the course of them. Washton (1989) has documented the complex interaction of cocaine with sexual life and has pointed out that learning "how to comfortably experience sexual feelings and intimacy without drugs can be a major accomplishment in preventing relapse to cocaine".

Rehab versus no-rehab

In addition to distinguishing low versus high relapse groups during the course of the current treatment, OR & RT measures also seem to reflect the chronicity of addiction over time. Dividing subjects by history of residential rehabilitation enabled comparison of those who have longer, more chronically relapsing addictions with those who have not yet required extended inpatient intervention.

The division by history of "rehab" or "no-rehab" found several differences in baseline profiles of object relations and reality testing. These differences were not evident when looking only at relapse during the current treatment. Those with a history of residential rehabilitation treatment (the "rehab group") were significantly more impaired on the OR subscales of Alienation and Insecure Attachment at baseline. With respect to baseline reality testing, the

rehab group was significantly higher on Uncertainty of Perception, and their higher Reality Distortion scores approached significance ($p < .06$). Further, these differences are not attributable to greater pre-treatment drug or alcohol use by the rehab group.

This profile suggests a considerably less stable and more conflicted internal world for the rehab group compared with the no-rehab group at the time they entered treatment. Indeed, the profile of (relative) elevations that the rehab group exhibits with respect to the no-rehab group closely emulates the pattern of elevations which borderline patients exhibit with respect to non-pathological groups.

Yet despite their relatively greater disturbances at baseline, the rehab group did not differ significantly from the no-rehab group on relapse during the course of treatment. Also, patterns of improvement were such that at follow-up the rehab group was significantly higher only on the reality testing subscale of UP, which measures doubt about perception of internal and external reality (they remained higher at follow-up despite a significant decline). It would seem that reduced drug intake in combination with the structured, ego-supportive setting of treatment permitted the the reactivation of higher-level defenses and better integrated self- and object-images (a more benign sense of self and others) - that is, facilitated a reintegration of ego functions to more optimal levels of which they are capable under proper internal and external conditions.

These data suggest that given equivalent amounts of drug use, the rehab group has a greater propensity to regress in ego function. Yet in a supportive setting they are also able to re-integrate so that many of these functions are no more impaired than subjects whose addictions are shorter in duration and less chronically relapsing. To put it another way, the ego functions of the rehab group seem relatively more fragile in the face of equivalent drug use. It may be that despite their measured improvements over the course of treatment, there nevertheless remain psychological vulnerabilities and tendencies to regress which become activated outside the structured and ego-supportive environment of treatment. Their baseline OR/RT scores may reflect these specific regressive vulnerabilities.

In the case of the rehab group, one "sector of vulnerability" (Khantzian et al., 1990) may be

the continued greater impairment of reality testing seen in the rehab group at follow-up (on the UP subscale). But even beyond this is inability to maintain the higher levels of integration of which they are capable under optimal conditions. This relative fragility of ego functioning (ie the greater tendency to regress) may be the "subclinical susceptibility to psychopathology aggravated by cocaine abuse" hypothesized by Kleber & Gawin (1984b). Further, fragility of ego functioning may be strongly related to the social environment of the addict (Zinberg 1975, 1984). Indeed, these results are consistent with Zinberg's position inasmuch as the rehab group had significantly lower educational and occupational category standings compared with the no-rehab group, implying that perhaps there is "less to lose" from significant psychosocial deterioration, and that there are fewer supports once deterioration consequent to drug use has begun. It may be that it is the fragility of functioning, as interacting with or produced by the level environmental support of ego functions, that contributes to the chronically relapsing quality of the addictions seen in the rehab group. However, the extent to which the rehab group's relatively greater vulnerability to regress was a pre-addiction vulnerability (which contributed to more chronically relapsing patterns and lower occupational achievement), versus the extent to which it was produced by the addiction (eg a cumulative effect of longer addiction) cannot be determined from these data. This issue is related to the theoretical question of whether regression itself represents a "constitutional" vulnerability due to developmental failure (eg Kohut 1977a, Wurmser 1978) or a vulnerability mediated by social/environmental support (Zinberg 1984). It harkens back to the unresolved question raised by Stricker & Healey (1990) regarding the degree of permanence versus malleability of object relations (ie whether measures of object relations reflect a "state" or "trait"). The apparent responsivity of OR measures to environmental supports adds another layer of ambiguity to the questions of psychoanalytic diagnosis and change, at least as they are measured by the instrument of the current study.

The rehab group's history of significantly more treatment (both inpatient and outpatient, with attendant chronic relapse), longer problem duration, and greater psychological deterioration at the time of entry to treatment points to a greater risk of post-treatment relapse for the rehab group, which is accompanied by a relatively more unpleasant intrapsychic experience once compulsive patterns reemerge. Indeed, the very act of completing treatment, with the loss of support this entails, may create a crisis in which they are more vulnerable to conditioned environmental cues for self-medication (Wallace1989). It is not unusual to hear anecdotal reports of major, prolonged relapse occuring within hours or even minutes of discharge from a voluntary inpatient drug treatment setting. The greater level of 12-step attendance for the rehab group (just prior to starting treatment, during the current treatment, and lifetime) can be seen at least partly as an attempt by this group to provide the social/environmental supports they feel to be lacking. However, the 12-step model has been only partially successful for them since their very presence in the current treatment indicates continued relapse and consequent psychological deterioration. This state of affairs may speak to the limitations of the 12-step model outlined by Bean (1975), such as the ignoring of individual differences or needs in favor of dogmatic formulae, the reduction of all problems and complex psychological states to the question of their relationship with alcohol or drugs, and the stigmatizing of those who relapse as unmotivated. Regarding this latter point, having a "slip" results in the removal some of the very support which 12-step groups are intended to provide, perhaps increasing the likelihood that full-blown, protracted relapse will occur, with consequent deterioration and vicious circles of self-medication. It may be that under ordinary circumstances 12-step groups provide adequate support to enable these chronically relapsing subjects to function well, and it is possible that some continue to do well only so long as they go to meetings. But, given their relapse histories, there are also be times when their needs must be addressed in a more intensive, individualized way than the 12-step model ordinarily provides, or in ways which go beyond the scope of, or even contradict, 12-step formulations. These are times when relapse crises can occur.

12-Step Attendance During the Current Treatment

No compelling relationship was found between baseline OR/RT variables and 12-step attendance during the current treatment, though there was a tendency for the high attendance group to have somewhat more impaired reality testing than the low attendance group both at baseline and at follow-up. Hypothesis 3 ("12-Step group attendance during the course of treatment will be significantly related to baseline object relations and reality testing") may be considered weakly supported by the data. This finding is consistent with the view of Spiegal & Mulder (1986) who emphasize the 12-step model's positive effects on reality testing. It may be speculated that those who self-selected for high levels of 12-step attendance during the course of treatment may have found the beneficial action on impaired reality testing to be in accord with their subjective psychological needs in early abstinence. That is, 12-step groups may have made it easier cope through its action on their relatively more impaired reality testing. Differences on reality testing were also found among lifetime attendance groups, discussed in the next section.

Low, middle, and high 12-step attendance groups did not differ significantly on cocaine, other, and polydrug relapse. On alcohol relapse, the high attendance group was significantly lower than the middle attendance group, but not significantly below the low attendance group. Unfortunately, the relative contributions of 12-step attendance and intensive outpatient treatment cannot be ascertained in the absence of appropriate control groups (eg 12-step only vs. intensive outpatient only vs. no-treatment). This is discussed in further detail below- see Limitations of the study and suggestions for future research.

Educational level and occupational category were both significantly related to follow-up attendance category such that higher attendance was associated with both lower education and jobs of lower skill and status. These two variables also had similar significant relationships to history of residential rehab treatment (history of rehab was associated with lower education and lower skill jobs), and may reflect less perceived environmental support for lifestyle changes that support abstinence, which 12-step attendance is intended to correct.

There was evidence that for some subjects, patterns of 12-step attendance which were

established prior to the current treatment were continued between baseline and follow-up. For example, there was a significant correlation between lifetime attendance category (low, middle, high) and follow-up attendance category (low, middle, high) (rho= .542, p< .002). The continuation of pre-established patterns seems especially true of the high attendance group which had significantly more lifetime meetings and meetings in the 30 days prior to the current treatment than both the low and middle attendance groups.

Use of Sponsors

At baseline, those who used a sponsor during the current treatment were significantly higher on Social Incompetence than attendees who did not use one. These results support Hypothesis 4 ["Having a sponsor within 12-step groups (during the current treatment) will be related to object relations and reality testing"]. The direction of this finding at first seems counterintuitive, since the sponsored group tended to be shyer and carried a greater sense of social failure, leading one to expect a lesser likelihood of reaching out to a sponsor. But it may be that the use of a sponsor was a strategy intended to ameliorate this deficit, since the sponsor can facilitate the introduction of a new member to others within the group and also instruct him on the 12-step group "culture", which guides interaction among members. That is, the sponsor instructs him on when to speak and when to listen, who to approach and who to avoid, and also helps him to learn the 12-step lexicon and its application to his own experience (ie what to say and how to say it). These sponsorship functions may be quite helpful to those who wish to participate in 12-step groups but who are especially lacking in interpersonal confidence.

Sponsored and non-sponsored 12-step attendees did not significantly differ on attendance during the current treatment. Therefore, Hypothesis 5 ("Level of 12-step attendance during the current treatment will be related to having a sponsor during the current treatment") was not supported by the data. The failure to find differences may may have resulted from methodological limitations of the study - especially the limited opportunity to attend 12-step meetings while engaged in concurrent, intensive outpatient treatment. Sponsored and non-sponsored 12-step attendees did not differ significantly on relapse during the course of treatment.

Conclusions about attendance and sponsorship during the course of treatment must be considered highly tentative due to methodological limitations of the study. The fact that all subjects were also engaged in an intensive outpatient treatment for addiction may have influenced which subjects were able to attend 12-step meetings, and also the number of meetings attended. Certain subjects who might have otherwise attended more meetings may have been unable to do so because of a lack of time. This may be especially true of those in higher occupational categories, and may be an alternative explanation for lower attendance among these subjects. Other subjects who would not have otherwise self-selected for 12-step groups might have attended out of a wish to comply with the suggestions of the outpatient treatment.

Lifetime 12-Step Group Affiliation

Here the data supported the hypothesis that object relations and reality testing would be significantly related to levels of 12-step attendance. Compared with the low lifetime attendance group, the high lifetime attendance group at baseline was significantly higher on Alienation, Uncertainty of Perception, and Hallucinations/Delusions. Their higher scores on Social Incompetence approached significance ($p < .07$). For the most part, scores from the middle lifetime attendance group were intermediate between the two and significantly different from neither (although on UP, the high attendance group's higher scores approached significance, $p < .07$). These relatively greater impairments do not seem attributable to greater drug/alcohol use prior to entry to the current treatment. In the 30 days prior to entry to the current treatment, the low, middle, and high lifetime attendance groups were not significantly different on cocaine, other, or polydrug use. On alcohol use, the middle and high attendance groups were both significantly lower than the low attendance group.

Yet despite greater baseline impairment on the subscales just noted, the high lifetime attendance group was not significantly higher on relapse between baseline and follow-up. Indeed, on alcohol use they were significantly lower than the low lifetime attendance group, while differences on cocaine, other, and polydrug were non-significant. The high lifetime attendance

group also went to more 12-step meetings during the current treatment, but the relative contribution of 12-step attendance in maintaining abstinence cannot be ascertained without appropriate control groups.

At follow-up, the three lifetime attendance groups were not significantly different on any OR or RT subscale (although the high attendance group's higher scores on Uncertainty of Perception approached significance with respect to both low [$p < .09$] and middle [$p < .07$] groups). In this regard, there seems to be a situation parallel to the findings with respect to history of residential rehabilitation. Namely, higher lifetime 12-step attendance tends to be associated with longer, more severe addiction and a chronic relapse history. (That these two groups overlap is evidenced by the significant relationship between lifetime attendance category and history of residential rehabilitation: Chi-square = 7.145, 2 df, $p < .03$, Cramer's V = .452). Compared with the low attendance group, the high attendance group had significantly more detoxifications and residential rehabilitations, and also had significantly longer cocaine problem duration.

The inferences to be made about these findings run parallel to those drawn when looking at rehab history. There was a large range of ego functioning both at baseline and at follow-up. Certain subgroups (in this case the high lifetime attendance group) manifest greater vulnerability to regress in the face of relapse, but also demonstrate the ability to do well in ego supportive contexts. To look at them only at baseline or only at follow-up skews the picture because level of impairment depends on the point in time they are examined. Looking at them at both times identifies the relative fragility of ego functions for certain subgroups - their tendency regress from the higher levels at which they are able to function under optimal (supportive) environmental conditions. As noted earlier with respect to the "rehab" group, whether these greater regressive tendencies are a cause or effect of longer, more chronically relapsing addictions can't be ascertained from this data set.

A history of sponsor involvement was significantly associated with greater lifetime attendance levels, which supports hypothesis 8. However, the connection between OR/RT variables and sponsor affiliation was not established, and so hypothesis 7 was not supported.

After controlling for attendance level, sponsored and non-sponsored subjects did not differ significantly on OR/RT subscales. Thus, sponsor affiliation may have been an artifact of 12-step self-selection. That is, those who self-selected for 12-step affiliation may have been more willing to comply with the suggestion that they obtain a sponsor.

Indications for 12-Step Referral?

Those who self-selected for high levels of 12-step attendance both during the current treatment and lifetime had relatively more impaired reality testing than their low attendance counterparts both at baseline and at follow-up. It may be that 12-step membership is particularly helpful in compensating for these weaknesses, and that this effect represents an attraction for those with greater reality testing impairment. The lower occupational categories of high attendance groups may imply less social/environmental support for an abstinent lifestyle, and may also contribute to the greater vulnerability for ego regression seen in high attendance groups (Zinberg 1984). For this sample, involvement in 12-step groups may be seen as a means to compensate for these difficulties. However, Emrick (1987) cites multiple studies in which SES factors were unrelated to affiliation. Also, since their participation in 12-step groups was not sufficient to prevent major relapse, this sample may not be representative of the population of 12-step members, and so broad conclusions about 12-step affiliates cannot be made. Yet it seems that when combined with a treatment which is more individually oriented, they can do as well in terms of abstinence as those whose addiction histories are not so chronically relapsing. Further research is required to test the extent to which this sample of high-attendance affiliates is atypical of the population of 12-step membership.

Conclusions & Implications for Treatment

There is a wide range of ego functioning associated with compulsive abuse patterns. That is, the development of compulsive patterns of drug use was not found to be confined to a specific constellation or level of ego functioning. Further, some impairments seem to have been produced by the addictive syndrome. OR & RT variables were useful in identifying specific psychological vulnerabilities and improvements, and also in significantly distinguishing clinically meaningful sub-groups of patients who have different behavioral traits and treatment needs. Certain sub-groups show a relatively greater vulnerability to regress in the face of compulsive abuse patterns. Those with a history of residential rehabilitation treatment and those with high levels of lifetime 12-step attendance represent two overlapping sub-groups which have greater regressive vulnerability and longer, more chronically relapsing addiction histories. These chronic relapsers respond well to the ego-supportive context of intensive treatment, but they have greater problems maintaining abstinence outside of treatment. A lower socioeconomic milieu may contribute to regressive vulnerability by way of less ego-support, as may greater impairment on reality testing even after treatment. Regression may in turn make it harder to benefit from the support that is available. Higher 12-step attendance may be a way to compensate and create support, but with limited success possibly due to a greater need to address of issues surrounding relapse crises in a more intensive, individualized way, and also the loss of 12-step group support when a slip occurs.

There seems to be greater clinical utility in conceptualizing patients in terms of specific psychological vulnerabilities, including the vulnerability to regress from optimal levels of functioning, rather than in terms of global psychopathology. The global measure of "psychiatric severity" did not differentiate clinically meaningful sub-groups, as did object relations and reality testing subscales.

Implications for Treatment

In terms of treatment, it seems imperative to address the neurotic tendencies and fears manifest in subjects' OR/RT profiles. These include ambivalence about treatment, especially fears and feelings of loss of a familiar social milieu, having to reject old cronies, having to overcome shyness and establish new, non-drug-taking social contacts, and the loss of the drug itself - loss of its magical properties to transform the shy and weak into the bold and invincible. Social skills (assertiveness) training and ongoing feedback about how others perceive them may go far in helping them to engage in treatment and to carry out the changes necessary to maintain an abstinent lifestyle, and to facilitate a less fearful transition to this lifestyle.

For those with chronic relapse history, those whose functioning remains tenuous, a more active role in recognizing the onset of crises leading to relapse, and an understanding of their vulnerability to regress is probably necessary. That is, a treatment focus on recognizing differences in the ways they relate to others under certain (stressful or non-supportive) conditions and connecting this with relapse tendencies (their wishes to self-medicate and heightened vulnerabilities to situational cues) would be beneficial. It may be that long term, though less intensive treatment with a broad focus on the range of problems in daily living is required to maintain abstinence for those with a chronic relapse history. A long-term recovery treatment group would minimize the perceived loss of support that accompanies termination of intensive treatment, and would also help ameliorate lingering impairments in reality testing. Having said this, it is also probably advisable to encourage patients to expand their range of interests and activities beyond those specifically related to the recovery process, with due attention to the relapse potential involved. Anecdotally, there seems to be some proportion of chronically relapsing patients whose entire adult social and recreational lives have been almost exclusively taken up by addiction treatment of one form or other. While granting that some require frequent therapeutic contact (whether in therapy or AA) in order to maintain stability, it would also seem that after a certain point the single focus on symptom management limits the potential for gratifications in one's personal life. Thus it may be that beyond a certain point,

more treatment may actually be harmful to the extent that it forecloses other satisfactions or severely restricts self-definition. Recovery must be an important part of their lives, but probably shouldn't be the entirety of their social lives. In accord with Bean (1975), there must be room to move beyond the role of "drug addict".

Also, based on the data of this study, it would seem that those with greater impairments in reality testing are most likely to find 12-step programs accomodating to their psychological needs, if self-selection is a valid way to gauge this. This conclusion, however, is highly tentative due to methodological weaknesses of the study.

Limitations of the Current Study and Suggestions for Future Research

As noted throughout this discussion, there are a number of methodological limitations to the current study. These include the small sample size, the conservative division of low and high relapse groups due to skewness of the relapse distribution, the lack of control groups, a sample of 12-step affiliates which may be unrepresentative of the 12-step population (they were not successful in remaining abstinent in 12-step groups), a sample of cocaine addicts which does not represent the cocaine dependent population (private insurance, mostly employed), no follow-up for treatment drop-outs, less than optimal timing of some interviews, and short follow-up time.

The current sample was overwhelmingly employed, and all had access to private health insurance. This implies a more stable lifestyle and an increased stake in treatment success than might be expected in a sample whose position in society was more marginal and where the potential rewards of drug abstinence are fewer (Massing, 1992). Indeed, the follow-up sample was better off in terms of the skill and status level of their occupational categories than those who had dropped out of treatment and were not followed up. The follow-up sample was not comprised of society's most disenfranchised, and the results obtained from this data set must be seen in this light. Further, since there were no control groups, it is impossible to know the extent to which treatment contributed to changes in drug-taking behavior and OR/RT scores, as opposed to factors unrelated to the actual treatment (fear of job loss, family pressure), and the

relative contribution of 12-step attendance. With respect to OR & RT, it is also impossible to tell how much change resulted from treatment as opposed to the "mere" fact of decreased drug ingestion.

Yet given these caveats, the ability of OR/RT variables to identify specific psychological vulnerabilities and to distinguish clinically meaningful sub-groups of patients who have special treatment needs probably makes it worthwhile to pursue further research using them. The methodological weaknesses of current study offer a guide to further research. Future studies might employ a similar basic design as the current study, but use several control groups which could enable researchers to address the relative contributions of drug-use curtailment, 12-step participation, and outpatient psychotherapy in effecting changes in OR/RT measures over the course of early recovery. These control groups might include: 12-step only, outpatient treatment only, no treatment (stopped on their own), and a combined treatment (12-steps and outpatient). Longer follow-up times would provide information about the full extent OR/RT change in recovery, as well as the stability of these changes. Of course, larger and more representative samples are also needed to adequately gauge the usefulness of these variables for assessing treatment prognosis. Also, studying long-term 12-step affiliates who have been successful in maintaining abstinence is necessary in order to validate any claims regarding who makes a good prospect for 12-step referral.

Finally, only prospective research can clarify the extent to which ego dysfunction heightens vulnerability to addiction, versus the extent to which ego dysfunction results from addiction.

Appendix C: 12-Step Program Participation Questionnaire

12-Step Program Participation Questionnaire

Pt. Name. _____ 1) Initial 2) Follow-Up _____

I.D. Number: ___|___|___|___|___|

Interviewer I.D.: ____|____

Patient's age: ___|___ yr

Meets Dx criteria for cocaine 1) Abuse; 2) Dependence _____

Dual or multiple addiction: 0) No; 1) Yes _____; Specify: _____

Date of Initial Interview ___|___|___ Date of F/U Interview: ___|___|___

Time between admission & initial interview: ___/___ days

Time between initial & follow-up: ___/___ days

Time between admission and follow-up: ___/____ days

Stated reason(s) for treatment dropout (if available): ___/___/___/

Special: 1) Pt terminated interview; 2) Pt refused; 3) Pt unable to respond _____

For Initial Interview, be sure patient understands questions pertain to his experience prior to this treatment episode. Also, be sure patient knows that "12-Step Group" refers to any of the several self-help groups based on the principles of AA.

For Follow-Up Interview, be sure patient understands questions pertain to his experiences since starting the current treatment episode. Questions that are circled are to be repeated at follow-up interview; Certain questions need to be re-phrased for follow-up.

N.B.: X=patient does not understand question; N/A=Not Applicable; R=patient refused to answer

Appendix C: 12-Step Program Participation Questionnaire

Preliminary Questions about cocaine use, family experience with 12-step groups, attitudes toward addiction, reasons & goals for treatment.

1) Have you been in a controlled environment in the past 30 days? ____
0)No; 2) Jail; 3) Alcohol or Drug Treatment; 4) Medical treatment; 5) Psychiatric treatment; 6) Other_____

2) How many days? ___|___

3) Do you have any immediate family members who are members of AA or other 12-step groups? 0)No 1)Yes _____
(mother, father, sexual partner/spouse, brothers/sisters, children, other significant family)

4) Does your spouse or person closest to you attend Al Anon, Narc-Anon, Toughlove, or ACOA? 0)No 1)Yes _____

5) Do any of your children attend Al Anon, ACOA or Al Ateen? 0)No 1)Yes _____

6) Do any other immediate family members attend Al-anon, Al-ateen, Narc-Anon, Toughlove, or ACOA? 0)No 1)Yes _____
(mother, father, brothers/sisters, other significant family)

7) Who was the person who first expressed concern about your drug usage? ____|____
0) No one/self only; 1) mother; 2) father; 3) sexual partner/spouse; 4) brother/sister; 5) children; 6) other significant family member; 7) close friend; 8) neighbor; 9) coworker; 10) sponsor; 11) counselor/social worker/therapist; 12) clergyman; 13) other_____

8) How long ago did you first notice cocaine had become a problem for you?
___|___| yr ___|___ months

9) Have you given up, or reduced, any social, job-related, or recreational acivities because of cocaine usage? 0)No 1)Yes ____

Appendix C: 12-Step Program Participation Questionnaire

10) Which activities? ___/___/___/

11) Who was most influential in your decision
to enter treatment? ___|___
1) mother; 2) father; 3) sexual partner/spouse; 4) brother/sister; 5) children;
6) other significant family member; 7) close friend; 8) neighbor; 9) coworker;
10) sponsor; 11) counselor/social worker/therapist; 12) clergyman; 13) self only

12) How were they influential? ___/___/___

13) Why did you choose to enter treatment at this particular time? ___/___/___
(eg Court mandated, Family pressure, Threat of job loss (or EAP pressure), A frightening event, Episode of public embarrassment, Another drink/drug bout right after hospitalization, Aftermath of a suicide attempt, Felt nowhere else to go)

14) Did you come to the Washton Institute as part of an aftercare plan?
0)No 1)Yes ___

15) What is your preferred route of cocaine administration? ___
1) Intranasal (snorting); 2) Freebase smoking (including "crack"); 3) Combination of Intranasal and Freebase; 4) Intravenous (including "speedballing"); 5) Combination of all the above

16) How long has this been your preferred route? ___|___ months

17) In the past 30 days, what has been your most frequent
route of cocaine administration? ___
1) Intranasal (snorting); 2) Freebase smoking (including "crack"); 3) Combination of Intranasal and Freebase; 4) Intravenous (including "speedballing"); 5) Combination of all the above

18) In the past 30 days, do you feel you have been able to control
how often you use cocaine? 0)No 1)Yes ___

Appendix C: 12-Step Program Participation Questionnaire

19) In the past 30 days, do you feel you have been able to control the amount you use once you start, or do you use until you are stopped for some outside reason? (eg no more cocaine is available, has no more money)

0)Can't control 1)Can control _____

20) Do you use cocaine when you are alone? 0) No 1) Yes _____

21) Do you use cocaine mainly on the weekend? 0) No 1) Yes _____

22) Have you stopped or attempted to stop using cocaine in the past? 0)No 1)Yes _____

For next 6 questions, ask patient to use the Patient's Rating Scale

23) To what extent do you agree with the statement:
"If I could do so safely, I would drink and drug."
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

24) To what extent do you agree with the following statement:
"My goal is to achieve and continue complete abstinence from alcohol and drugs."
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

25) To what extent do you agree with the following statement:
"My goal is to reduce, though not necessarily completely stop, alcohol and drug use."
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

26) To what extent do you agree with the following statement:
"Addiction is a progressive illness; recovery is also a progressive process".
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

27) How would you rate your current level of religious belief?
0) none at all; 1) slight; 2) moderate; 3) considerable; 4) extreme _____

28) How would you rate your maximum level of religious belief in the past?
0) none at all; 1) slight; 2) moderate; 3) considerable; 4) extreme _____

Appendix C: 12-Step Program Participation Questionnaire

12-Step Groups

1) How many times have you attended meetings of any group based on the principles or 12 steps of Alcoholics Anonymous? [Include Alcoholics Anonymous (AA), Cocaine Anonymous (CA), Narcotics Anonymous (NA), Drugs Anonymous (DA), Pills Anonymous (PA), Pot Smokers Anonymous (PSA), Gamblers Anonymous (GA), Debtors Anonymous (Dt. A) Overeaters Anonymous (OA), or other 12-step group]

	Past 30 Days	In Your Life
	___|___	___|___|___

2) Number of <u>different types</u> of 12-Step groups patient has attended ____

<u>For Initial Interview, if patient never attended any 12-step group meeting prior to current treatment episode, ask questions #3 & 4, and then administer the BORRTI:</u>
<u>For Follow-Up Interview, if patient has not attended any 12-step group meetings since admission, ask questions #3 & 4, and then skip to Addendum for Follow-Up Interview, p 11</u>
<u>If patient **has** attended meetings in the past, skip #3 & 4, and proceed with question #5.</u>

3) Was there some reason that you did not approach 12-step groups? 0)No 1)Yes ____

4) What reason(s)? ___/___/___

5) For which problem(s)?_____
Code in order of patient's perception of severity (most severe first) [see ASI Manual for codes]
___/___/ ___/___/ ___/___/

6) Of the above 12-step groups, which were you <u>most</u> likely to attend? ____
0) No pref.; 1) AA; 2) CA; 3) NA; 4) DA; 5) PA; 6) PSA; 7) GA; 8) Dt.A; 8) OA; 9) Other;

7) Age at which you attended your first 12-step meeting: ___|___

8) What is the <u>greatest frequency</u> with which you have gone to 12-step meetings? ____
0) None/Not at all; 1) 5 or more times per week; 2) 2-4 times per week; 3) once a week; 4) once every few weeks; 5) once every few months; 6) less than once every few months

Appendix C: 12-Step Program Participation Questionnaire

9) How long did you maintain this level of attendance? months: ___|___

10) How long ago did this peak attendance end? months: ___|___

	Past 30 Days	In Your Life
11) How often, on average, have you attended meetings of 12-step groups?	_____	_____

0) None/Not at all; 1) 5 or more times per week; 2) 2-4 times per week; 3) once a week
4) once every few weeks; 5) once every few months; 6) less than once every few months

12) Did your spouse or person closest to you approve of your going to 12-step groups? 0)No 1)Yes _____

13) How long ago did you attend your last meeting? ___|___ mo. ___|___ days

14) In the past, how many of the following apply to you? (**INTENSITY**)
made the coffee for a meeting____; helped to set the room up____; put chairs & ashtrays, etc. away after the meeting____; has been a speaker____; has chaired a meeting____; contributes money____; has been a treasurer____; has raised hand during discussions____; has gone to "step" meetings____; has been a rep at GSO____; attended "discussion" as well as "speaker" meetings____ attended "open" as well as "closed" meetings____; has a sponsor____ has more than one sponsor____; sponsors others____; goes to CA/AA sponsored social activities (eg parties, dances)____; socializes informally with other CA/AA's outside of meetings (eg coffee after the meeting)____; has attended 30 meetings in 30 days____; has attended "60 in 60"____; has attended "90 in 90"____; has attended "special interest" meetings (e.g. women, gays, professionals, newcomers, young people's)____; attended more than one meeting per day____; goes to more than one type of 12 step meeting____; attended an AA/CA convention or retreat____; has done "12th step work"____

Total (max=25) ___|___

Appendix C: 12-Step Program Participation Questionnaire

15) In the past, how many of the following apply to you? (**STABILITY**)
attended a particular meeting 3 or more times____;
attended more than one particular meeting 3 or more times____; has a planned in advance schedule of meetings____; has a "home" meeting____;
at least one meeting where others will notice if you are not there____;
has set a minimum number of meetings for the week____; Total (max=6) ____

16) How helpful have 12-step groups been to you? (**Satisfaction**) _____
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely

17) Would you recommend a 12-step group to a friend
who needs help for a drug problem? 0)No 1)Yes _____

18) Were there any things about 12 step groups which made you not want to attend or because of which you attended fewer meetings than you otherwise might have?
0)No 1)Yes _____

19) What are they? ___/___/___

20) Who knew about your 12-step group membership? Total___|___
1) mother___ 2) father___ 3) sexual partner/spouse___ 4) brother/sister___
5) children___ 6) other significant family member___ 7) close friend___
8) neighbor___; 9) coworker___ 10) sponsor___;
11) counselor/social worker/therapist___; 12) clergyman___ 13) other___

21) Did you make a decision to quit going to meetings at any point? 0)No 1)Yes _____

22) If Yes, why? ___/___/___

23) How important to you were using the slogans? (eg one day at a time, first things first, easy does it, keep it simple, live and let live, let go and let God, think)
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

24) How important to you were "working the steps"?
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

Appendix C: 12-Step Program Participation Questionnaire

SPONSOR For f/u interview, re-phrase questions for the past 90 days (ie since admission).

1) Did you have a sponsor? 0)No 1)Yes _____

2) If not, was there any particular reason for not having one? ___/___/___

If patient did not have a sponsor, then either
1) administer the BORRTI at this point (at initial interview) or
2) skip to p.11: Addendum for Follow-Up Interview (at follow-up interview)

3) Did you use more than one sponsor? 0)No 1)Yes _____

4) If Yes, how many? _____

If more than one sponsor, have patient identify the "main" sponsor and ask about him/her.

5) How long did it take to get a sponsor? ___|___weeks

6) Was your sponsor 0) female or 1) male? _____

7) Would you say your sponsor was:
0) older than you; 1) younger than you; 2) about the same age _____

8) What sort of occupation did your sponsor have? _____

1) Higher executives, Major professionals, Owners of large businesses, (people with post-graduate degrees)

2) Business managers, Medium businesses, Lesser professionals (sales people, police office people, managers) (nurses, optitians, pharmacists, social workers, teachers)

3) Administrative personnel, Small businesses, Minor professionals (art gallery, bakery, car dealer, engraver, florist, decorator,plumber, actor, reporter, travel agent)

4) Clerical and sales, Technician, Little business (bank teller, bookkeeper, clerk, draftsman, timekeeper)

5) Skilled manual (baker, barber, brakeman, chef, electrician, fireman, lineman, machinist, mechanic, paperhanger, painter, repairman, tailor, welder)

6) Semi-skilled (machine operator, hospital aide, painter, bartender, busdriver, cutter, cook, drill press, garage, guard, watchman, checker, waiter, spot welder)

7) Unskilled (attendant, janitor, construction, unspecified labor, porter, or unemployed)

Appendix C: 12-Step Program Participation Questionnaire

9) How long was your sponsor abstinent? ___|___ yr. ___|___ mo.

10) Was your sponsor: 1) White; 2) Black/ American; 3) Black Caribbean;
4) Hispanic-Puerto Rican; 5) Hispanic-Dominican; 6) Asian _____

11) Did you have significant periods in which you have
experienced serious problems with your sponsor? 0)No 1)Yes _____

	Past 30 Days	In Your Life
12) About how many contacts, on average, did you have with your sponsor? (Includes both in person and telephone)	_____	_____

0) None/Not at all; 1) 5 or more times per week; 2) 2-4 times per week; 3) once a week
4) once every few weeks; 5) Less than once every few weeks

13) Did you attend meetings with your sponsor?
0)No 1)Yes _____

14) If yes, how often? _____ _____
0) None/Not at all; 1) 5 or more times per week; 2) 2-4 times per week; 3) once a week
4) once every few weeks; 5) Less than once every few weeks

15) Did you socialize with your sponsor outside of meetings? 0)No 1)Yes _____

16) If yes, how often? _____ _____
0) None/Not at all; 1) 5 or more times per week; 2) 2-4 times per week; 3) once a week
4) once every few weeks; 5) Less than once every few weeks

17) What did you do together?_____ ___/___/___

18) Did you discuss important personal matters with your sponsor?
0)No 1)Yes _____

19) Did your sponsor hinder your recovery in any way?
0)No 1)Yes _____

20) If Yes, How? ___/___/___

Appendix C: 12-Step Program Participation Questionnaire

21) Have you ever changed sponsors? 0)No 1)Yes _____

22) If Yes, why? ___/___/___

23) How close did you feel to your sponsor? _____
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely

24) How easy was it to discuss important personal matters with your sponsor?
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

25) How available was your sponsor when you needed him or her?
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

26) Overall, how important to your recovery was your sponsor?
0) not at all; 1) slightly; 2) moderately; 3) considerably; 4) extremely _____

Confidence Ratings

Is the above information significantly distorted by:

27) Patient's misrepresentation? 0)No 1)Yes ____

28) Patient's inability to understand? 0)No 1)Yes ____

Appendix C: 12-Step Program Participation Questionnaire

Addendum for Follow-Up Interview

1) What were the circumstances and/or reasons for drug use since first interview, if use has occurred. ___/___/___

2) Time elapsed between first interview (admission) and first slip, if a slip has occurred ___|___ days

3) Who has been the most meaningful person to you in your recovery? ___|___
1) mother; 2) father; 3) sexual partner/spouse; 4) brother/sister; 5) children; 6) other significant family member; 7) close friend; 8) neighbor; 9) coworker; 10) sponsor; 11) counselor/social worker/therapist; 12) clergyman; 13) other_____

4) Why? ___/___/___

5) Who has been most influential in helping you maintain abstinence? ___|___
1) mother; 2) father; 3) sexual partner/spouse; 4) brother/sister; 5) children; 6) other significant family member; 7) close friend; 8) neighbor; 9) coworker; 10) sponsor; 11) counselor/social worker/therapist; 12) clergyman; 13) other_____

6) How were they influential? ___/___/___

7) What has your recovery been like generally?
0) very comfortable; 1) somewhat comfortable; 2) mixed; 3) somewhat uncomfortable; 4) very uncomfortable _____

8) In general, how would you describe your abstinence (sobriety) so far?
0) easy to maintain; 1) fairly easy; 2) easy and difficult; 3) fairly difficult; 4) very difficult _____

9) Have you missed any days of scheduled treatment since starting? 0) No 1) Yes _____

10) How many? ___/___

Appendix C: 12-Step Program Participation Questionnaire

11) For what reasons? ___/___/___

Confidence Ratings: Is the above information significantly distorted by:

12) Patient's misrepresentation? 0)No 1)Yes ____

13) Patient's inability to understand? 0)No 1)Yes ____

Appendix D: Recruitment Form

Help Yourself/Help Others
By Being in a Research Study

It's easy and will help your treatment.

Print your name below. You will then be contacted by Christopher Leggett, a member of the research staff, to explain the study and to answer any questions. Don't forget to include a phone number where you can be reached, along with good times to reach you.

Please Print Your Name: _____

Telephone # _____

Good Times to Reach You by Phone: _____

Appendix E: Informed Consent Form

Research Study Consent Form

We need males with cocaine-related problems to be part of a research study. We are studying psychological and social factors that affect recovery. If you agree to take part, you will be interviewed twice for about 90 minutes each time: once at the start of your treatment, and then again 90 days later. You will also complete a brief questionnaire at each interview.

Your participation is confidential. Information you tell us will be shared with your counselor and the treatment staff to help plan the best treatment for you. However, nobody outside this treatment facility will be told of your participation in this research study.

Your participation is voluntary. There is no penalty if you do not want to be in this research study. You may also stop at any time should you wish to do so. We do not expect any negative effects from your being in this research study. In fact, we think it will help your treatment.

If you have any questions about this project, your role, or your rights as a participant, a member of the research staff will be happy to answer them for you. The results of this study will be provided to you upon request when they are available.

You are encouraged to take part because it will help your treatment and help us to better understand addiction.

If you'd like to take part, just sign this consent form below. You will then be contacted by Christopher Leggett, a member of the research staff, to set up the interview. Don't forget to include a phone number where you can be reached, along with good times to reach you.

I have read the above description of the research study and agree to take part.

_____ _____ _____

Signature Date Telephone #

Please Print Your Name: _____

Good times to reach you by phone: _____

References

Abraham, K. (1908) The psychological relations between sexuality and alcoholism. In: Selected Papers on Psychoanalysis. London: Maresfield Library, 1988

Alcoholics Anonymous (1947) The A.A. Grapevine. New York: Alcoholics Anonymous World Services

Alcoholics Anonymous (1952) Twelve Steps and Twelve Traditions. New York: Alcoholics Anonymous World Services

Alcoholics Anonymous (1952/1978) 44 Questions and Answers About the AA Program of Recovery from Alcoholism (Revised 1978) New York: Alcoholics Anonymous World Services

Alcoholics Anonymous (1953) This is A.A.: An Introduction to the AA Recovery Program. New York: Alcoholics Anonymous World Services

Alcoholics Anonymous (1957) Alcoholics Anonymous Comes of Age: A Brief History of AA. New York. Alcoholics Anonymous World Services

Alcoholics Anonymous (1975) Living Sober: Some Methods AA Members Have Used for Not Drinking New York: Alcoholics Anonymous World Services

Alcoholics Anonymous (1976) Alcoholics Anonymous (3rd ed.) [a.k.a. The Big Book] New York. Alcoholics Anonymous World Services

Alpher, V.S. (1990) Review of the Bell object relations-reality testing inventory. In: D.J. Reyser and R.L. Sweetland (Eds.) Test Critiques (Vol.8). Austin, Tx.: Pro-Ed, 1990

American Psychiatric Association (1987) Diagnostic and Statistical Manual of Mental Disorders (Third Edition-Revised). Washington, D.C.: Author

Annis, H.M. & Davis, C.S. (1988) Assessment of expectancies. In: D.M. Donovan & G.A. Marlatt (Eds) Assessment of Addictive Behaviors, p. 84-111: Op Cit.

Armor, D.J., Polich, J.M., & Stanbul, H.B. (1978) Alcoholism and Treatment. Santa Monica, CA: Rand Corporation

Ashley, R. (1975) Cocaine: Its History, Uses, and Effects. New York: Warner

Bach, S. (1985) Narcissistic States and the Therapeutic Process. Northvale: Aronson

Bateson, G. (1971) The cybernetics of "self": A theory of alcoholism. Psychiatry. 34: 1-18. Reprinted in Steps to an Ecology of Mind. New York: Ballantine, 1972.

Bean, M. (1975) A crtitique of AA. Psychiatric Annals. Vol.5, #3: 83-91

Bean-Bayog, M. (1986) Psychopathology produced by alcoholism. In: Meyer, R.E. (Ed.) Psychopathology and Addictive Disorders. Op. Cit.

Becker, B., Bell, M.D., and Billington, R.J. (1987) Object relations ego deficits in bulimic college women. J. of Clinical Psychology. Vol.43 (1): 92-95

Bell, M.D. (1989) An Introduction to the Bell Object Relations Reality Testing Inventory. (see next entry)

Bell, M.D. (1991) An Introduction to the Bell Object Relations Reality Testing Inventory. (a revised edition, Available from Morris D. Bell, Ph.D., Psychology Service 116B, VA Medical Center, West Haven Ct. 06515)

Bell, M.D., Billington, R.J., Becker, B.R. (1985) Scale for the assessment of reality testing: Reliability, validity, and factorial invariance. J. of Consulting and Clinical Psychology. Vol. 53(4): 506-511

Bell, M.D., Billington, R.J., Becker, B.R. (1986) A scale for the assessment of object relations: Reliability, validity, and factorial invariance. J. of Clinical Psychology. Vol.42, No.5: 733-741

Bell, M.D., Billington, R.J., Cicchetti, D., Gibbons, J. (1988) Do object relations distinguish BPD from other diagnostic groups? J. of Clinical Psychology. Vol.44, No.4: 511-516

Bell, M.D., Metcalf, J., and Ryan, E. (1979, September) Reality testing and object relations: A self-report instrument. Paper presented at the 87th. Annual Convention of the American Psychological Association, New York

Bell, M.D., Metcalf, J., and Ryan, E. (1980, September) Reality testing-object relations assessment scale: Reliability and validity studies. Paper presented at the 88th. Annual

Convention of the Americal Psychological Association, Montreal

Bellack, L., Hurvich, M., and Gediman, H. (1973) Ego Functions in Schizophrenics, Neurotics, and Normals. New York: Wiley

Beres, D. (1956) Ego deviation and the concept of schizophrenia. Psychoanalytic Study of the Child Vol.2. New York: IUP

Bernfeld, S. (1953/1974) Freud's studies on cocaine. In: Cocaine Papers. R. Byck (ed.) Op Cit.

Bissell, LeC. & Haberman, P.W. (1984) Alcoholism in the Professions New York: Oxford University Press

Blaine, J.D. and Julius, D.A. (Eds) (1977) Psychodynamics of Drug Dependence. NIDA Research Monograph Series # 12. Rockville, Md.: National Institute of Drug Abuse

Blatt, S.J. & Lerner, H. (1983) Investigations in the psychoanalytic theory of object relations and object representations. In: Masling, J. (Ed.) Empirical Studies of Psychoanalytic Theories- Vol. 1. Hillsdale, N.J.: The Analytic Press

Blatt, S.J., Berman, W., Bloom-Feshbach, S., Sugerman, A., Wilber, C., & Kleber, H.D. (1984a) Psychological assessment of psychopathology in opiate addicts. Journal of Nervous and Mental Disease Vol. 172, No.3: 156-165

Blatt, S.J., Rounsaville, B., Eyre, S.L. & Wilber, C. (1984b) The psychodynamics of opiate addiction. Journal of Nervous and Mental Disease. Vol. 172, No.6: 342-352

Blatt, S.J. & Berman, W.H. (1990) Differentation of personality types among opiate addicts. Journal of Personality Assessment. 54,(1&2): 87-104

Blume, S.B. (1987) Alcohol problems in cocaine abusers.
In: Washton, A.M. & Gold, M.S. (1987) Cocaine: A Clinician's Handbook. Op Cit.

Brown, S. (1985) Treating the Alcoholic: A Developmental Model of Recovery.
New York: John Wiley & Sons

Byck, R. (Ed.) (1974) Cocaine Papers. New York: Meridian

Cacciola, J., Griffith, J., McLellan, A.T. (Eds) (1985) Addiction Severity Index: Instruction Manual - Fourth Edition. Rockville, MD: NIDA

DeLeon, G. (1984) The therapeutic community: Study of effectiveness. NIDA Research Monograph, DHHS Pub. No. ADM 84-1286. Washington, DC: U.S. Govt. Printing Office

Donovan, D.M. & Marlatt, G.A. (Eds) (1988) Assessment of Addictive Behaviors. New York: Guilford

Emrick, C. (1975) A review of psychologically oriented treatment of alcoholism II: The relative effectiveness of different treatment approaches and the effectiveness of treatment versus no treatment. Quarterly Journal of Studies on Alcohol. 36 (1): 88-108.

Emrick, C. (1987) Alcoholics anonymous: Affiliation processes and effectiveness as treatment. Alcoholism: Clinical & Experimental Research. 11: 416-423

Emrick, C. & Hansen, J. (1982) Thoughts on treatment evaluation methodology. Future Directions in Alcohol Abuse Treatment Research NIAAA Research Monograph-15: U.S.Dept. of Health and Human Services: ADAMHA

Engelman, E.A. (1985) Level of object representation in depression: a longtitudinal study. Unpublished Doctoral Dissertation: Adelphi University, Derner Institute of Advanced Psychological Studies, Gardern City, N.Y. Summarized in: International Dissertation Abstracts. Vol.46/04 p1334 B.

Fenichel, O. (1945) The Psychoanalytic Theory of Neurosis. New York: W.W. Norton & Co., Inc.

Fine, R. (1979) A History of Psychoanalysis. New York: Columbia University Press

Flores, P.J. (1988) Alcoholics Anonymous: A phenomenological and existential perspective. Alcoholism Treatment Quarterly. Vol.5 (1/2): p73-94

Frances, A., Clarkin, J., Gilmore, J., Hunt, S., & Brown, R. (1984) Reliability of criteria for borderline personality disorder: A comparison of DSM III and DIB. American Journal of Psychiatry, 141, 1080-1084.

Freud, S. (1884) Über Coca. In: Cocaine Papers. R. Byck (ed.) Op Cit.

Freud, S. (1898) Sexuality in the aetiology of the neuroses. In: Early Psychoanalytic Writings, Philip Rieff (ed.) New York: Collier Books 1963

Freud, S. (1905a) Three Essays on the Theory of Sexuality New York: Basic Books 1962

Freud, S. (1905b) Jokes and Their Relation To the Unconscious New York: Norton 1963

Freud, S. (1912) On the universal tendency to debasement in the sphere of love. Standard Edition 11: 177-190. New York: Norton

Freud, S. (1917) Mourning and melancholia. In: General Psychological Theory. Philip Rieff (ed.). New York: Collier Books 1963

Freud, S. (1926d) Inhibitions, Symptoms, and Anxiety New York: Norton 1959

Freud, S. (1928b) Dostoevsky and parricide. In: Character and Culture. Philip Rieff (ed.) New York: Collier Books 1963

Freud, S. (1930) Civilization and its Discontents New York: Norton 1961

Freud, S. (1985) The Complete Letters of Sigmund Freud to Wilhelm Fliess 1887-1904. Translated and Edited by Jeffrey M. Masson. pp287-289 Cambridge: Belknap Harvard

Galanter, M. (1984) Professionally directed self-help therapy for alcoholism. In: Galanter, M. & Pattison, E.M. (Eds) Advances in the Psychosocial Treatment of Alcoholism. Washington, D.C.: American Psychiatric Press, 1984

Gay, P. (1988) Freud: A Life for Our Time. New York: W.W.Norton & Co.

Gibbons, J. (1985) The prediction of object representation from projective data: Borderline personality disorder (DSM III). Unpublished Doctoral Dissertation: Fordham University, NYC. Summarized in: International Dissertation Abstracts. Vol.46/10: p3592 B.

Glover, E. (1956) On the etiology of drug addiction. In: On the Early Development of the Mind New York: IUP

Gordis, E. et al. (1981) Outcome of alcoholism treatment among 5578 patients in an urban comprehensive hospital-based program: application of a computerized data system. Alcoholism: Clinical and Experimental Research. 5 (4): 509-522.

Greenberg, J. & Mitchell, S. (1983) Object Relations in Psychoanalytic Theory. Cambridge: Harvard University Press

Grabowski, J. (Ed.) (1984) Cocaine: Psychopharmacology, Effects, and Treatment of Abuse. NIDA Research Monograph Series #50. Rockville, MD: U.S. Government Printing Office

Hartocollis, P. & Hartocollis, P.C. (1980) Alcoholism, borderline, and narcissistic disorders: A psychoanalytic overview. In: W. Fann, I. Karacan, A. Pokorny, & R. Williams (eds.), Phenomenology and Treatment of Alcoholism. New York: S.P. Medical and Science Books

Hazelden Foundation, The (1974) The Twelve Steps of Alcoholics Anonymous: Interpreted by The Hazelden Foundation. New York: Harper/Hazelden

Hazelden Foundation, The (1980) Finding Your Way: Guidelines for Recovery. Center City, MN: Hazelden

Hollingshead, A.B., & Redlich, F.C. (1958) Social Class and Mental Illness. New York: Wiley

Jacobson, E. (1954) Contribution to the metapsychology of psychotic identifications. Journal of the American Psychoanalytic Association 2: 239-262. Also in: Depression Ch. 10, Op Cit.

Jacobson, E. (1964) The Self and the Object World. Madison, Ct.: International Universities Press

Jacobson, E. (1971) Depression Madison, Ct.: I.U.P.

Jones, E. (1961) The Life and Work of Sigmund Freud Edited and Abridged by L. Trilling and S. Marcus. New York: Basic Books

Kammeier, M.L., Hoffmann, H., & Loper, R.G. (1973) Personality characteristics of alcoholics as college freshman and at time of treatment. Quarterly Journal of Studies on Alcohol Vol. 34. 390-399

Kaufman, E. (1985) Substance Abuse and Family Therapy. Orlando, FL: Grune & Stratton

Kernberg, O.F. (1966) Structural derivatives of object relationships. International Journal of Psychoanalysis 47: 236-253. Also in: Object Relations Theory and Clinical Psychoanalysis pp 19-54: Op Cit.

Kernberg, O.F. (1975) Borderline Conditions and Pathological Narcissism Northvale, N.J.: Jason Aronson

Kernberg, O.F. (1976) Object Relations Theory and Clinical Psychoanalysis Northvale, N.J.: Jason Aronson

Kernberg, O.F. (1980) Internal World and External Reality. Northvale, N.J.: Jason Aronson

Kernberg, O.F. (1984) Severe Personality Disorders New Haven: Yale University Press

Kertzner, R.M. (1987) Individual psychotherapy of cocaine abuse. In: Spitz, H.I. & Rosecan, J.S.(Eds) Cocaine Abuse: New Directions in Treatment and Research. Op Cit.

Khantzian, E.J. (1974) Opiate addiction: A critique of theory and some implications for treatment. Am. J. Psychother., 28: 59-70

Khantzian, E.J. (1977) The ego, the self, and opiate addiction: Theoretical and treatment considerations. In: Blaine, J.D. and Julius, D.A. (Eds) (1977) Psychodynamics of Drug Dependence. NIDA Research Monograph Series #12. Op Cit.

Khantzian, E.J. (1985a) The self-medication hypothesis of addictive disorders: focus on heroin and cocaine dependence. American Journal of Psychiatry, 142: 1259-1264.

Khantzian, E.J. (1985b) On the psychological predisposition for opiate and stimulant dependence. Psychiatry Letter, 3, 1.

Khantzian, E.J. (1987) Psychiatric and psychodynamic factors in cocaine dependence. In A.M. Washton and M. Gold (Eds) Cocaine: A Clinician's Handbook. Op Cit.

Khantzian, E.J., Halliday, K.S., & McAuliffe, W.E. (1990) Addiction and the Vulnerable Self New York: The Guilford Press

Khantzian, E.J., & Treece, C.J. (1977) Psychodynamics of drug dependence: An overview. In: Blaine, J.D. and Julius, D.A. (Eds) (1977) Psychodynamics of Drug Dependence. NIDA Research Monograph Series #12. Op Cit.

Kleber, H.D. & Gawin, F.H. (1984a) The spectrum of cocaine abuse and its treatment. Journal of Clinical Psychiatry, 45: 18-23

Kleber, H.D. & Gawin, F.H. (1984b) Cocaine abuse: A review of current and experimental treatments. In: Grabowski, J. (Ed.) (1984) Cocaine: Psychopharmacology, Effects, and Treatment of Abuse. NIDA Research Monograph Series #50. Op Cit.

Kleber, H.D. & Gawin, F.H. (1986) Cocaine. In Frances, AJ & Hale, RE (eds): Psychiatric Update: The American Psychiatric Association Annual Review, Vol.5; Washington DC: American Psychiatric Press, Inc, 1986

Kohut, H. (1966) Forms and transformations of narcissism. J. of Amer. Psychoanalytic Assoc. 14: 243-272. Also in: The Search for the Self. pp 427-460. Op Cit.

Kohut, H. (1971) The Analysis of the Self. Madison, Ct.: I.U.P

Kohut, H. (1977a) The Restoration of the Self. Madison, Ct.: I.U.P.

Kohut, H. (1977b) Preface to: Psychodynamics of Drug Dependence. NIDA Research Monograph Series #12, J.D. Blaine and D.A. Julius (Eds). Rockville, Md.: National Institute of Drug Abuse

Kohut, H. (1978) The Search for the Self - Selected Writings of Heinz Kohut: 1950-1978, Vols 1&2, (Ed.) P. Ornstein. Madison, Ct.: I.U.P.

Kurtz, E. (1979) Not-God: A History of Alcoholics Anonymous Center City, Minn.: Hazelden

Kurtz, E. (1982) Why AA works: The intellectual significance of Alcoholics Anonymous. Journal of Studies on Alcohol, Vol 43, #1: 38-80

Krystal, H. & Raskin, H.A. (1970) Drug Dependence: Aspects of Ego Functions. Detroit: Wayne State Univ. Press

Levin, J.D. (1987) Treatment of Alcoholism and Other Addictions Northvale: Aronson

Lieberman, M.A. (1986) Self help groups and psychiatry. In: Frances, A.J., & Hales R.E. (Ed.s) American Psychiatric Association Annual Review, Vol. 5. Washington, DC: American Psychiatric Press

Loevinger, J. (1957) Objective tests as instruments of psychosocial theory. Psychological Reports, 3, 635-694

Luborsky, L., Mintz, J., & Auerbach, A. (1980) Predicting the outcomes of psychotherapy: Findings of the Penn Psychotherapy Project. Archives of General Psychiatry, 37: 471-481

Mahler, M.S. (1968) On Human Symbiosis and the Vicissitudes of Individuation, Vol.1, Infantile Psychosis. New York: IUP

Mahler, M.S.(1971) A study of the separation-individuation process and its possible application to borderline phenomena in the psychoanalytic situation. Psychoanalytic Study of

the Child 26: 403-424.

Mahler, M.S. (1972) On the first three subphases of the separation-individuation process. Int. J.of Psychoanalysis 53: 333-338

Mahler, M.S., Pine, F., & Bergman, A. (1975) The Psychological Birth of the Human Infant New York: Basic Books

Marlatt, G.A. (1988) Matching clients to treatment: Treatment models and stages of change. In: Donovan, D.M., & Marlatt, G.A. (Eds) Assessment of Addictive Behaviors. Op. Cit.

Marlatt, G.A., & Gordon, J.R., Eds (1985) Relapse Prevention. New York: Guilford

Massing, M. (1992) What ever happened to the 'War on Drugs'? In: The New York Review of Books (June 12, 1992 issue); New York: NYREV, Inc.

Maxwell, M.A. (1984) The AA Experience: A Close-Up View for Professionals. New York: McGraw-Hill

McClelland, D.C., Davis, W., Kalin, R., and Wanner, E. (1972) The Drinking Man: Alcohol and Human Motivation. New York: The Free Press.

McLellan, A.T. (1986) "Psychiatric severity" as a predictor of outcome from substance abuse treatments. In: Meyer, R.E. (Ed.) Psychopathology and Addictive Disorders. Op. Cit.

McLellan, A.T., Luborsky, L., Cacciola, J., Griffith, J., McGahan, P., & O'Brien, C.P. (1985) Guide to the Addiction Severity Index: Background, Administration, and Field Testing Results. [NIDA Treatment Research Report] Rockville, MD: NIDA

McLellan, A.T., Luborsky, L., Woody, G.E., O'Brien, C.P (1983) Predicting response to alcohol and drug abuse treatments: The role of psychiatric severity. Archives of General Psychiatry. Vol.40: 620-625

Meyer, R.E. (1983, May) Sociopathy as a negative predictor of treatment for alcohol abuse. Paper presented at the annual meeting of the American Psychiatric Association, New York

Meyer, R.E., (Ed.) (1986) Psychopathology and Addictive Disorders. New York: Guilford

Meyer, R.E., (1986) How to understand the relationship between psychopathology and addictive disorders: Another example of the chicken and the egg. In: R.E. Meyer, (Ed.)

Psychopathology and Addictive Disorders. Op Cit.

Milkman, H., & Frosch, W.A. (1973) On the preferential use of heroin and amphetamine. Journal of Nervous and Mental Disease, 156: 242-248

Mitchell, S.A. (1988) Relational Concepts in Psychoanalysis: An Integration. Cambridge, Ma.: Harvard University Press

Miripol, P.P. (1982) Clinical and statistical validation of current object relations measures. Unpublished Doctoral Dissertation: Illinois Institute of Technology, Chicago. Summarized in: International Dissertation Abstracts. Vol.34/04: p1260 B.

Nathan, P.E. (1988) The addictive personality is the behavior of the addict. Journal of Consulting and Clinical Psychology. Vol.56, No.2: 183-188

Neumann, C.P.& Tamerin, J.S. (1971) Prognostic factors in the evaluation of addicted individuals. International Pharmacopsychiatry. Vol. 6: 59-76.

Ogborne, A.C & Glaser, F.B. (1981) Characteristics of affiliates of AA. J. Stud. Alc. 42: 661-675

Ogborne, A.C. & Glaser, F.B. (1985) Evaluating Alcoholics Anonymous. In: Bratter, T.E. & Forrest G.G. (Ed.s) Alcoholism and Substance Abuse:Strategies for Clinical Intervention. New York: The Free Press

Peele, S., with Brodsky, A. (1975) Love and Addiction. New York: Signet

Peele, S. (1989) Diseasing of America: Addiction Treatment Out of Control. Lexington, Ma.: Lexington Books

Rado, S. (1933) The psychoanalysis of pharmacothymia (Drug addiction). In: H. Shaffer and M. Burglass (Ed.s) Classic Contributions in the Addictions. Op. Cit.

Randolph, B.J. (1984) Sexual decision-making: correlations of levels of decision-making with body-image, sex role identity, self-esteem, and object relations. Unpublished Doctoral Dissertation, Virginia Consortium for Professional Psychology (Old Dominion Univ). Summarized in: International Dissertation Abstracts. Vol.46/02: p657 B.

Rapaport, D. (1958) The theory of ego autonomy: A generalization. Bulletin of the Menninger Clinic, 22: 13-35; Also in: Gill, M. (ed) The Collected Papers of David Rapaport. New York:

Basic Books 1967, p. 722-744

Rapaport, D. (1959) A historical survey of psychoanalytic ego psychology. In: Erikson, E. Identity and the Life Cycle (Psychological Issues, Monograph 1). New York: Int. Univ. Press, p 5-17

Rapaport, D. (1960) On the psychoanalytic theory of motivation. In: Gill, M. (ed) The Collected Papers of David Rapaport. New York: Basic Books 1967, p. 853-915

Ray, O. (1983) Drugs, Society, and Human Behavior. St. Louis: The C.V. Mosby Company

Roazen, P. (1971) Freud and His Followers New York: Meridan

Rosecan, J.S. (1983) The treatment of cocaine abuse with imipramine, l-tyrosine, and l-tryptophan. Paper presented at the VII World Congress of Psychiatry, Vienna

Ryan, E.R., & Bell, M.D. (1984) Changes in object relations from psychosis to recovery. J. of Abnormal Psychology. Vol.93 (2): 209-215

Schuckit, M. (1987) Genetics and the specific dimensions of risk for alcoholism. In: L.S. Harris (Ed.) Problems of Drug Dependence, 1987 (NIDA Research Monograph 81 - 1988). Rockville, Md.: NIDA

Shaffer, H. & Burglass, M.E. (Ed.s) (1981) Classic Contributions in the Addictions. New York: Brunner/Mazel

Sheeren, M. (1988) The relationship between relapse and involvement in Alcoholics Anonymous. Journal of Studies on Alcohol, Vol. 49, No. 1: 104-106

Siegel, R.K. (1989) Intoxication. New York: Pocket Books (Simon & Schuster Inc.)

Siegel, R.K. (1984) Changing patterns of cocaine use: Longtitudinal observations, consequences, and treatment. In: J. Grabowski,(Ed.) Cocaine: Psychopharmacology, Effects, and Treatment of Abuse. Op Cit.

Simpson, D.D., Savage, L.J., Lloyd, M.R., & Sells, S.B. (1978) Evaluation of drug abuse treatments based on first year follow-up. (NIDA Research Monograph, DHHS Publication No. 78-411). Washington, D.C.: U.S. Government Printing Office.

Skodol, A.E. (1987) Diagnostic issues in cocaine abuse. In: Spitz, H.I. & Rosecan,

J.S (Eds) (1987) Cocaine Abuse: New Directions in Treatment and Research. Op Cit.

Smith, D.E. (1984) Diagnostic, treatment and aftercare approaches to cocaine abuse. Journal of Substance Abuse Treatment. Vol.1: 5-9.

Smith, D.E., & Wesson, D.R. (1985) Cocaine abuse and treatment: An overview. In: D.E. Smith, & D.R. Wesson (Eds) Treating the Cocaine Abuser. Center City, MN: Hazelden Foundation

Spero, M.H. (1987) Qualities of object relations and field dependence in alcoholic and recovered alcoholic males. International Journal of the Addictions. 22, (10): 1019-1032

Spiegel, E. & Mulder, E.A. (1986): The anonymous program and ego functioning. Issues in Ego Psychology. Vol.9, No.1: p 34-42.

Spitz, H.I. (1987) Cocaine abuse: Therapeutic group approaches. In: Spitz, H.I. & Rosecan, J.S (Eds) (1987) Cocaine Abuse: New Directions in Treatment and Research. Op Cit.

Spitz, H.I. & Rosecan, J.S. (1987a) Overview of cocaine abuse treatment. In: Spitz, H.I. & Rosecan, J.S.(Eds) (1987) Cocaine Abuse: New Directions in Treatment and Research. Op Cit.

Spitz, H.I. & Rosecan, J.S.(Eds) (1987) Cocaine Abuse: New Directions in Treatment and Research. New York: Brunner/Mazel, Inc.

Spitzer, R.L. & Endicott, J. (1975) Schedule for Affective Disorders and Schizophrenia - Lifetime Version. New York: Biometrics Research.

Spitzer, R.L., Endicott, J., Robins,E. (1977) Research diagnostic criteria (RDC) for a selected group of functional disorders, Edition 3. (New York Biometric Research). New York: New York Psychiatric Institute.

Spotts, J.V. & Schontz, F.C. (1975) Cocaine Users: A Representative Case Approach. New York: Macmillan

Spotts, J.V. & Schontz, F.C. (1982) Ego development, dragon fights, and chronic drug abusers. International Journal of the Addictions. Vol.17: 945-976

Spotts, J.V. & Schontz, F.C. (1983) Psychopathology and chronic drug use: A methodological paradigm. International Journal of the Addictions. Vol.18: 633-680

Spotts, J.V. & Schontz, F.C. (1984) Drug induced ego states. International Journal of the Addictions, Vol. 19, #2: 119-151

Stone, N., Fromme, M., & Kagan, D. (1984) Cocaine: Seduction and Solution. New York: Potter

Stricker, G. and Healey, B.J. (1990) Projective assessment of object relations: A review of the empirical literature. Psychological Assessment. Vol.2, No.3, 219-230

Sutker, P.B. & Allain, A.N. (1988) Issues in personality conceptualizations of addictive behaviors. Journal of Consulting and Clinical Psychology. Vol.56, No.2: 172-182.

Tatarsky, A. (1986) Cocaine abuse and psychological functioning. Unpublished Doctoral Dissertation: The City University of New York.

Tuber, S.B., Frank, M., & Santostefano, S. (1989) Children's anticipation of impending surgery. Shifts in object-representational paradigms. Bulletin of the Menninger Clinic, 53, 501-511

Urist, J. (1980) Object relations. In: R.H. Woody (ed.) Encyclopedia of Clinical Assessment, Vol 2 New York: Josey-Bass

Vaillant, G.E. (1983) The Natural History of Alcoholism. Cambridge, MA: Harvard U. Press

Van Dyke, C. and Byck, R. (1982) Cocaine. Scientific American. Vol. 246 (3): 128-141

Verebey, K.& Gold, M.S. (Unpublished paper) Psychopharmacology of cocaine: Behavior, neurophysiology, and proposed treatment. New York State Division of Substance Abuse Services, New York.

Wallace, B.C. (1987) Cocaine dependence treatment on an inpatient detoxification unit. Journal of Substance Abuse Treatment. Vol.4: pp 85-92

Wallace, B.C. (1989a) Psychological and environmental determinents of relapse in crack cocaine smokers. Journal of Substance Abuse Treatment. Vol.6: pp 95-106

Wallace, B.C. (1989b) Relapse prevention in psychoeducational groups for compulsive crack cocaine smokers. Journal of Substance Abuse Treatment. Vol.6: PP 229-239

Wallace, B.C. (1991) Crack Cocaine: A Practical Treatment Approach for the Chemically Dependent. New York: Brunner Mazel

Washton, A.M. (1987) Outpatient treatment techniques. In: Washton, A.M. & Gold, M.S. (Ed.s) Cocaine: A Clinician's Handbook. Op Cit.

Washton, A.M. (1989) Cocaine Addiction: Treatment, Recovery, and Relapse Prevention. New York: WW Norton & Co.

Washton, A.M. & Gold, M.S. (Ed.s) (1987) Cocaine: A Clinician's Handbook. New York: Guilford

Washton, A.M., Stone, N.S., & Hendrickson, E.C. (1988) Cocaine abuse. In: D.M.Donovan & G.A. Marlatt (Eds) Assessment of Addictive Behaviors. Op Cit.

Washton Institute, The (Unpublished) Intensive Outpatient Treatment (pamphlet distributed by The Washton Institute).

Wieder, H., & Kaplan, E.H. (1969) Drug use in adolescents: Psychodynamic meaning and pharmacogenic effect. Psychoanalytic Study of the Child, 24: 399-431

Wurmser, L. (1974/1981) Psychoanalytic considerations in the etiology of compulsive drug use. Journal of the American Psychoanalytic Association, 32: 820-843, 1974; Also in: Shaffer, H. & Burglass, M.E. (Ed.s) (1981) Classic Contributions in the Addictions. Op Cit.

Wurmser, L. (1977) Mr. Pecksniff's horse? (Psychodynamics in compulsive drug use). In: Blaine, J.D. and Julius, D.A. (Eds) Psychodynamics of Drug Dependence. NIDA Research Monograph Series #12. Op Cit.

Wurmser, L. (1978) The Hidden Dimension. Northvale: Aronson

Yates, B.T. (1982) Doing the Dissertation: The Nuts and Bolts of Psychological Research. Springfield, Ill: Charles C. Thomas

Yorke, C. (1970) A critical review of some psychoanalytic literature on drug addiction. British Journal of Medical Psychology 43:141-159

Zinberg, N.E. (1975) Addiction and ego function. Psychoanalytic Study of the Child Vol. 30: 567-588

Zinberg, N.E. (1984) Drug, Set, and Setting. New Haven: Yale University Press