Cocaine Dependence: The Relationship of Causal Attributions and Relapse

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COCAINNE DEPENDENCE: THE RELATIONSHIP OF
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by

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VITA

The author, James W. Pier, was born in Munich, West Germany, on May 12, 1963. His family returned to the United States in 1965 and he attended Marquette University High School in Milwaukee, Wisconsin, graduating in May of 1981. He graduated cum laude with a Bachelor of Arts degree in psychology from Boston College in May of 1985.

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CHAPTER I
INTRODUCTION

The stimulant cocaine has seen widespread use and abuse in the United States since the mid-1970s (Smith, 1986). Cocaine is an alkaloid extracted from the leaves of the coca plant. In its most recognizable form, cocaine is a hydrochloride salt which has the appearance of a fine, white, crystalline powder (Spence, 1986).

Although cocaine does have a legitimate medical use (e.g., as a topical anesthetic), it has achieved its notoriety because of its nonmedical appeal. Cocaine is used in several different ways. Often the hydrochloride powder is "cut" into lines which are then inhaled through a straw or rolled up dollar bill. Since street cocaine is water soluble, it may be injected with a hypodermic needle directly into the veins (Spence, 1986). In the method of use known as "free-basing," the hydrochloride salt is alkalinized and the freed cocaine is extracted with solvents such as ether. Free-base cocaine is then smoked. Crack cocaine represents the most recent, and perhaps most serious, form of cocaine use. Crack is extracted from cocaine hydrochloride powder in a simple procedure using baking soda, heat and water (Washton, 1986a). The result is a potent, smokeable form of cocaine with an extremely high addiction potential (Washton, 1986a). Because crack is highly addictive, readily available, and cheap ($5 - $20 for a vial of crack), it is extremely popular, both with users and pushers.
Stimulant abuse of epidemic proportions is not a new problem. According to Gawin and Ellinwood (1988), in the 1890's, cocaine use surged and was temporarily considered to be safe. Gawin and Ellinwood also report that as reports of severe abuse became more commonplace, cocaine use abated. This phenomenon repeated itself in the 1920's, and again in the early 1950's (with amphetamine) and late 1960's (with methamphetamine). In the mid-1970's, cocaine again emerged as the illicit drug of choice and status in middle class America (Gay, Inaba, Sheppard, & Newmeyer, 1975). By 1986, the National Institute on Drug Abuse (NIDA) estimated that 3 million people used cocaine regularly (Gawin & Ellinwood, 1988).

The current epidemic of cocaine use can be seen as a reenactment of the cyclical pattern described above. As recently as 1980, cocaine was described in the Comprehensive Textbook of Psychiatry, 3rd Edition, as a relatively safe, nonaddicting euphoriant agent (Ginspoon & Bakalar, 1980). Following historical precedent, published documentation of stimulant abuse failed to appear until premature or naive reports arguing the lack of abuse potential had proliferated (Gawin & Ellinwood, 1988; Schnoll, Karrigan, Kitchen, Daghestani, & Hansen, 1985; Siegel, 1985). This lag in literature pointing out the dangers of stimulant abuse contributed to and perpetuated a false sense of security with regard to the use of cocaine.
In the absence of clinical research on cocaine addiction, historical reports of cocaine dependence were dismissed, and the interpretation that cocaine is not addictive gained credence (Gawin & Ellinwood, 1988). Gawin and Ellinwood (1988) argue persuasively that the combination of the above factors created a transient illusion of safety. Believing it to be safe, use of cocaine exploded as millions of people experimented with the drug and became addicted.

As cocaine abuse and its associated social and medical consequences have become abundantly evident, media, political and scientific attention have been focused on drug abuse in general and cocaine abuse in particular. In a televised speech, President Bush lamented that "the gravest domestic threat facing our nation today is drugs" (McNulty, 1989). Researchers have concluded that cocaine is a serious threat to North American society because of the waste of human potential (NIDA, 1986).

Research by NIDA (1989a; 1989b) and the Department of Health and Human Services (DHHS; 1989) indicate that the total number of people using cocaine is actually declining. A recently released report by DHHS (1989) revealed that the number of current cocaine users decreased significantly from 5.8 million in 1985 to 2.9 million in 1988. Additional support for the notion that overall cocaine use is declining comes from the latest NIDA survey of college students one to four years beyond high school. Of those surveyed, 10%
reported using cocaine in the past year, a decline of 3.7% from 1987 (NIDA, 1989c). Similarly, of the high school seniors surveyed in 1988, 12.1% reported having used cocaine (NIDA, 1989d). This represents a decline of 3.1% from 1987, and a decline of 5.2% from 1985. The percentage of high school seniors who had used cocaine in the past year fell to 7.9% in 1988 from a level of 10.3% in 1987. Overall, the number of those surveyed in NIDA's household survey who used cocaine in the past year fell from 12 million to 8 million (NIDA, 1989b). It had been suggested that this overall decrease in the use of cocaine represents an increased awareness on the part of the public, and especially students, of the dangers of cocaine; and that people are avoiding its use (DHHS, 1989; NIDA 1988a). However, because of the highly illicit nature of cocaine in the United States, the available statistics regarding the usage of cocaine by Americans are likely to be underestimated.

Despite the encouraging downward trend in overall use of cocaine, there is considerable evidence that the intensity of cocaine use and the experience of adverse consequences among users of cocaine are actually increasing. Data from NIDA's Drug Abuse Warning Network (DAWN) reveal that the numbers of people admitted to emergency rooms following use of cocaine increased more than fivefold over the past five years (NIDA, 1988b; 1989e). Emergency room episodes related to crack have increased from 549 cases in 1984, to 15,000 in 1988. This
represents an increase of 28 fold. Cocaine use was related to 46,020 emergency room visits in 1988, up from 8,831 in 1984 (NIDA, 1989f). During this same time period, the number of people who died following the use of cocaine more than doubled (Adams, Blanken, Ferguson, & Kopstein, 1989). The trend toward more dangerous routes of administration (i.e., intravenous injection and free-basing) may be partly responsible for the increase in cocaine-related emergency room visits (Adams, et. al., 1989). The greater dosage reaching the brain very quickly from these methods of administration are responsible for both the more intense high and the greater risk of complications such as cardiac arrest and cardiovascular accidents.

NIDA's 1988 National Household Survey on Drug Abuse found continued intense use of cocaine within the cocaine user population. It was found that 862,000 persons used cocaine once a week or more, representing an increase of 33% in the number of persons using cocaine weekly compared to 1985 (NIDA, 1989b). This increase coincides exactly with the emergence of crack as a popular, lethal drug of choice in urban areas. The percentage of cocaine users who use the drug frequently (one or more times per week) has doubled since 1985 (DHHS, 1989). Nearly 300,000 persons use cocaine nearly every day (NIDA, 1989b). In most urban centers across the United States, cocaine-related violence and crime continue to be a serious problem (NIDA, 1989a). These data underscore the fact that
cocaine remains perhaps the most noteworthy and troublesome drug of concern throughout the United States (NIDA, 1989a).

Demographic Trends

Along with an alarming increase in the frequency of cocaine use and its associated problems, the 1988 NIDA survey also found a disturbing trend regarding who is using cocaine. Cocaine use was found to be highest among the unemployed, and those individuals between the ages of 18-25. The survey also estimated that 600,000 young people age 12-17 have used cocaine within the last year. While lifetime prevalence rates of cocaine use among blacks and whites remained stable, a significant increase, from 7% to 11%, was found for the Hispanic population between 1985 and 1988 (DHHS, 1989). In addition to this upsetting trend, the Hispanic population surveyed did not experience any decrease in current use of cocaine (i.e., use in the 30 days prior to the survey being conducted). It appears that cocaine continues to be a scourge for minority and lower socioeconomic populations, perhaps even more today than in the past, as the availability of cocaine has steadily increased while there has been a concomitant decrease in price.

Effects of Cocaine Use and Associated Problems

As Smith (1984) notes, cocaine has a high potential for adverse consequences and abuse. Cocaine creates in the user
an intense euphoria or high, stimulation, sense of well-being, heightened feelings of alertness, creativity and confidence (Horberg & Schnoll, 1983; Gold, 1984). The high is followed almost immediately be an equally intense "crash." This crash is characterized by extreme dysphoria, irritability, restlessness, lethargy and an inability to feel emotions (Gold, 1984). This cycle is especially intense and rapid with the use of crack, which underlies the exceedingly addictive nature of crack cocaine (Landry, 1986; Washton, 1986a).

The user of cocaine risks many negative physiological consequences in pursuit of the high. Some of these are very dangerous and potentially life threatening (Gold, 1984). Among these effects are insomnia, fatigue, nausea and vomiting, tremors, weight loss, fever, constipation, nasal stuffiness, and blurred vision (Spence, 1986). In large doses, cocaine can precipitate psychotic reactions, confusion, extreme agitation, delusions (especially paranoid delusions), and hallucinations, especially tactile hallucinations of "bugs" crawling on or beneath the skin (Corry & Ambolic, 1985; Gold, 1984). In addition to these physiological complications, death resulting from cocaine-induced heart attack, stroke, seizure, asphyxiation, and cocaine-related suicide are reported with alarming frequency (Corry & Ambolic, 1985).

The frequency with which cocaine users also use alcohol and other illicit drugs compounds the serious risks and
consequences facing these individuals. Data indicate that not only do cocaine users use other drugs, but they also use these drugs in combination with cocaine (Adams, et. al., 1987). For example, cocaine users may mix cocaine with heroin in the process known as "speedballing." It has been found that the concomitant abuse of alcohol, barbiturates and tranquilizers is an effort to relieve the insomnia, anxiety, and restlessness experienced by cocaine abusers. Heavy marijuana smoking is common, and use of heroin or other opiates is not unusual to counteract the side effects of the cocaine crash (Morgan, 1988).

Cocaine is also a frequent source of problems in daily living. Difficulties which have been attributed to cocaine abuse include problems in occupational functioning, familial and social relations, sexual dysfunction, marital discord, financial and legal problems, and a general eroding of the cocaine abuser's ability to function adequately (Gold, 1984; Smith, 1986, Washton, 1985).

The Question of Addiction

Central to an understanding of cocaine use and its devastating effects is the notion of its addictive potential. This has been a point of contention and confusion in the literature. The academic debate regarding the potential for addiction to cocaine continues, based on the criteria of
tolerance and a withdrawal syndrome. Many researchers have commented on the erroneous belief expressed in the literature in the past that cocaine is not physically addicting because of the absence of a well-defined withdrawal syndrome, which is clearly present with alcohol or barbiturate use (Corry & Ambolic, 1985; Gold, 1984; Smith, 1986). Considerable evidence has been accumulated which indicates the existence of tolerance to (Corry & Ambolic, 1985) and withdrawal from cocaine (Horberg & Schnoll, 1983; Washton, 1985).

There is a growing body of literature that clearly indicates that habitual users of cocaine develop a physical tolerance to the drug, in that they need increasingly larger doses to experience the same desired effect, which was previously experienced at a lower dose. Many abusers of cocaine will increase the frequency of use, dose, and or modify the route of administration to obtain a faster, more intense high (Gawin & Ellinwood, 1988). Unfortunately, while users often develop a tolerance to the cocaine high, there is no parallel tolerance to cocaine's effects on the body's cardiovascular system. As users combat the tolerance to the high, they increasingly risk damage to the heart and circulatory system (NIDA, 1986).

Withdrawal does ensue when the addicted person stops using cocaine. Withdrawal is characterized by profound depression, irritability, sleep disturbance (including extreme sleepiness and insomnia), loss of energy and intense craving.
for cocaine (Gold, 1984; Smith, 1986). More recent research has confirmed these findings. Gawin and Ellinwood (1988) reported that cocaine abstinence after prolonged use follows a three-phase course: crash, withdrawal, and extinction. The crash is described as an intense exhaustion that immediately follows binge use of cocaine. Initially, the cocaine addict experiences profound depression, agitation, and anxiety, followed by an increased desire for sleep approximately one to four hours after cessation of use (Gawin & Kleber, 1986; Kleber & Gawin, 1987). This is most often followed by prolonged sleep and, while awake, extensive eating. Mood may return to normal following prolonged sleep, although some dysphoric feelings may remain (Gawin & Ellinwood, 1988). The extinction phase involves episodic craving after the withdrawal period, which can remain for months or even years (Gawin & Ellinwood, 1988). These symptoms may also include decreased energy, decreased interest in the environment, and a limited capacity to experience pleasure (anhedonia). While withdrawal symptoms may be quite mild immediately following the crash, they increase in intensity during the next 12 to 96 hours (Gawin & Ellinwood, 1988). Currently, there is agreement within the drug treatment community that cocaine is addictive in that the drug creates in the user a compulsion for its use, loss of control, continued use in spite of severe and adverse consequences, an inability to function in the absence of the drug, and denial that any problem exists
It is clear that cocaine creates an overwhelming psychological dependence. Many users will lie, cheat, steal and commit other crimes and antisocial acts to obtain cocaine (NIDA, 1986).

The vicious cycle of cocaine addiction is all too often one from which the user is unable to extricate him or herself. Memories of cocaine-induced euphoria starkly contrast with the intense depression, anhedonia, craving, and other characteristics of withdrawal (Gawin & Ellinwood, 1988). The cocaine addict is powerfully motivated to resume use of cocaine, often at a higher, more dangerous dose. This is especially true for crack, because of the more potent, nearly instantaneous rush and equally potent and immediate crash (Washton, 1986a).

Intrinsic to the cyclical process described above is a two-step pattern. This pattern consists of 1) chasing the high, and 2) avoiding the crash (Reuss, 1985). The first step in cocaine use is chasing the high. The initial use results in the euphoric rush, sense of well-being, heightened feelings of alertness, creativity and confidence (Herberg & Schnell, 1983; Reuss, 1985; Siegel, 1984). However, these enormously attractive effects of cocaine are short-lived. Cocaine that is snorted produces a high within a few minutes that typically lasts from twenty to thirty minutes. Cocaine that is injected causes a significantly more immediate rush (fifteen seconds) which lasts from one to several minutes. Cocaine that is
smoked (free-base or crack) reaches the brain in much higher doses than when snorted, delivering a much more explosive rush approximately seven seconds after inhaling. This rush wears off in a matter of minutes (Gold, 1984; Morgan, 1988; Reuss, 1985; Spence, 1986).

The combination of the intensity and brevity of the cocaine high results in a compulsion to use again to attain that altered state of consciousness. However, because of increased tolerance, greater dosage will be required. The inevitable second step of this pattern emerges. The individual now uses cocaine to avoid the crash. Rather than using cocaine in pursuit of euphoria, the individual ultimately uses in an effort to flee the intolerable feelings of the crash and withdrawal (Morgan, 1988; Reuss, 1985).

Public Response to Cocaine Epidemic

It seems that not a newscast or newspaper edition passes that does not contain a story that addresses America's "war on drugs." Polls reflect the increasing distress with which the public views the drug problem. Public perceptions of crack epidemics, cocaine-related deaths, violence and crime, and an emerging notion of cocaine as an addictive agent have fueled the urgency for federal action. In communities across the United States, people are assuming an increasingly active role in the fight against cocaine and other drugs. In Chicago, two
catholic priests have received national attention for their efforts to combat drugs. In Kansas City, activists hold vigils outside suspected crack houses in order to pressure drug users out of their neighborhood (Shapiro, 1989). Many cities and towns are teaming up community, civil and church organizations, local police forces, educators and businesses in efforts to eliminate drugs. In Oakland, a federation of church and community groups notified police of suspected crack houses. The police, in turn, thoroughly inspected the houses for possible code violations in hopes of shutting them down. The American public has been awakened to the horrors associated with cocaine use. It is hoped that an increasingly aware and active public will hasten a decrease in the number of persons who continue to risk the ravages which cocaine visits upon users of the drug.

Treatment of Cocaine Abuse

Given the increased awareness of and continued problem with the severe negative consequences of cocaine abuse, it is not surprising that there is a great demand for the treatment of cocaine addiction. Since 1981, data collected by NIDA reflect continuing increases in admissions to cocaine treatment programs (Adams, Gfroerer, Rouse, & Kozel, 1987). Recently, President Bush has proposed a $321 million increase in the funds allocated for drug treatment programs. President Bush went on to say that today, the most serious drug problem
is cocaine, especially crack, and that more treatment programs are needed to deal with cocaine abuse (McNulty, 1989).

Despite the clamor for an increase in the number of treatment facilities, the efficacy of treatment continues to be of great interest to those delivering and paying for treatment of cocaine addiction (Woody, McLellan, Lubursky, & O'Brien, 1986). An article in the Wall Street Journal reported that many businesses are cutting drug treatment benefits due to the enigmatic nature of treatment for addictions and the enormous expense incurred in the process (Pereira, 1989). In essence, it seems that those responsible for paying for treatment of addiction are finding that employees and dependents are seeking help in greater numbers with questionable results (Pereira, 1989).

There are many approaches to the treatment of cocaine abuse, and no single approach can claim to be the definitive or best choice. In fact, single-focus treatment approaches generally are ineffective (Millman, 1988). Rather, integration of various approaches based on the individual's needs and the extent of the problem seems warranted (Kleber & Gawin, 1985; Morgan, 1988). Treatment approaches center around the need first to help the abuser achieve abstinence from cocaine and all other drugs, including alcohol. Throughout the course of treatment, efforts are also focused on helping the cocaine abuser to understand his/her use of cocaine, to identify required life changes (Ehrlich &
McGeerham, 1985; Siegel, 1985), to help the individual develop alternatives to cocaine use, to ameliorate problems secondary to cocaine use, to develop and maintain social and peer support groups (Millman, 1988), and to prevent relapse (Horberg & Schnoll, 1983; Millman, 1988; Morgan, 1988; Resnick & Resnick, 1985).

Treatment of cocaine abuse can be offered on an inpatient or outpatient basis. Structure seems to be an extremely important component in the successful treatment of cocaine abusers. The formidable challenge to outpatient treatment is to create that structure and to foster in the individual a willingness to utilize it (Zweben, 1986). If an individual is without reliable supports and resources such as drug-free family and friends, a good job, and self-esteem, then inpatient treatment may be the preferred route (Millman, 1988; Morgan, 1988). Zweben (1986) has enumerated other indications for inpatient treatment. She proposes that it can serve as a launching platform for long-term recovery, or as the sole vehicle of treatment. Individuals who are homicidal or suicidal require inpatient treatment. Some abusers will experience a cocaine-induced psychosis, which clears quickly once use of the drug is terminated. However, during the time that the individual is acutely psychotic, an inpatient setting is advised. Inpatient treatment is also indicated when the cocaine abuser experiences severe depressive states or extreme debilitation (Millman, 1988). It has been suggested that
users of crack cocaine must be treated initially in a hospital inpatient setting in order to evaluate the individual's physical and psychological condition, as well as to ensure that the drug is not available during the intense craving and withdrawal period following detoxification (Morgan, 1988).

Inpatient treatment can be conducted in a hospital setting or residential setting, such as a therapeutic community. In therapeutic communities, cocaine abusers live in a highly structured environment and share responsibilities for running the community (e.g., cooking, cleaning). These therapeutic communities are full-time, drug-free environments which provide peer support and counseling to assist the individual in abandoning antisocial and destructive patterns of living. Inpatient treatment is frequently followed by outpatient follow-up to assist the abuser of cocaine in maintaining abstinence, effecting necessary life changes, and increasing self-understanding (Kleber & Gawin, 1985; Millman, 1988; Morgan, 1988). Both inpatient and outpatient treatment approaches often are used in the long-term struggle against cocaine abuse.

As noted, cocaine abusers most often use other drugs concomitantly with cocaine. If multiple drug dependencies are present, especially involving heavy alcohol and/or sedative use, a medical setting is indicated (Zweben, 1986). When an individual has experienced repeated failures with outpatient treatment, inpatient treatment should be considered (Zweben,
1986). Zweben (1986) notes that some individuals may be incapable of resisting the craving for cocaine, or are unable to eliminate easy access to the drug. If such is the case, a period of time in a residential setting can prove helpful. Millman (1988) relates that inpatient treatment may be necessary to interrupt a living situation which in some way reinforces continued drug use (i.e., the individual lives, works, or socializes with others who use cocaine).

A multiplicity of therapeutic orientations and techniques have evolved with regard to the treatment of cocaine abuse. These include psychotherapy (Millman, 1986; Resnick & Resnick, 1985; Rounsaville, Gawin, & Kleber, 1985; Schiffer, 1988; Woody, McLellan, Lubursky, & O'Brien, 1986; Wurmser, 1985); contingency contracts (Anker & Crowley, 1981; Magura, Casriel, Goldsmith, Strug, & Lipton, 1988); and 12-step programs such as Cocaine Anonymous and Alcoholics Anonymous (Millman, 1988; Muhleman, 1987; Wallen, Weiner, Mansi, & Deal, 1987).

Some treatment programs utilize pharmacologic interventions, especially in the beginning stages of treatment. Millman (1988) notes that pharmacologic intervention can be helpful in enhancing an effective therapeutic alliance and bolstering an abuser's resolve by alleviating painful symptoms of cocaine intoxication and withdrawal. Some of the severe symptoms experienced by cocaine abusers include agitation, anxiety, paranoia, and psychotic disorders (Millman, 1988). Millman (1988) argues
that reducing these symptoms removes a potent reinforcer for the resumption of drug use, and increases the likelihood that the patient will view the therapist as an advocate. However, Millman (1988) cautions that pharmacologic measures must not be viewed as curative. Because cocaine abusers have pursued pharmacologic solutions to problems and needs in the past, it must be made abundantly clear to the abuser that medication is only one element in a comprehensive plan. He further cautions that drugs with high abuse potential such as benzodiazepines or tricyclic antidepressants with powerful sedative properties, should be avoided.

There seems to be agreement that pharmacologic intervention is appropriate in several instances. It can be helpful to treat the acute, intensely negative sequelae of cocaine, such as depression, anxiety, psychotic symptoms, and sleep disturbance. Because of its debilitating effects, associated psychopathology may serve as reinforcement for the use of cocaine with some individuals. In such cases, pharmacologic intervention is indicated. Other appropriate reasons for pharmacologic intervention are to prevent the euphoric effects of cocaine use and to mitigate the craving for cocaine (Gawin & Kleber, 1986; Millman, 1988; Morgan, 1988).

Relapse

Relapse refers to the process resulting in a return to
drug use after a period (usually of several weeks or more) of abstinence (Washton, 1988). Relapse has traditionally been the nemesis of treatment for all chemical dependence problems, including cocaine (Washton, 1988). The ubiquitous problem of relapse calls into question the efficacy of cocaine abuse treatment and is the source of enormous frustration for those involved in the treatment effort. The problem of relapse tends to be misunderstood. Relapse is an avoidable process complete with warning signs, not an inevitable, instantaneous event. The return to full-blown use is the end result, not the trigger of relapse (Washton, 1988).

Relapse is not indicative of treatment failure. Rather, it is a signal that recovery is not yet complete and should be approached as a valuable learning experience. The problems that emerge over the course of treatment may increase the likelihood of relapse. Washton (1988) notes that these problems are to be expected in the treatment of cocaine abuse. Individuals may self-sabotage, putting themselves in high-risk situations where they will be exposed to cocaine (i.e., continuing to socialize with friends who use cocaine). The cocaine abuser in treatment may feel cured after a period of abstinence and test his/her ability to control use of cocaine. Negative moods such as boredom, unhappiness, and irritability often function as precursors to relapse. Cocaine abusers often require assistance in identifying and combatting euphoric recall, which is the phenomenon in which the
individual selectively remembers only the positive experiences and aspects of cocaine use (Millman, 1988; Washton, 1988).

As noted, some individuals believe that abstinence equates complete recovery. In these cases, the abuser may not make any fundamental changes in his/her way of living, continuing to behave in a self-defeating and maladaptive manner. These individuals bear an enormous potential for relapse (Washton, 1988).

A growing number of researchers and clinicians conceptualize a two stage relapse process. In the first stage, the abuser experiences a "slip" or lapse following a period of abstinence (Marlatt & Gordon, 1985). When the lapse occurs and abstinence is violated, the individual usually experiences an array of feelings which collectively have been referred to as the Abstinence Violation Effect (AVE; Marlatt & Gordon, 1985). The AVE may include feelings of guilt, personal weakness, helplessness, victimization, profound failure, a sense that all progress to date is nullified, and the expectation of continued failure (Washton, 1986b). The occurrence or nonoccurrence of the second stage of relapse is primarily dependent upon the AVE and associated attributions concerning the cause of the lapse (Saunders & Allsop, 1987). This second stage (i.e., the full-blown relapse) is the resumption of use at a level similar to that level of use prior to the period of abstinence (Marlatt & Gordon, 1985).

The severity of the AVE is determined in large part by
the types of attributions regarding the cause of the slip which the patient makes. Washton (1986b) relates that certain attributions are characteristic of the AVE, exacerbate the negative reactions which constitute the AVE, and make continued abstinence even more difficult. It is for this reason that a consideration of the process of causal attribution is central to an understanding of the relapse process.

Attribution Theory

At its most basic level, attribution theory attempts to explain the ways in which people attribute behavior to particular causes; it is a collection of ideas about when and how people generate causal inferences (Fiske & Taylor, 1984). Attributions are important because they provide the foundation for future judgments, feelings, and behavior (Fiske & Taylor, 1984). The manner in which people construct and utilize causal attributions to a great extent determines perceptions of reality, and ultimately forms the basis from which people operate.

Attribution theory has been the focus of a great deal of research since the 1970's. Applications of attribution theory have included studies of causal attribution and achievement, sex stereotyping, prejudice, and helping (Fiske & Taylor, 1984). Fiske and Taylor (1984) note that, more recently, attribution theory has been applied to clinical topics such as
therapy and chemical and behavioral addictions. Within the realm of addiction, causal attributions have been posited to play an integral role in the phenomenon of relapse.

**Relapse and Attribution of Causality**

Marlatt and Gordon (1985) argue that the manner in which an addict attributes the cause of the lapse will determine whether or not the lapse will develop into a relapse. The argument follows that the severity of the AVE is directly related to the manner in which the individual attributes the cause of the lapse (Marlatt & Gordon, 1985; Washton, 1986b). The more severe the AVE, the more likely it is that a full-blown relapse will ensue; hence the relationship between the attributions and the probability of escalation to relapse. It should be noted that the AVE occurs in degrees; it is not an all or none phenomenon. One individual may experience the AVE as a nagging frustration, another as complete devastation.

In general, it is suggested that when an individual attributes the cause of a lapse to internal, stable, global factors that are perceived to be uncontrollable, an AVE of increased severity will result (Marlatt & Gordon, 1985). Internal factors focus upon the individual's own behavior and characteristics, while external factors are located in the environment or in others. Stable factors are identified as long-term or recurrent, whereas unstable factors are short-term or intermittent. Global factors are those which affect
a wide variety of outcomes across different situations, while specific factors do not (Abramson, Seligman, & Teasdale, 1978). However, the intensity of the AVE is mitigated when the individual attributes the cause of a lapse to external, unstable (i.e., changeable), and specific factors that are perceived to be under one's control. Examples of internal, stable, global attributions include the view of a lapse as resulting from lack of willpower, or that one is a bad person, incapable of solving problems. An example of external, unstable, specific attributions are a momentary difficulty in coping in a specific, high risk, stress-provoking situation, or simply being in the wrong place at the wrong time.

There is evidence that individuals with other forms of addictions do indeed make these types of attributions. O'Connell and Martin (1987) found that, compared to individuals who experienced only a temporary lapse after a period of abstinence from smoking, those who experienced full-blown relapse were more likely to make internal attributions and less likely to make external attributions. McCormick and Taber (1988) studied attributional styles in pathological gamblers. They found that attributional style utilizing internal, stable, global causes for negative events made a significant contribution to the prediction of the severity for gambling six months post treatment.

The Attributional Process
Given that the putative role of the AVE in relapse hinges on attributions of causality, an important question to be considered is whether or not people typically make causal attributions spontaneously in everyday living. It had been argued that the research indicating that people do make causal attributions was an artifact of the research. That is, it was argued that causal thoughts were elicited by research procedures rather than emitted spontaneously (Bem, 1972; Engle & Shopflocher, 1978; Wortman & Dintzer, 1978). However, Weiner (1985) reviewed research which looked for causal attributions in ways which the design of the study could not elicit them. Weiner unequivocally concluded that people do in fact make spontaneous causal attributions. The following are examples of methodologies utilized to demonstrate spontaneous causal attributions without the attributions having been elicited.

Weiner (1985) reviewed research in which written material such as advice columns, newspaper reports of political elections and sporting events, and corporate annual reports were examined for the presence of causal attributions. In all, Weiner (1985) reviewed six studies in which written material was examined. In his summary of the literature, he notes that the researchers using these methods did indeed find a great deal of causal attribution. Research conducted by Bettman and Weitz (1983) is an interesting example of the work done using written materials. These authors examined
corporate annual reports from two years: one of economic prosperity and one of economic decline. Instances of causal reasoning were identified as a phrase or sentence which linked some performance outcome with an explanatory reason. Bettman and Weitz (1983) identified an average of 2.33 causal attributions per report, and found that most causal reasoning was displayed when companies performed worse or better than anticipated.

Another method Weiner (1985) reviewed was the coding of verbalizations. These studies ranged from randomly recording conversations in which the participants were unaware that they were being listened to or recorded (Weiner does note the questionable ethics of such procedures) to examining causal verbalizations during task performance. In all of these studies, responses are free to vary and are not directed toward causal attribution. Consistent with the research on written material, Weiner (1985) notes that this methodology also yielded abundant support for spontaneous causal attributions. Gioia and Sims (1983) studied causal verbalizations during task performance in an effort to overcome the problems associated with reactivity of methodology. The procedure was to have volunteers play the roles of a manager and an employee in a performance evaluation of the employee. The subjects were provided information regarding the employee's performance and work history. Results indicated that subjects role-playing managers asked
questions which elicited attributions. Subjects role-playing employees tended to make frequent attribution statements. These findings were especially evident in the case of failure.

A final method reviewed involved indirect attributional indexes. Experimenters assessed indexes presumed to be influenced by causal attributions. These included selection of information, free recall and the content of sentence completions. Subjects were presented with a story or information about a person, then given additional information about some trait or behavior. Causal attributions were indexed in the various studies by allowing subjects to choose additional information (Pyszczynski & Greenberg, 1981), by asking subjects to retell a story (Clary & Tesser, 1983), or by asking subjects to generate sentence completions (Hastie, 1984). In Hastie's (1984) work, subjects were presented with a description of a person and a set of behaviors that were incongruent or congruent with the description (e.g., an intelligent person plays chess poorly). Following a pairing of each description and behavior, subjects were asked to generate sentence completions. In 24 percent of the completions, subjects included a causal attribution, a finding more likely when the behavior was incongruent with the description provided than when there was congruency between the description and behavior (Hastie, 1984). Weiner (1985) summarized that subjects often sought attribution-relevant information, included explanations for behavior when retelling
stories which were not part of the original story, and completed sentences with causal explanations.

A review of the literature on attributions and attribution theory revealed an absence of research addressing attributions for hypothetical or imagined events. Although there is no reason to suspect that the findings from research reviewed by Weiner (1985) would differ significantly if research designs employed hypothetical events, empirical investigation of this issue would provide a useful addition to the body of literature on attributional processes.

In summary, Weiner (1985) reviewed 17 publications investigating spontaneous, causal attributions. Every publication reported substantial evidence to support the occurrence of spontaneous causal attribution. Harvey, Weary, and Stanley (1985) concur with Weiner's conclusion, stating that attribution is a pervasive activity in daily living.

Weiner's review of the research revealed other noteworthy findings of spontaneous attributions which seem particularly relevant to the issue of relapse. Weiner (1985) concludes that spontaneous causal attributions are especially probable when an individual encounters an unexpected event, an unsuccessful event or failure, or when an event holds much importance for the individual. Anderson and Arnolt (1985) also note that people do not generate causal explanations or attributions for every observation. Rather, people are much
more likely to do so when events are concrete, important, unusual, or surprising. For example, in the studies that Weiner (1985) reviewed, causal search was increasingly elicited when subjects were faced with information incongruous with what was already known about a person, such as an unusual willingness or unwillingness to help, inconsistent behavior, or unexpected academic success or failure. Unexpectedly good or poor performance by sports teams or companies also elicited increased causal search (Weiner, 1985). Fiske and Taylor (1984) summarize by stating that causal analysis assumes greater importance when people are surprised or threatened by events that undermine their beliefs and expectations. Relapse to cocaine use can certainly be regarded as an unsuccessful event of much importance. Additionally, there is also speculation that relapse is an unexpected event as well (Washton, 1986b).

Fiske and Taylor (1984) note that there are pervasive biases and errors that often prevent individuals from accurately perceiving the causes of events. The fundamental attribution error is the tendency to attribute another person's behavior to his or her own dispositional (internal) qualities, rather than situational factors, which may be minimized or ignored completely as causal factors. Individuals who suffer some misfortune may be held more accountable for an outcome than they should be. The actor-observer effect dictates that, while we may see our own
behavior as quite variable, behavior of other persons is seen as cross-situationally stable (Fiske & Taylor, 1984). Finally, self-serving biases can result in an individual taking credit for a successful or desirable outcome, but placing responsibility for a negative outcome on situational factors (Fiske & Taylor, 1984).

Rationale

Cocaine abuse continues to be a major health and societal problem in the United States. As with other addictions, treatment of cocaine abuse is burdened with the necessity of confronting and managing relapse. Because relapse is such an important component of the broader picture of treatment, efforts to understand, manage, and prevent relapse more completely and effectively are clearly warranted. The role of attributional search in the relapse process is one area that has received attention in the last several years. However, the body of literature on cocaine abuse treatment and relapse is in need of closer, empirical examination of the potential role and importance of causal attribution.

Efforts to make causal attributions by cocaine abusers who experience a lapse can be viewed as the individual's attempt to understand the lapse, and as an attempt at adaptation. As Weiner (1985) reminds us, the "Law of Effect" dictates that individuals are motivated to terminate or prevent negative experience. In order to effectively cope
with the negative experience of relapse, the individual must locate its cause(s). Attributional search serves this purpose, and thus can be seen as an adaptive, hedonic function. It is intricately related to the process of relapse. Unfortunately, because of the complexity of real world events and the frequent need to meet conflicting goals (e.g., identify causes, protect self-esteem), attributions often will not be accurate or particularly adaptive (Harvey, et. al., 1985). Despite the potential for inaccuracy, people generally behave according to their perceptions and understandings.

In light of research indicating that people make causal attributions when faced with unexpected, unsuccessful, and concrete events, it would be interesting to determine the types of attributions which individuals make when presented with hypothetical situations involving the temptation to use cocaine following a period of abstinence. The nature of these attributions and their relationship to relapse remain in question. It may be, with regard to relapse to cocaine use following a period of abstinence, that individuals attribute this to internal, stable, global factors that are beyond one's control. These types of attributions have a significant effect on the severity of the AVE and the problem of relapse, therefore, it has been argued that one important aspect of treatment is to inoculate addicts against these attributions (Washton, 1986b). If indeed this phenomenon is present in the
relapse process, then research efforts to identify more clearly and to understand it are needed. Because attributional (cognitive) style is a dimension potentially amenable to psychological intervention (McCormick & Taber, 1988), research efforts in this area may ultimately impact favorably on treatment efforts. If the nature of causal attributions for hypothetical relapse scenarios can be clarified, then focal points for future research with cocaine dependent persons may be provided. Research findings could eventually be brought to bear in the effort to disrupt the AVE, and to mitigate the potential damage from attributions which are hypothesized to propel the patient further down the path toward full-blown relapse.

As an initial step toward investigating these issues with cocaine dependent persons, it would be helpful to explore the extent to which such attributions are present in nondependent persons. Such an investigation would be useful to provide data against which findings from future research with persons in treatment for cocaine dependence could be compared, and to suggest important points of focus for continued research.

Various self-serving biases suggest that nondependent persons will make attributions which deny responsibility for relapse, but take credit for maintenance of abstinence in hypothetical situations where the temptation to use cocaine is strong. If the expected patterns of causal attribution are supported by the data, this would be evidence that internal,
stable, and global patterns of causal attribution regarding relapse may be intimately related to the actual experience of relapse. This would suggest that the consequences of use are perhaps sufficiently intense to negate the effects of the fundamental error, actor-observer effect, and self-serving biases (i.e., the dependent person may be found not to utilize self-serving biases in causal attributions for relapse like nondependent persons do).

Additionally, it would be useful to examine the nature of attributions which nondependent persons make about a cocaine-dependent person's actual experience of relapse. The fundamental attribution error (the tendency to attribute another person's behavior to dispositional factors which do not change) and the actor-observer effect (the tendency to see other person's behavior as cross-situationally stable) both suggest that nondependent persons would attribute another person's relapse to internal, stable, and global factors (Fiske & Taylor, 1984). If these biases appear to be present in a nondependent sample, it would suggest the importance of assessing the presence of similar attitudes and attributions made individuals receiving treatment for cocaine dependence. Individuals who are in treatment following a relapse may have to contend with the slip being seen by others as resulting from an individual's weakness or other faults, to the exclusion of potentially important situational factors. The present study is an attempt to begin to address some of these
issues regarding causal attributions of relapse.

**Hypotheses**

The intent of this study will be to examine the nature of causal attributions made by nondependent persons who imagine themselves in hypothetical situations involving the temptation to use cocaine following a period of abstinence. Attributions for another person's relapse will also be assessed. The hypotheses of the proposed study are as follows:

**Hypothesis I.** When imagining themselves in hypothetical, high temptation situations, subjects will make internal, stable, and global attributions most often for given outcomes of abstinence, next most for outcomes of a slip followed by abstinence, and least often for outcomes given as relapse.

**Hypothesis II.** When considering a vignette describing another person's behavior in a situation where the temptation to use cocaine is high, subjects will utilize internal, stable, and global attributions most often to explain outcome of relapse, next most for outcome given as slip followed by abstinence, and least for outcome of abstinence.

**Hypothesis III.** Depressed subjects will utilize significantly more internal, stable, and global attributions to explain one's own hypothetical relapse than nondepressed
subjects. Nondepressed subjects will utilize significantly more internal, stable, and global attributions to explain one's own ability to abstain from using cocaine in a highly tempting hypothetical situation.
METHOD

Participants in this study were 46 volunteers from undergraduate introductory psychology classes at a large, urban university in the Chicago metropolitan area. Subjects received extra credit for their participation. The mean age of the subjects was 18.1 years and the range was from 17 to 21. Twenty-six (56.5%) of the subjects were female and 20 (43.5%) were male. Most of the participants were Caucasian (76.1%), while 23.9% were from three ethnic minority groups (4.3% African-American, 8.7% Hispanic, and 10.9% Asian). With regard to socioeconomic status, the main wage earner of the participant's household was a professional for 26.1% of the sample, a manager or owner of a large business for 17.4%, an administrator or owner of a small business for 23.9%, a clerical, salesworker, or technical worker for 23.9%, and a semi-skilled or unskilled laborer for 8.7%. The highest level of education obtained by the main wage earner of the household for this sample was as follows: 23.9% graduate education, 21.7% college degree, 19.6% one or more years of college without a degree, 26.1% high school diploma, 6.5% some high school, and 2.2% grade school diploma. Subjects came from households ranging in number of persons from 2 to 8, with a mean of 4.3.
setting

The study was conducted on the campus of a large, urban university in the Chicago metropolitan area. Subjects were asked to complete a battery of questionnaires in a room large enough to ensure privacy and confidentiality for 1-10 subjects.

Measures

Demographic Questionnaire (DQ)

The Demographics Questionnaire (DQ; Hollingshead, 1958) is a frequently used measure in psychological research designed to gather information on the age, sex, marital status, educational level, and occupation of the main provider in the family. According to Lorion (1974), this measure is the most commonly used instrument for determining the socioeconomic status of an individual in psychotherapy research. The DQ is presented in Appendix A.

Drug Use History Questionnaire (DUHQ)

A comprehensive drug use history questionnaire was developed specifically for this study. This measure provides information regarding the use of recreational drugs, context of drug use (e.g., social setting, alone), and other factors relevant to the use of recreational drugs, specifically cocaine. A copy of the DUHQ is presented in Appendix B.
Beck Depression Inventory (BDI)

The Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979) is one of the most commonly used self-report measures of depression (Knight, 1984). In its standard form, the BDI comprises 21 items chosen to assess the presence and severity of depression. The items reflect the attitudes, behaviors, and affect commonly manifested by clinically depressed patients. Respondents indicate on a scale from 0-3 the presence and severity of each item presented, with 0 indicating an absence of a particular symptom. Items are summed producing a range of 0-63, with higher scores reflecting greater severity of depression.

Split half reliability ranges from .78 to .93. Test-retest reliability ranges from .48 for psychiatric patients at three weeks to .74 for undergraduate students at three months (Corcoran & Fischer, 1987). The BDI correlates significantly with clinicians' ratings of depression, ranging from .61 to .66, and was found to have a correlation with the Hamilton Rating Scale Study of .82 (Beck & Beck, 1972). Measures of internal consistency yielded an alpha coefficient of .86 (Beck & Steer, 1984). A copy of the BDI is presented in Appendix C.

Minnesota Multiphasic Personality Inventory - 2 (MMPI-2)

The MMPI-2 is a test designed to assess a number of the major patterns of personality and emotional disorders
The test consists of 567 statements to which the subject responds true if the statement applies to him/herself, or false if the statement does not. The MMPI-2 was standardized on a sample of 2,600 adults (1,138 males and 1,462 females). This sample is representative of the population of the United States in terms of geographic location, ethnicity, race, age (18-84), education, marital status, employment status, and income level (Hathaway & McKinley, 1989). Retest coefficients for the three validity scales and ten clinical scales range from .58 to .92 (mean = .79). Internal consistency estimates using Cronbach's coefficient alpha range from .34 to .85 (mean = .66).

Pier Cocaine Relapse Attributional Style Questionnaire (PCRASQ)

This questionnaire is an adaptation of the Attributional Style Questionnaire (ASQ; Peterson, Semmel, von Baeyer, Abramson, & Metalsky, 1982). The PCRASQ is closely patterned after a version of the ASQ used in the study of relapse involving the use of cigarettes (Curry, Marlatt, & Gordon, 1987). The ASQ is a tool for assessing habitual tendencies in the attribution of causes. It has been used in research on depression (Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982) and addictions (Curry, Marlatt, & Gordon, 1987; McCormick & Taber, 1988). The ASQ asks subjects to decide on the one major cause of an event, and to rate this cause on a
7 point Likert scale along attributional dimensions of "internality," "stability," and "globality." Composite scores are created by summing the items in the composite and dividing by the number of items in the composite. A higher score indicates attributions which are more internal, stable, and global. The present version of the ASQ consists of a prospective component, which is described below.

Peterson et al (1982) conclude that "... the ASQ has considerable construct, criterion, and content validity." Research has found that ASQ scores predict depression in college students and correlate positively with therapists' ratings of client depression. Subjects who scored high on the stability dimension showed helplessness which persisted for three days, and subjects who scored high on the globality dimension showed helplessness for dissimilar tasks. Test-retest correlation at five weeks for composite ASQ scores was .64 ($p<.001$) for bad events and .70 ($p<.001$) for good events. Test-retest correlations for individual dimensions ranged from .57 to .69 ($p<.001$). Internal reliability of each subscale, estimated using Cronbach's (1951) coefficient alpha, was .75 (good events) and .72 (bad events).

A content analysis of this measure was conducted in which several experts in the field of substance abuse treatment rated the items comprising the measure for relevance, clarity, and ratability on a scale from 4 (excellent) to 1 (poor). Those items receiving a rating of 1 or 2 were dropped or
amended according to raters' comments.

Subjects are instructed to imagine vividly a situation in which they are tempted to use cocaine. Six hypothetical situations are presented three times, each with a different outcome. The three outcomes are continued abstinence, a slip followed by resumed abstinence, and a slip followed by a "full-blown" relapse. The six hypothetical situations include feeling depressed, being at a party where cocaine is available, having an unpleasant experience with an employer, being bored, having an argument with a significant other, and receiving a long-desired promotion at work (note that this last case differs from the others in that it is a positive event).

Subjects are then asked a series of questions, which begin with an open-ended request to report the one major cause for the outcome. Subjects then assign attribution scale ratings related to the cause identified. These ratings index the degree to which the cause was: 1) due to the subject (internal) or due to others or circumstances (external); 2) likely to be present in the future or not (stable or unstable); and 3) likely to influence other areas of the subject's life (global) or likely to influence only cocaine abuse (specific). This rating index uses a seven point scale, with seven (7) being the most internal, stable, and global rating of causal attribution, and one (1) being the least (i.e., most external, unstable, and specific). A total score
is then derived by adding together the scores from each attribution question answered. Higher scores indicate an attributional style characterized more by an emphasis on internal, stable, and global dimensions, and lower scores indicate an attributional style characterized by a greater reliance on external, unstable, and specific dimensions.

Finally, subjects are presented with a vignette depicting another person's experience with the temptation to use cocaine after a period of abstinence. As before, subjects are presented with three different outcomes (abstinence, slip followed by abstinence, and slip followed by full blown relapse). Subjects are asked to write down the one major cause of the outcome, and to assign the attributional scale ratings to the identified cause. A copy of the prospective PCRASQ is presented in Appendix D.

Procedure

Prospective participants were introduced to the experimenter, a white, male, graduate student in clinical psychology from Loyola University of Chicago. Reading from a script (see Appendix G), the experimenter presented the study as a preliminary investigation into the issue of relapse to cocaine use. Those willing to participate were asked to sign an informed consent. A copy of the informed consent form is presented in Appendix E. Subjects were encouraged to submit questions regarding the study at the conclusion of their
participation, at which time subjects were debriefed. Subjects were told they could discontinue participation at any point if they desired to do so.

To maintain confidentiality, participants were instructed not to put their names or any other identifying information on the questionnaires. Only the experimenter had contact with the participants regarding this study. Data collection was conducted in a manner to ensure that participants had adequate privacy when completing the measures. After participants signed the informed consent, they were administered the DQ, DUHQ, BDI, PCRASQ, and MMPI-2.

Debriefing

Subjects were given a written debriefing statement upon the conclusion of their participation in the study. Questions concerning the study were addressed at this time. A copy of the debriefing statement is presented in Appendix F.
CHAPTER III
RESULTS

Demographic Variables and Attributional Processes

Among the demographic variables investigated, age, sex, occupation of main wage earner, and educational level of main wage earner were not related in a systematic way to attributions for the various outcomes and situations. Only race had a discernible effect on attributions of causality for the various outcomes as measured by the PCRASQ, although these effects do not comprise a cohesive pattern. One-way, fixed effects analysis of variance (ANOVA) resulted in a significant difference among racial groups for stable attributions made for self in the slip outcome of the PCRASQ ($F (3, 42) = 8.87$, $p < .0001$), (see Table 1).

Scheffe post-hoc analysis indicated that Black subjects differed significantly from White, Hispanic, and Asian subjects. Black subjects, on average, made the least stable attributions for self in the slip outcome ($M = 1.40$), compared to attributions of White subjects ($M = 5.09$), Hispanic subjects ($M = 4.58$), and Asian subjects ($M = 4.04$).

One-way ANOVA resulted in significant differences among racial groups for internal, stable, global, composite attributions made for self in the relapse condition of the PCRASQ ($F (3, 42) = 4.18$, $p < .025$), (see Table 2). Scheffe post-hoc analysis indicated that Black subjects and White...
## TABLE 1

One-way Analysis of Variance
with Race as the Independent Variable and Stable Attributions (Self) as the Dependent Variable

<table>
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<td>Within Groups</td>
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<th>SD</th>
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<tbody>
<tr>
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<td>slip (self)</td>
<td>1.40</td>
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<tr>
<td>White</td>
<td>&quot;</td>
<td>5.09</td>
<td>1.01</td>
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<tr>
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<td>4.58</td>
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<tr>
<td>Asian</td>
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<td>4.04</td>
<td>0.62</td>
</tr>
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</table>

*** p < .0001

Means and standard deviations given for groups for which Scheffe post-hoc analysis resulted in significant differences.
### TABLE 2

One-way Analysis of Variance
with Race as the Independent Variable and Composite Attributions (Self) as the Dependent Variable

<table>
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<td>White</td>
<td>&quot;</td>
<td>4.75</td>
<td>0.56</td>
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</table>

* p < .025

Means and standard deviations given for groups for which Scheffe post-hoc analysis resulted in significant differences.
subjects differed significantly, with White subjects ($M = 4.75$) making more internal, stable, global composite attributions than Black subjects ($M = 3.50$).

One-way ANOVA also revealed significant differences among racial groups for stable attributions made for another person in the vignette condition of the PCRASQ ($F (3, 42) = 5.35, p < .005$), (see Table 3). Scheffe post-hoc analysis indicated that Asian subjects differed from both White and Hispanic subjects on this dimension. Asian subjects made less stable attributions than other racial groups (Asian $M = 4.75$; Black $M = 5.50$; White $M = 6.26$; Hispanic $M = 6.50$).

One-way ANOVA resulted in differences among racial groups also for internal, stable, global composite attributions made for another person in the vignette, relapse condition of the PCRASQ ($F (3, 42) = 3.61, p < .025$), (see Table 4). Scheffe post-hoc analysis indicated that White subjects ($M = 5.58$) made significantly more internal, stable, global composite attributions than Asian subjects ($M = 3.90$) when asked to explain another person's relapse.

One-way ANOVA revealed differences among racial groups for composite attributions made for another person in the vignette, slip condition of the PCRASQ ($F (3, 42) = 3.22, p < .05$), (see Table 5). Scheffe post-hoc analysis determined that White subjects ($M = 5.24$) made significantly more internal, stable, global composite attributions than Asian
### TABLE 3
One-way Analysis of Variance
with Race as the Independent Variable and Stable Attributions (Vignette) as the Dependent Variable

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<td>Total</td>
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<table>
<thead>
<tr>
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<th>Outcome</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>relapse (vignette)</td>
<td>6.26</td>
<td>0.71</td>
</tr>
<tr>
<td>Hispanic</td>
<td>&quot;</td>
<td>6.50</td>
<td>0.58</td>
</tr>
<tr>
<td>Asian</td>
<td>&quot;</td>
<td>4.75</td>
<td>0.96</td>
</tr>
</tbody>
</table>

*** p < .005

Means and standard deviations given for groups for which Scheffe post-hoc analysis resulted in significant differences.
### TABLE 4

**One-way Analysis of Variance**  
with Race as the Independent Variable and Composite Attributions (Vignette) as the Dependent Variable

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>4.6021</td>
<td>3.61 **</td>
</tr>
<tr>
<td>Within Groups</td>
<td>42</td>
<td>1.2748</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>Outcome</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>relapse (vignette)</td>
<td>5.58</td>
<td>0.96</td>
</tr>
<tr>
<td>Asian</td>
<td>&quot;</td>
<td>3.90</td>
<td>2.27</td>
</tr>
</tbody>
</table>

**p < .025**   
**Means and standard deviations given for groups for which Scheffe post-hoc analysis resulted in significant differences.**
### TABLE 5

One-way Analysis of Variance
with Race as the Independent Variable and Composite Attributions (Vignette) as the Dependent Variable

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>4.45</td>
<td>3.22*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>42</td>
<td>1.38</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>Outcome (vignette)</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>slip</td>
<td>5.24</td>
<td>1.03</td>
</tr>
<tr>
<td>Asian</td>
<td>&quot;</td>
<td>3.58</td>
<td>2.09</td>
</tr>
</tbody>
</table>

* p < .05

Means and standard deviations given for groups for which Scheffe post-hoc analysis resulted in significant differences.
subjects \( (M = 3.58) \) when asked to explain another person's slip.

Finally, one-way ANOVA resulted in significant group differences for races for composite attributions made in the vignette abstinence condition of the PCRASQ \( (F (3, 42) = 6.38, p < 0.025) \), (see Table 6). Scheffe post-hoc analysis indicated that White subjects \( (M = 5.76) \) made more internal, stable, global composite attributions than Asian subjects \( (M = 3.64) \), but less than Hispanic subjects \( (M = 6.00) \).

**Attributions for Hypothetical Outcomes Involving Self**

A repeated measures analysis of variance (ANOVA) examining composite attributions (mean of the internal, stable, and global attribution ratings added together) was performed on the attributions for the outcomes of relapse, slip, and abstinence measured by the PCRASQ. These analyses revealed significant results \( (F (2, 90) = 43.11, p < .0001) \) (See Table 7).

One-tail, matched pairs \( t \)-tests, conducted as post-hoc analyses to specify the location and nature of the differences, resulted in significant differences for two of the three comparisons between outcome groups. As hypothesized, subjects made more internal, stable, and global composite attributions for outcome given as abstinence \( (M = 5.81) \) than for relapse \( (M = 4.60) \) \( (t = -7.75, p < .0001) \) or slip \( (M = 4.7) \) \( (t = -6.87, p < .0001) \).
TABLE 6

One-way Analysis of Variance
with Race as the Independent Variable and Composite
Attributions (Vignette) as the Dependent Variable

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>6.9341</td>
<td>6.36***</td>
</tr>
<tr>
<td>Within Groups</td>
<td>42</td>
<td>1.0898</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Race

<table>
<thead>
<tr>
<th></th>
<th>Outcome</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>abstinence (vignette)</td>
<td>5.76</td>
<td>0.88</td>
</tr>
<tr>
<td>Hispanic</td>
<td>&quot;</td>
<td>6.00</td>
<td>0.35</td>
</tr>
<tr>
<td>Asian</td>
<td>&quot;</td>
<td>3.64</td>
<td>2.15</td>
</tr>
</tbody>
</table>

*** p < .0025

Means and standard deviations given for groups for which Scheffe post-hoc analysis resulted in significant differences.
<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within People</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between measures</td>
<td>2</td>
<td>20.1057</td>
<td>43.11***</td>
</tr>
<tr>
<td>Residual</td>
<td>90</td>
<td>0.4664</td>
<td></td>
</tr>
<tr>
<td>Composite Attributions for Relapse</td>
<td></td>
<td>4.60</td>
<td>.6505</td>
</tr>
<tr>
<td>Composite Attributions for Slip</td>
<td></td>
<td>4.74</td>
<td>.8131</td>
</tr>
<tr>
<td>Composite Attributions for Abstinence</td>
<td></td>
<td>5.81</td>
<td>.9088</td>
</tr>
</tbody>
</table>

**** p < .0001
The results of the post-hoc analyses are presented in Table 9.

In order to explore more completely the nature of these differences, a repeated measures ANOVA was conducted for each of the attributional dimensions separately (i.e., internal dimension, stable dimension, and global dimension), followed by one-tail, matched pairs t-tests. A repeated measures ANOVA was performed to assess the degree of internal attributions measured by the PCRASQ. These analyses demonstrated significant effects ($F(2, 90) = 48.29, p < .0001$), (see Table 8).

Post-hoc analyses indicated that subjects made more internal attributions for outcome given as abstinence ($M = 6.08$) than either relapse ($M = 4.50$) ($t = -9.67, p < .0001$) or slip ($M = 4.86$) ($t = -7.18, p < .0001$). Subjects also made more internal attributions for the slip outcome than the relapse outcome ($t = -2.09, p < .025$), (see Table 9).

A repeated measures ANOVA was performed to assess the level of stable attributions as measured by the PCRASQ. These analyses showed significant effects for the stable attributions ($F(2, 90) = 16.87, p < .0001$), (see Table 10).

Post-hoc analyses in the form of one-tail, matched pairs t-tests indicated that subjects made more stable attributions for the abstinence outcome ($M = 5.88$) than for the relapse outcome ($M = 4.81$) ($t = -4.95, p < .0001$) and the slip outcome ($M = 4.77$) ($t = -4.12, p < .0001$). No significant difference was found to exist for stable attributions made by subjects
TABLE 8
Repeated Measures Analysis of Variance with Internal Attributions at 3 Different Outcomes as Repeated Measures (Self Data)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between measures</td>
<td>2</td>
<td>31.6443</td>
<td>48.28****</td>
</tr>
<tr>
<td>Residual</td>
<td>90</td>
<td>0.6555</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Attributions for Relapse</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Attributions for Slip</td>
<td>4.86</td>
<td>1.0845</td>
</tr>
<tr>
<td>Internal Attributions for Abstinence</td>
<td>6.08</td>
<td>0.8343</td>
</tr>
</tbody>
</table>

**** p < .0001
TABLE 9
Matched Pairs t-tests for Attributions at Different Outcomes (Self Data)

Comparisons for Composite Attributions (Self)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse vs. slip</td>
<td>-1.22</td>
<td>N.S.</td>
</tr>
<tr>
<td>Relapse vs. abstinence</td>
<td>-7.75</td>
<td>&lt; .0001</td>
</tr>
<tr>
<td>Slip vs. abstinence</td>
<td>-6.87</td>
<td>&lt; .0001</td>
</tr>
</tbody>
</table>

Comparisons for Internal Attributions (Self)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse vs. slip</td>
<td>-2.09</td>
<td>&lt; .025</td>
</tr>
<tr>
<td>Relapse vs. abstinence</td>
<td>-9.67</td>
<td>&lt; .0001</td>
</tr>
<tr>
<td>Slip vs. abstinence</td>
<td>-7.18</td>
<td>&lt; .0001</td>
</tr>
</tbody>
</table>

Comparisons for Stable Attributions (Self)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse vs. slip</td>
<td>0.28*</td>
<td>N.S.</td>
</tr>
<tr>
<td>Relapse vs. abstinence</td>
<td>-4.95</td>
<td>&lt; .0001</td>
</tr>
<tr>
<td>Slip vs. abstinence</td>
<td>-4.12</td>
<td>&lt; .0001</td>
</tr>
</tbody>
</table>

Comparisons for Global Attributions (Self)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse vs. slip</td>
<td>-0.45</td>
<td>N.S.</td>
</tr>
<tr>
<td>Relapse vs. abstinence</td>
<td>-4.45</td>
<td>&lt; .0001</td>
</tr>
<tr>
<td>Slip vs. abstinence</td>
<td>-4.69</td>
<td>&lt; .0001</td>
</tr>
</tbody>
</table>

* Difference is in the opposite direction from that predicted. All other listed differences are in the same direction as predicted.
### Table 10

Repeated Measures Analysis of Variance with Stable Attributions at 3 Different Outcomes

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between measures</td>
<td>2</td>
<td>18.171</td>
<td>16.87****</td>
</tr>
<tr>
<td>Residual</td>
<td>90</td>
<td>1.0771</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable Attributions for Relapse</td>
<td>4.81</td>
<td>0.9536</td>
</tr>
<tr>
<td>Stable Attributions for Slip</td>
<td>4.77</td>
<td>1.2910</td>
</tr>
<tr>
<td>Stable Attributions for Abstinence</td>
<td>5.88</td>
<td>1.2596</td>
</tr>
</tbody>
</table>

**** p < .0001
for the relapse versus the slip outcome. These results are presented in Table 9.

A repeated measures ANOVA was performed to assess the global attributions as measured by the PCRASQ. These analyses demonstrated significant effects for the global attributions as measured by the PCRASQ ($F (2, 90) = 15.06, p < .0001$), (see Table 11).

Post-hoc analyses revealed that subjects made more global attributions for the abstinence outcome ($M = 5.46$) than for the relapse outcome ($M = 4.52$) ($t = -4.45, p < .0001$) and the slip outcome ($M = 4.60$) ($t = -4.69, p < .0001$). While subjects tended to make more global attributions for the slip outcome compared to the relapse outcome, this difference was not significant. These results are summarized in Table 9.

**Attributions for Hypothetical Outcomes For Another Person**

Repeated measures ANOVA was performed on the composite attributions at different outcomes as measured by the PCRASQ. This analysis revealed significant effects from composite attributions for outcomes given for another person ($F (2, 90) = 5.22, p < .01$), (see Table 12).

Post-hoc analyses in the form of one-tail matched pairs $t$-tests, indicated that two of the three outcome comparisons were significant. Subjects made more internal, stable, and global composite attributions for outcome given as abstinence
### TABLE 11

Repeated Measures Analysis of Variance with Global Attributions at 3 Different Outcomes as Repeated Measures (Self Data)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between measures</td>
<td>2</td>
<td>12.2180</td>
<td>15.06****</td>
</tr>
<tr>
<td>Residual</td>
<td>90</td>
<td>0.8115</td>
<td></td>
</tr>
</tbody>
</table>

Global Attributions for Relapse 4.52 1.1006
Global Attributions for Slip 4.60 1.1286
Global Attributions for Abstinence 5.46 1.2691

**** p < .0001


**TABLE 12**

Repeated Measures Analysis of Variance with Composite Attributions at 3 Different Outcomes as Repeated Measures (Vignette Data)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within People</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between measures</td>
<td>2</td>
<td>2.7944</td>
<td>5.22***</td>
</tr>
<tr>
<td>Residual</td>
<td>90</td>
<td>0.5351</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Attributions for Relapse</td>
<td>5.40</td>
<td>1.2234</td>
</tr>
<tr>
<td>Composite Attributions for Slip</td>
<td>5.07</td>
<td>1.2599</td>
</tr>
<tr>
<td>Composite Attributions for Abstinence</td>
<td>5.56</td>
<td>1.2163</td>
</tr>
</tbody>
</table>

*** p < .01
than slip ($M = 5.07$) ($t = 3.01, p < .005$), (see Table 13). This finding is contrary to the hypothesis that subjects would make more internal, stable, and global composite attributions in the slip and relapse outcomes than in the abstinence outcome. As hypothesized, subjects made more internal, stable, and global composite attributions for outcome given as relapse ($M = 5.40$) than slip ($M = 5.07$) ($t = 2.13, p < .025$). These results are presented in Table 13.

As with the attributional data for self, a repeated measures ANOVA was also conducted for each of the attributional dimensions separately (i.e., internal, stable, and global) for the attributional data gathered from the vignette portion of the PCRASQ. A repeated measures ANOVA was performed to assess the degree of internal attributions as measured by the PCRASQ. These analyses demonstrated significant effects ($F (2, 88) = 4.28, p < .05$), (see Table 14).

Post-hoc analyses indicated that subjects made more internal attributions for outcome given as abstinence ($M = 5.84$) than relapse ($M = 5.04$) ($t = -2.72, p < .005$), and for the slip outcome ($M = 5.56$) compared to the relapse outcome ($t = -1.76, p < .05$). These results are presented in Table 13.

A repeated measures ANOVA was performed to assess the level of stable attributions subjects made as measured by the PCRASQ. These analyses showed significant effects for the stable attributions ($F (2, 88) = 11.47, p < .0001$), (see Table
### TABLE 13

Matched Pairs t-test for Attributions at Different Outcomes (Vignette Data)

#### Comparisons for Composite Attributions (Vignette)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse vs. slip</td>
<td>2.13*</td>
<td>&lt; .025</td>
</tr>
<tr>
<td>Relapse vs. abstinence</td>
<td>-1.08</td>
<td>N.S.</td>
</tr>
<tr>
<td>Slip vs. Abstinence</td>
<td>-3.01</td>
<td>&lt; .005</td>
</tr>
</tbody>
</table>

#### Comparisons for Internal Attributions (Vignette)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse vs. slip</td>
<td>-1.76</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Relapse vs. abstinence</td>
<td>-2.72</td>
<td>&lt; .005</td>
</tr>
<tr>
<td>Slip vs. abstinence</td>
<td>-1.19</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

#### Comparisons for Stable Attributions (Vignette)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse vs. slip</td>
<td>4.56*</td>
<td>&lt; .0001</td>
</tr>
<tr>
<td>Relapse vs. abstinence</td>
<td>2.20*</td>
<td>&lt; .025</td>
</tr>
<tr>
<td>Slip vs. abstinence</td>
<td>-2.68</td>
<td>&lt; .005</td>
</tr>
</tbody>
</table>

#### Comparisons for Global Attributions (Vignette)

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse vs. slip</td>
<td>1.96*</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Relapse vs. abstinence</td>
<td>-0.41</td>
<td>N.S.</td>
</tr>
<tr>
<td>Slip vs. abstinence</td>
<td>-2.38</td>
<td>&lt; .025</td>
</tr>
</tbody>
</table>

* Difference is in the predicted direction. All other differences are in the opposite direction from that predicted.
One-tail, matched pairs t-tests were significant for all comparisons between the three outcomes. As hypothesized, subjects made more stable attributions for the relapse outcome ($M = 6.16$) than for the slip outcome ($M = 5.18$) ($t = 4.56$, $p < .0001$) and for the abstinence outcome ($M = 5.73$) ($t = 2.20$, $p < .025$). However, subjects made significantly more stable attributions for the abstinence outcome than for the slip outcome ($t = -2.68$, $p < .005$).

This finding is contrary to the hypothesis that subjects would make more stable attributions for another person's slip than for another person's abstinence. These findings are summarized in Table 13.

A repeated measures ANOVA was performed to assess the degree of global attributions as measured by the PCRASQ. These analyses revealed significant effects for the global attributions ($F (2, 88) = 3.30$, $p < .05$), (see Table 16).

Post-hoc analyses indicated significant effects for two of the three comparisons between the different outcomes for the global dimension. Subjects made more global attributions for the relapse outcome ($M = 5.38$) than for the slip outcome ($M = 4.82$) ($t = 1.96$, $p < .05$). Subjects tended to make more global attributions for the abstinence outcome ($M = 5.49$) than for the slip outcome ($M = 4.82$) ($t = -2.38$, $p < .025$), which is in the opposite direction from that hypothesized. The comparison of the relapse and abstinence outcomes did not yield a significant difference. These results are presented
TABLE 14

Repeated Measures Analysis of Variance with Attributions at 3 Different Outcomes as Repeated Measures (Vignette Data)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between measures</td>
<td>2</td>
<td>7.3852</td>
<td>4.28**</td>
</tr>
<tr>
<td>Residual</td>
<td>88</td>
<td>1.7261</td>
<td></td>
</tr>
<tr>
<td>Internal attributions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for relapse</td>
<td>5.04</td>
<td>1.5661</td>
<td></td>
</tr>
<tr>
<td>Internal attributions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for slip</td>
<td>5.56</td>
<td>1.4071</td>
<td></td>
</tr>
<tr>
<td>Internal attributions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for abstinence</td>
<td>5.84</td>
<td>1.3477</td>
<td></td>
</tr>
</tbody>
</table>

** p < .025
### TABLE 15

Repeated Measures Analysis of Variance with Attributions at 3 Different Outcomes as Repeated Measures (Vignette Data)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between measures</td>
<td>2</td>
<td>10.8222</td>
<td>11.48***</td>
</tr>
<tr>
<td>Residual</td>
<td>88</td>
<td>0.9434</td>
<td></td>
</tr>
<tr>
<td>Stable attributions for relapse</td>
<td></td>
<td>6.16</td>
<td>0.8516</td>
</tr>
<tr>
<td>Stable attributions for slip</td>
<td></td>
<td>5.18</td>
<td>1.3019</td>
</tr>
<tr>
<td>Stable attributions for abstinence</td>
<td></td>
<td>5.73</td>
<td>1.3212</td>
</tr>
</tbody>
</table>

**** p < .0001
Comparisons of Attributions Made for Self and Vignette

Implicit in the first two hypotheses is the prediction that subjects will make more internal, stable, and global attributions for themselves (self) in the abstinence outcome situation, and more internal, stable, and global attributions for another person (vignette) in the relapse and slip outcome condition. To assess this prediction, a series of one-tail, matched pairs t-tests were conducted, comparing attributions made for self and other as measured by the PCRASQ. These findings are presented in Table 17.

Regarding internal, stable, and global composite attributions, results of the t-tests indicate that subjects made significantly more internal, stable, and global composite attributions in the relapse outcome condition for another person ($M = 5.40$) than for themselves ($M = 4.60$) ($t = -4.19$, $p < .0001$). One-tail, matched pairs t-test were also conducted for each of the attributional dimensions separately. For the internal dimension, significant differences were found for two of the three comparisons. Subjects made significantly more internal attributions for another person ($M = 5.04$) than for themselves ($M = 4.50$) in the relapse outcome conditions ($t = -1.99$, $p < .05$). In the slip outcome condition, subjects also made more internal attributions for another person ($M = 5.56$) than for themselves ($M = 4.86$) ($t = -2.57$, $p < .01$).
TABLE 16
Repeated Measures Analysis of Variance with Attributions at 3 Different Outcomes as Repeated Measures (Vignette Data)

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between measures</td>
<td>2</td>
<td>5.7407</td>
<td>3.30*</td>
</tr>
<tr>
<td>Residual</td>
<td>88</td>
<td>1.7407</td>
<td></td>
</tr>
<tr>
<td>Global attributions for relapse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Global attributions for slip</td>
<td>5.38</td>
<td>1.6416</td>
<td></td>
</tr>
<tr>
<td>Global attributions for abstinence</td>
<td>4.82</td>
<td>1.5853</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
### TABLE 17
Planned Comparisons with One-tail, Matched Pairs t-test for Self Attributions vs. Vignette Attributions

#### Comparisons for Composite Attributions

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse: self vs. vignette</td>
<td>-4.19</td>
<td>&lt; .0001</td>
</tr>
<tr>
<td>Slip: self vs. vignette</td>
<td>-1.59</td>
<td>&lt; .10</td>
</tr>
<tr>
<td>Abstinence: self vs. vignette</td>
<td>1.33</td>
<td>&lt; .10</td>
</tr>
</tbody>
</table>

#### Comparisons for Internal attributions

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse: self vs. vignette</td>
<td>-1.99</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Slip: self vs. vignette</td>
<td>-2.57</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>Abstinence: self vs. vignette</td>
<td>1.12</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

#### Comparisons for Stable Attributions

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse: self vs. vignette</td>
<td>-6.84</td>
<td>&lt; .0001</td>
</tr>
<tr>
<td>Slip: self vs. vignette</td>
<td>-1.38</td>
<td>&lt; .10</td>
</tr>
<tr>
<td>Abstinence: self vs. vignette</td>
<td>0.75</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

#### Comparisons for Global Attributions

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relapse: self vs. vignette</td>
<td>-2.87</td>
<td>&lt; .005</td>
</tr>
<tr>
<td>Slip: self vs. vignette</td>
<td>-0.78</td>
<td>N.S.</td>
</tr>
<tr>
<td>Abstinence: self vs. vignette</td>
<td>-0.07*</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

* Difference is in the opposite direction from that predicted. All other differences are in the predicted direction.
Although the direction of the difference in the abstinence condition was consistent with the predicted direction (i.e., more internal for self than other), this finding did not reach significance.

One-tail, matched pairs t-test for the stable dimension revealed that subjects made significantly more stable attributions for another person ($M = 6.16$) than for self ($M = 4.86$) in the relapse outcome ($t = -6.84$, $p < .0001$). Although it was hypothesized that subjects would make more stable attributions for self than other in the abstinence outcome, no significant difference was found.

One-tail, matched pairs t-test for the global dimension was significant for the relapse outcome. Subjects made more global attributions for other ($M = 5.38$) than self ($M = 4.52$) in this outcome situation ($t = -2.87$, $p < .005$). No significant differences were found for the slip or abstinence outcomes.

**Drug Use**

Information was collected on subjects' use of various drugs. Subjects were placed into a general grouping based on having used recreational drugs in the past, "drug use," versus no recreational drug use, "no use." This resulted in 38 subjects being placed into the "drug use" group and eight subjects into the "no use" group. None of the subjects reported that they currently use cocaine. Five subjects
(10.9%) indicated that they had used cocaine in the past, while 41 (89.1%) denied ever having used cocaine. Twenty-eight (60.9%) of the subjects have smoked cigarettes, 36 subjects (78.3%) have used alcohol, 19 subjects (41.3%) have used marijuana, four subjects (8.7%) have used amphetamines, two subjects (4.3%) have used barbiturates, four subjects (8.7%) have used inhalants, six subjects (13.0%) have used lysergic acid diethylamide (LSD), one subject (2.2%) reported having used heroin, and one subject (2.2%) reported using tranquilizers. These results are presented in Table 18.

Drug Use and Attributions

To examine the potential influence of drug use on attributions of causality, two-tail, independent groups t-tests were conducted for the composite and separate attributional dimensions as measured by the PCRASQ at each of the three outcomes for self and vignette data. In the slip outcome, subjects in the "drug use" group made significantly more stable attributions than those in the "no use" group (t = -2.99, p < .005) (see Table 19).

Subjects were also placed into two groups based on prior use or non-use of cocaine to examine the influence of this factor on the attributional process. A two-tail, independent groups t-test was significant for the abstinence outcome for self, but not for the vignette data. Subjects who had never used cocaine made more internal (t = -2.55, p < .025), global
### TABLE 18
Drug use (N = 46)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Percent having used</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine</td>
<td>10.9</td>
<td>5</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>60.9</td>
<td>28</td>
</tr>
<tr>
<td>Alcohol</td>
<td>78.3</td>
<td>36</td>
</tr>
<tr>
<td>Marijuana</td>
<td>41.3</td>
<td>19</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>8.7</td>
<td>4</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>4.3</td>
<td>2</td>
</tr>
<tr>
<td>LSD</td>
<td>13.0</td>
<td>6</td>
</tr>
<tr>
<td>Inhalants</td>
<td>8.7</td>
<td>4</td>
</tr>
<tr>
<td>Heroin</td>
<td>2.2</td>
<td>1</td>
</tr>
<tr>
<td>Tranquilizers</td>
<td>2.2</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: 8 subjects (17.4%) reported that they had use none of the drugs listed above.
(t = -2.30, p < .025), and internal, stable, and global composite attributions (t = -2.90, p < .01) than subjects who had used cocaine when asked to explain their own abstinence (see Table 19).

Two-tail, independent groups t-tests were then conducted to examine the potential role of use of other drugs in the attributional process. For each drug, subjects were divided into "use" or "no use" groups. Significant findings are presented below and are summarized in Table 19. Those who had never used alcohol made more internal attributions for self in the abstinence outcome than those who had used alcohol (t = 3.16, p < .005). In the slip outcome, those who had used alcohol made more stable attributions for self than those who had not used alcohol (t = -2.90, p < .01).

In the abstinence outcome condition for self, those who had not used barbiturates made more internal, stable, and global composite attributions (t = 2.55, p < .025), more internal attributions (t = 2.23, p < .05), and more stable attributions (t = 2.05, p < .05) than subjects who had used barbiturates.

Subjects who had not used inhalants made more internal, stable, global composite attributions (t = 5.19, p < .0001), more stable attributions (t = 2.78, p < .025), and more global attributions (t = 2.20, p < .05) in the abstinence outcome for self than those who had used inhalants. These subjects also made more internal attributions in the abstinence outcome for
the vignette ($t = 2.18$, $p < .05$). For the relapse condition for self, those who had not used inhalants made more global attributions than those who had ($t = 2.88$, $p < .01$).

Looking at the abstinence outcome for self, subjects who had not used LSD made more internal, stable, global composite attributions than those who had ($t = 2.47$, $p < .025$). This was also the case for internal attributions ($t = 2.07$, $p < .05$).

In the abstinence outcome for self, subjects who had not used tranquilizers made more internal, stable, global composite attributions ($t = 2.61$, $p < .025$), more internal attributions ($t = 2.40$, $p < .025$), and more stable attributions ($t = 3.47$, $p < .001$) than those who had used tranquilizers. These results are also summarized in Table 19.

**Level of Depression and Relationships**

Two of the subjects (4.3%) met the criteria to be classified as depressed ($T \geq 65$ on Scale 2 of the MMPI-2 and BDI total $\geq 18$). The remaining 44 subjects (95.7%) were classified as nondepressed. Subjects also were asked to rate their relationships with family and friends on a 7 point Likert scale, where 1 = very satisfying and not at all stressful, and 7 = very stressful and not at all satisfying. Ratings for the relationships ranged from 2 to 5, with a mean of 2.22 and a modal rating of 2.0 ($n = 28$).
<table>
<thead>
<tr>
<th>Groups</th>
<th>Outcome</th>
<th>Attribution</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>use cocaine &lt; abstinence</td>
<td>internal</td>
<td>-2.55</td>
<td>&lt; .025</td>
<td></td>
</tr>
<tr>
<td>no cocaine</td>
<td>(self)</td>
<td>global</td>
<td>-2.30</td>
<td>&lt; .025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>composite</td>
<td>-2.90</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>no alcohol &gt; abstinence</td>
<td>internal</td>
<td>3.16</td>
<td>&lt; .005</td>
<td></td>
</tr>
<tr>
<td>use alcohol</td>
<td>(self)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no barb &gt; abstinence</td>
<td>composite</td>
<td>2.55</td>
<td>&lt; .025</td>
<td></td>
</tr>
<tr>
<td>use barb</td>
<td>(self)</td>
<td>internal</td>
<td>2.23</td>
<td>&lt; .05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>stable</td>
<td>2.05</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>no inhalants &gt; abstinence</td>
<td>composite</td>
<td>5.19</td>
<td>&lt; .0001</td>
<td></td>
</tr>
<tr>
<td>use inhalants</td>
<td>(self)</td>
<td>stable</td>
<td>2.78</td>
<td>&lt; .025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>global</td>
<td>2.20</td>
<td>&lt; .05</td>
</tr>
<tr>
<td></td>
<td>abstinence</td>
<td>internal</td>
<td>2.18</td>
<td>&lt; .05</td>
</tr>
<tr>
<td></td>
<td>(vignette)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no LSD &gt; abstinence</td>
<td>composite</td>
<td>2.47</td>
<td>&lt; .025</td>
<td></td>
</tr>
<tr>
<td>use LSD</td>
<td>(self)</td>
<td>internal</td>
<td>2.07</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>no tranq &gt; abstinence</td>
<td>composite</td>
<td>2.61</td>
<td>&lt; .025</td>
<td></td>
</tr>
<tr>
<td>use tranq</td>
<td>(self)</td>
<td>internal</td>
<td>2.40</td>
<td>&lt; .025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>stable</td>
<td>3.47</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>no alcohol &lt; slip</td>
<td>stable</td>
<td>-2.90</td>
<td>&lt; .01</td>
<td></td>
</tr>
<tr>
<td>use alcohol</td>
<td>(self)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no use &lt; relapse</td>
<td>stable</td>
<td>-2.99</td>
<td>&lt; .005</td>
<td></td>
</tr>
<tr>
<td>drug use</td>
<td>(self)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no marijuana &gt; relapse</td>
<td>global</td>
<td>2.88</td>
<td>&lt; .01</td>
<td></td>
</tr>
<tr>
<td>use marijuana</td>
<td>(self)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The **Groups** column gives the groups being compared, and indicates with a < or > which group's mean was greater for the specified outcome and attribution.

**Note:** barb = barbiturates; tranq = tranquilizers
personality Variables and Attributional Processes

Only two subjects met the criteria to be classified as depressed for purposes of this study (i.e., n = 2 subjects who scored T ≥ 65 on the MMPI-2 Depression scale and had a BDI total ≥ 18). Because of the relative lack of depressed subjects, analyses of differences between depressed and nondepressed subjects and their attributional processes is not possible. However, one finding related to depression and attributions is of interest. Subjects' BDI total was found to correlate negatively at the p < .05 level with internal attributions made for the abstinence outcome for self (r = - .49), such that the higher they scored on the BDI (i.e., endorsing more items indicative of depression), the fewer internal attributions for self were made in the abstinence outcome of the PCRASQ. The correlations are presented in Table 20.

The MMPI-2 F scale was found to correlate negatively with the degree to which subjects made internal attributions for self in the abstinence outcome condition of the PCRASQ (r = - .54, p < .025). Subjects who scored higher on scale F made fewer internal attributions in this situation.

In the vignette relapse outcome condition, the MacAndrews (MAC) scale correlated positively with internal, stable, global composite attributions as measured by the PCRASQ (r= +.33, p .05). Persons who scored higher on the MAC scale were more likely to make internal, stable, and global
composite attributions for another person's experience of relapse. The MAC scale did not correlate significantly with other variables. In addition, two-tail, independent groups t-test failed to reach significance for the "no use" versus "drug use" groups comparison on the MAC scale. These significant correlations are presented in Table 21.
**TABLE 20**

Significant correlation between BDI total and internal attributions

<table>
<thead>
<tr>
<th>Internal attributions for abstinence outcome (self)</th>
<th>BDI total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-.49 *</td>
</tr>
</tbody>
</table>

* $p < .05$
### TABLE 21

Significant correlations between personality characteristics and attributions

<table>
<thead>
<tr>
<th>Personality characteristic</th>
<th>Outcome</th>
<th>Attribution</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMPI-2 Scale F</td>
<td>abstinence (self)</td>
<td>internal</td>
<td>- .54 **</td>
</tr>
<tr>
<td>MMPI-2 MAC Scale</td>
<td>relapse (vignette)</td>
<td>composite</td>
<td>+ .33 *</td>
</tr>
</tbody>
</table>

* p < .05
** p < .025
CHAPTER IV
DISCUSSION

The intent of this study was to examine the nature of causal attributions made by persons who are not chemically dependent for three different outcomes (relapse, slip, and abstinence) in hypothetical situations depicting the temptation to use cocaine following a period of abstinence. Subjects responded to hypothetical situations for themselves and to a hypothetical vignette describing another person's experience. As hypothesized, the data from the PCRASQ indicate that when confronted with a hypothetical outcome of abstinence, non-drug-dependent persons made significantly more internal, stable, and global composite attributions than when asked to explain an outcome characterized by a slip or relapse. These findings were consistent across the internal, stable, and global dimensions of the PCRASQ, but it was particularly robust in the internal dimension \( F(2, 90) = 48.28, p < .0001 \).

These findings may reflect the presence of self-serving biases which are believed to be utilized by normal persons who are not clinically depressed (Fiske & Taylor, 1984). Subjects' attributions for what could be termed a success (i.e., abstinence in the face of temptation to use cocaine) are more internal, stable, and global than attributions for unsuccessful events (i.e., slip or relapse). This can be
characterized as "taking credit" for the abstinence. An example of an attribution in which a subject "takes credit" for the outcome of abstinence is "I wanted to continue to get my life together." Here, the causal attribution can be described as an attribute of the individual, it is presumed to persist over time and across different situations.

This finding is important because it provides evidence that non-drug-dependent persons explain their success in a hypothetical situation involving the use of cocaine in the same manner they would explain a successful outcome unrelated to the temptation to use cocaine. Participants understood the cause of their success in these hypothetical situations as being something characteristic of themselves. In similar situations in the future, non-drug-dependent participants predicted that they would be able to rely on the same resources which enabled them to resist using cocaine in the past. In addition, subjects indicated that they believe their ability to resist the temptation to use cocaine is flexible, that it is a resource upon which they can call in other areas of their life.

In contrast, participants in the study tended to explain unsuccessful outcomes by utilizing more external, unstable, and specific attributions. This also is self-serving, in that the responsibility for the slip or relapse is explained by such statements as, "Everybody was getting high and telling me to join the party, so I did." In contrast to the attributions
made for successful outcomes, the attributions for unsuccessful hypothetical outcomes focus on the actions of others or circumstances, on a discrete, limited period of time, and on a specific, isolated situation. As Fiske and Taylor (1984) note, these types of attributions, while not necessarily the most accurate, do guard against assaults on one's self-esteem. Self-esteem is protected in three ways by explaining cocaine use with external, unstable, and specific attributions. First, by locating the cause of the slip in other persons or in circumstances (e.g., "I had no idea coke would be at this party and they all pressured me to get high."), the individual is spared from negative self-scrutiny ("I'm a weak person.") and the resulting harm to self-esteem. Second, the use of unstable attributions allows the individual to view the slip as an isolated mistake which is unlikely to happen again. An individual might say to oneself, "I slipped here, but if I learn from this mistake and redouble my efforts, I can prevent it from happening again." This type of causal thinking is likely to enhance, rather than detract from self-esteem. Finally, the use of specific, rather than global attributions, can guard against assaults on self-esteem by allowing the individual to explain and understand the use of cocaine without negating other strengths and abilities. For example, an individual might recognize that despite the struggle with cocaine use, one has worth in one's job, in functioning as a friend, parent, or spouse. The detrimental
effects of the slip on self-esteem are thus mitigated by the understanding that the cause of the slip does not negate other reasons for feeling good about oneself.

It was hypothesized that subjects would make more internal, stable, and global attributions when presented with a vignette depicting a slip as opposed to the relapse condition. The hypothesized difference (i.e., greater internal, stable, and global attributions for the slip outcome than for the relapse outcome), was significant only for the internal dimension. It may be that in making causal attributions, non-drug-dependent persons do not distinguish between relapse and slip, but focus solely on the issue of use or nonuse. Future research should investigate and attempt to clarify how drug-dependent and non-drug-dependent persons understand and attribute causality for relapses and slips in general and in regard to specific drugs (i.e., cocaine, alcohol, opiates, etc.). This would appear to be a particularly fruitful area for investigation, in part because previous research with drug-dependent persons has focused almost exclusively on the attributions for relapse or abstinence (Curry, Marlatt, & Gordon, 1987; McCormick & Taber, 1988). Given the purported central role which attributions play in determining whether a slip will be followed by resumed abstinence or full-blown relapse (Marlatt & Gordon, 1985), efforts to explore this issue further, especially with dependent persons, have considerable merit.
It was hypothesized that subjects would make more internal, stable, and global attributions for another persons' experiences of relapse or slip compared to abstinence. To the contrary, subjects made more internal and stable attributions for another person's experience of abstinence as opposed to relapse, which is similar to the pattern of attributions subjects made for themselves. As expected, subjects did make significantly more internal, stable, and global attributions for another person's experience of relapse versus slip followed by resumed abstinence. Subjects also made more stable attributions when asked to explain another person's experience of relapse versus another person's experience of abstinence. This finding was anticipated because of the actor-observer effect, which is the tendency to view other people's behavior as stable (Fiske & Taylor, 1984). The inconsistent nature of these findings makes their interpretation difficult. However, it may be the actor-observer effect was negated due to the rather extreme evaluative nature of the hypothetical outcomes. Fiske and Taylor (1984) argue that the actor-observer effect may be weakened when outcomes are either strongly positive or negative. The outcomes in the vignette (relapse, slip, or abstain) can be viewed as representing negative and positive outcomes, perhaps prompting participants to utilize more situational or unstable causal attributions.

It is interesting to note that the hypothesis that
subjects would make significantly more internal, stable, and global attributions for another person than for themselves to explain the relapse outcome was supported by the data. This appears to suggest that a self-serving bias may be in operation. The statement, "I might experience a relapse because I was in the wrong place at the wrong time, but if you relapse, it is most likely because you just don't have enough will power" captures the essence of this finding. This is self-serving in two regards; the first was noted above and encompasses an attempt at protecting self-esteem when confronted with the necessity of explaining one's own experience of relapse. Second, it may be that by "blaming" another person for their relapse, it is easier to minimize the likelihood of such an outcome occurring for one's self. This notion is consistent with the hypothesis that people at times blame a victim for their misfortune as a means of convincing themselves that steps can be taken to avoid encountering that same misfortune.

A similar self-serving bias was not found for the abstinence outcome. While subjects did make slightly more internal and stable attributions for themselves than for another person to explain the experience of abstinence, these differences were not statistically significant. The notion of subjects giving themselves more credit for their abstinence than they are willing to afford to others for remaining abstinent is not supported by these data. However, as noted
above, they are willing to blame others for relapsing more than they are willing to accept blame for themselves. These findings taken together suggest that it is the need to convince themselves that steps can be taken to avoid another's misfortune which leads to more blame being placed on others for relapse, but allowing credit to be given to others equally for remaining abstinent. The reasoning may be as follows: "You are responsible for your relapse, thus I do not have to worry about that happening to me. You are also responsible for abstinence, so I can also anticipate controlling my future with regard to abstinence." There is an interesting contradiction in this line of reasoning: I am responsible for not relapsing, until it actually happens, at which time circumstances or others are to be blamed. This contradiction is understandable, however, in that it is comforting when considering the future to feel that one is in control of one's fate with regard to drug use, yet such a contradiction is also protective of self-esteem when required to explain an experience of relapse.

These findings assume a measure of importance when one considers the potential or real impact that the attributional process of non-drug-dependent family members, friends, and co-workers can have on an individual who may be undergoing or is at risk for relapse (Maisto, O'Farrell, Connors, McKay, & Pelcovits, 1988). This is even more true if there is a significant discrepancy between attributions made by the
dependent person and others who are close to him/her. One can well imagine the potentially deleterious effects on the process of treatment if a dependent person is making self-serving attributions for relapse while those around him/her attribute the relapse to internal, stable, and global factors. Maisto et al (1988) highlight the importance of understanding the attributions in the context of interpersonal relationships. In addition to the types of attributions made, their congruence or incongruence to significant others' understanding of the relapse process must be considered. This suggests the potential usefulness of family, couples, and perhaps group therapy in relapse prevention. Therapy in these modalities might be able to assist the dependent person and significant others in arriving at an accurate understanding of the relapse process or a recent experience of relapse, and to enhance the ability of all concerned to learn from the relapse process. Future research with cocaine dependent persons would do well to consider comparing attributions made by dependent persons to those made by non-drug-dependent persons who are important in the dependent person's life (i.e., family, friends, co-workers, employers).

A pattern of interesting, but inconsistent, racial differences emerged with regard to causal attributions. Asian subjects tended to make the least internal, stable, and global attributions for the vignette condition. Black subjects and Asian subjects also tended to make less stable attributions
for the slip and relapse outcome for themselves. White subjects tended to make the most internal, stable, and global attributions across various outcomes, but this trend, too, is not without several exceptions. In general, it seems that race may be a factor which requires special attention in future research dealing with attributions and the issues of relapse, slip, and abstinence.

The number of nonwhite subjects who participated in this study was quite small. It would be naive to attempt to interpret these results in a definitive manner given the under-representative number of minority participants. However, the findings of this study do suggest that research examining the types of attributions ethnic minority individuals make regarding relapse to cocaine or other drug use is needed. This is especially true in light of data from NIDA which indicates that drug use continues to increase in minority groups, especially the Hispanic population (NIDA, 1989b). A review of the body of literature on ethnicity and causal attributions also reveals findings which suggest that ethnicity may be an important factor to consider in assessing the manner in which subjects of different ethnicities make causal attributions. Some researchers have found that, compared to White subjects, Hispanic subjects attributed success to internal factors, while White subjects attributed failure to more internal (e.g., low ability) factors than Hispanic subjects (Crowder, 1982). Romero and Garza (1986)
found significant variations among Black, Hispanic, and White women who were asked to rate the importance of task difficulty, competence, effort, luck, personal connections, gender, and ethnicity in occupational success. In a study using college undergraduates, Black subjects were more likely to make external attributions for problems than White subjects, although the authors concluded that no differences existed in the manner in which Black and White students experienced and responded to problems (Cheatham, Shelton, & Ray, 1987). In contrast to these findings, Graham and Long (1986) reported that Blacks did not display a markedly different attributional pattern than did Whites following performances of various tasks.

In view of previous research and the findings from the present study, future research should assess the hypothesis that Black and Asian individuals make less internal, stable, and global attributions for slips and relapses than do White subjects. It would be expected, however, that racial groups would not differ in the extent to which subjects make internal, stable, and global attributions for remaining abstinent.

The body of literature on depression and attributions suggests that depressed subjects would make more internal, stable, and global attributions for negative events than nondepressed subjects (Metalsky, et al., 1982; Zautra, Guenther, & Chartrier, 1985). Internal attributions for
positive outcomes have been found to be associated with high self-esteem (Zautra, Guenther, & Chartrier, 1985). Consistent with this literature, there was a significant negative correlation between the BDI total and internal attributions for the abstinence outcome. This finding suggests that as subjects endorsed more items on the BDI indicative of depression, there was a corresponding decrease in the extent to which they made internal attributions for remaining abstinent in hypothetical situations where the temptation to use cocaine would be high. This is consistent with the idea that depressed persons do not utilize the self-serving biases discussed above; these individuals are less likely to take credit for remaining abstinent than are nondepressed subjects. However, it is important to recognize that this correlation was obtained with BDI scores which, for the most part, did not represent even mild depression. Whether or not this correlation would be found with subjects who were clinically depressed is not clear from the present study, although previous research suggests that it would.

As noted, only two subjects met the criteria for the diagnosis of depression. It is not possible to assess the hypothesis that depressed subjects would make more internal, stable, and global attributions than nondepressed subjects for hypothetical relapse and slip outcomes, and that nondepressed subjects would make more internal, stable, and global attributions for the abstinence outcome. One would expect
that depressed subjects would be unlikely to take credit for abstinence, and that they would be equally unlikely to make self-serving, or self-excusing attributions for a slip or relapse. Research with drug-dependent persons should investigate the role of depression in causal attributions made for actual experiences of abstinence, slip, and relapse.

Although the current study used non-drug-dependent participants, the data suggests that the use of recreational drugs may be related to attributions regarding hypothetical situations involving the temptation to use cocaine. Of note is a nonsignificant trend for those subjects who had never used recreational drugs to make more internal attributions for their own abstinence. Similarly, those who had not used recreational drugs made less stable attributions when asked to explain their own hypothetical slip than those who had used drugs. These findings only approach significance, and are summarized in Appendix H. However, several significant findings support the notion that recreational drug use influences the types of causal attributions made to explain hypothetical outcomes related to use of cocaine. These are presented below.

Looking at comparisons of groups which have or have not used drugs (e.g., cocaine, alcohol, etc.), there was a general trend for non-drug-users to make more self-serving attributions than those who do. For example, when asked to make attributions for the abstinent condition, nonusers made
more internal attributions than users of cocaine, alcohol, barbiturates, LSD, and tranquilizers. In the abstinent condition of the PCRASQ, non-drug-users also made more stable attributions than users of barbiturates, inhalants, and tranquilizers, and more global attributions than those who had used cocaine, or inhalants.

Somewhat surprisingly, the no use and drug use groups did not differ significantly on the MAC scale of the MMPI-2. The MAC scale is thought to provide an index for differentiating alcoholic from nonalcoholic psychiatric patients. However, when asked to explain another person's relapse, those who scored higher on the MAC scale were more likely to make composite attributions characterized by internal, stable, and global attributional dimensions. This suggests that those persons with characteristics associated with problems involving alcoholism are more likely to hold another person responsible for his/her experience of relapse. Individuals who score higher on the MAC scale would be more likely to see another person's relapse as a result of lack of willpower or some other personal characteristic. One would not expect these individuals to make the same allowances for another person who experiences relapse that they grant themselves (i.e., the self-serving attributions made for self in that situation).

The findings of this study suggest that individuals who use drugs tend to make more internal, stable, and global
attributions for relapse and slip conditions than those who do not use drugs. Conversely, it is conceivable that those who have not used drugs make more internal, stable, and global attributions for abstinence outcomes than those who have used drugs. Whether or not these are systematic relationships between drug use and types of causal attributions for the events of relapse, slip, or abstinence remains an issue for future research.

Conclusion

In summary, the results of the present study support the notion that causal attributions are an important component to an understanding of the process of relapse. Non-drug-dependent subjects made significantly different attributions on the PCRASQ depending upon given hypothetical outcomes. This was found to be the case for subjects' attributions for themselves as well as for attributions made about another person's experience.

It is clear that non-drug-dependent persons make self-serving attributions both for successful outcomes (abstinence) and for unsuccessful outcomes (slip and relapse). Subjects tended to take credit for hypothetical outcomes of remaining abstinent, but were reluctant to accept responsibility for hypothetical outcomes involving use of cocaine. Furthermore, non-drug-dependent persons in this research placed greater blame on others than themselves for slips or relapses.
Several research questions emerge from these findings: What kinds of causal attributions do cocaine-dependent persons make for hypothetical and real situations involving relapse, slip, and abstinence outcomes? How similar or how different are these attributions from ones made by non-drug-dependent persons who are otherwise comparable to drug-dependent persons? How do cocaine-dependent persons perceive the causal attributions that others make for their experiences of slip and relapse, as well as abstinence? What, if any, effect do attributions made by others (especially significant others) have on the process of treatment of cocaine dependence when these attributions are communicated to the individual who struggles with a problem with cocaine dependence?

One can argue that the current study has added to the body of literature which suggests that causal attributions are an important component in understanding the process of relapse and the treatment of cocaine dependence. To understand the experience of the cocaine dependent person, it is necessary to know the ways in which those around the individual make sense of the process of relapse. By scrutinizing the manner in which non-drug-dependent persons make attributions for various outcomes, important research questions have been generated which may allow for a better understanding of this important component of the relapse process.

Finally, it is important to acknowledge several methodological problems when considering the findings of this
study. The sample was primarily white, middle class college students. Generalization of these findings is not warranted without replication with a more diverse sample. This is especially true given the differences found among racial groups in the types of causal attributions made, both in this research and in the general body of literature on the attributional process.

It should also be noted that subjects may have been able to discern that differences were expected to be found for attributions for the different outcomes and for self versus vignette based on the demand characteristics of the PCRASQ. However, it is unlikely that subjects would have been able to figure out the exact hypotheses without advanced knowledge of the relapse process or attribution theory. Given that these participants were drawn from introductory psychology classes, it is unlikely that demand characteristics are cause for much concern. Finally, the present study required a fair amount of reading, and it is conceivable that some subjects would respond with little care or effort, perhaps obscuring or altering results in unknown ways.
APPENDIX A
Demographics Questionnaire

Code Number

1. How old were you on your last birthday? 

2. Are you male (1) or female (2)? 

3. What is your marital status? (check one)
   _a. single _b. divorced _c. widowed _d. married

4. What is your race/ethnicity?
   _e. Other

5. What is the occupation of the main provider in your family?
   (check one)
   _a. Executive, doctor, dentist, lawyer
   _b. Manager/owner of a large business
   _c. Administrator, small businessperson, or semi-professional
   _d. Clerical or salesworker or technical worker
   _e. Semi-skilled laborer
   _f. Unskilled laborer
   _g. Unemployed for one year or more

6. What is the highest education level the main provider in your household has completed? (check one)
   _a. Graduate education
   _b. College degree
   _c. One year or more of college without degree
   _d. High school diploma
   _e. Some high school
   _f. Grade school diploma
   _g. Less than eight grade

7. How many people live in your household?
Drug Use History Questionnaire

Code Number

Date

1. a. Have you ever used cocaine? __yes __no
   b. Do you currently use cocaine? __yes __no

2. Please check any of the following drugs which you have used:

   ___a. cigarettes
   ___b. alcohol
   ___c. marijuana
   ___d. amphetamines, other stimulants
   ___e. barbiturates, other sedatives
   ___f. inhalants
   ___g. LSD, other hallucinogens
   ___h. heroin, other opiates
   ___i. tranquilizers
   ___j. other (please list below)

   frequency/amount

3. If you have used or are using cocaine, which of the following describes the manner in which you use(d) the drug? (check any that apply to you)

   ___a. inhaling (snorting)
   ___b. IV use (injection)
   ___c. free-basing
   ___d. crack smoking

4. If you have used or currently use cocaine, how long did you use or have you been using the drug? (check one)

   ___a. less than one month
   ___b. one to six months
   ___c. six months to one year
   ___d. one to two years
   ___e. two to four years
   ___f. four to six years
   ___g. six to ten years
   ___h. more than ten years

5. How frequently did/do you use cocaine? (check one)

   ___a. daily
   ___b. several times a week, but not daily
   ___c. once or twice a week
   ___d. few times a month, but less than once a week
   ___e. once a month or less
6. Please estimate the amount of cocaine you typically use(d):
   a. per day  _______________________
   b. per week  _______________________

7. Please estimate the amount of money you typically spend/spent to purchase cocaine:
   a. in one day  _______________________
   b. in one week  _______________________
   c. in one month  _______________________  

8. Please indicate the social setting in which you most frequently use(d) cocaine (check all that apply to you).
   __a. alone
   __b. with one or two friends or family
   __c. with one or two others not well known to you
   __d. in a group of friends or family
   __e. in a group of others not well known to you
   __f. with co-workers, business associates

9. Please indicate the setting in which you most frequently use(d) cocaine (check all that apply to you).
   __a. home
   __b. work
   __c. friend or relative's house
   __d. bar or restaurant
   __e. car
   __f. other (please describe)

10. Please check any of the following which create significant stress in your life that you feel may be related to use of cocaine or other drugs (check all that apply to you).
    __a. work related stress
    __b. unemployment
    __c. financial problems
    __d. marital problems
    __e. relationship problems in other significant and/or romantic relationship
    __f. family/parenting problems and pressures
    __g. school problems
    __h. other (please describe)

11. Please check any of the following types of treatment in which you have been involved for drug use (check all that apply to you).
    __a. Cocaine Anonymous
    __b. Alcoholics Anonymous
    __c. Outpatient treatment
1. number of outpatient treatment programs you have been involved with 
   ___________
2. date of most recent treatment 
   ___________

__ d. Inpatient treatment
1. number of inpatient treatment programs you have been involved with prior to the current one 
   ___________
2. date of most recent inpatient treatment prior to the present 
   ___________

12. At this time, how would you rate your relationship with your closest friends and family members? (circle one number)

1  2  3  4  5  6  7
very satisfying
and without stress

very unsatisfying
and stressful
Beck Inventory

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1 0 I do not feel sad.
   1 I feel sad.
   2 I am sad all the time and I can't snap out of it.
   3 I am so sad or unhappy that I can't stand it.

2 0 I am not particularly discouraged about the future.
   1 I feel discouraged about the future.
   2 I feel I have nothing to look forward to.
   3 I feel that the future is hopeless and that things cannot improve.

3 0 I do not feel like a failure.
   1 I feel I have failed more than the average person.
   2 As I look back on my life, all I can see is a lot of failures.
   3 I feel I am a complete failure as a person.

4 0 I get as much satisfaction out of things as I used to.
   1 I don't enjoy things the way I used to.
   2 I don't get real satisfaction out of anything anymore.
   3 I am dissatisfied or bored with everything.

5 0 I don't feel particularly guilty.
   1 I feel guilty a good part of the time.
   2 I feel quite guilty most of the time.
   3 I feel guilty all the time.

6 0 I don't feel I am being punished.
   1 I feel I may be punished.
   2 I expect to be punished.
   3 I feel I am being punished.

7 0 I don't feel disappointed in myself.
   1 I am disappointed in myself.
   2 I am disgusted with myself.
   3 I hate myself.

8 0 I don't feel I am any worse than anybody else.
   1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.

9 0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10 0 I don't cry anymore than usual.
1 I cry more than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't cry even though I want to.

11 0 I am no more irritated now than I ever am.
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time now.
3 I don't get irritated at all by the things that used to irritate me.

12 0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.

13 0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions than before.
3 I can't make decisions at all anymore.

14 0 I don't feel I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance that make me look unattractive.
3 I believe that I look ugly.

15 0 I can work about as well as before.
1 It takes an extra effort to get started doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.

16 0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.
17 0 I don't get more tired than usual.
   1 I get tired more easily than I used to.
   2 I get tired from doing almost anything.
   3 I am too tired to do anything.

18 0 My appetite is no worse than usual.
   1 My appetite is not as good as it used to be.
   2 My appetite is much worse now.
   3 I have no appetite at all anymore.

19 0 I haven't lost much weight, if any lately.
   1 I have lost more than 5 pounds.
   2 I have lost more than 10 pounds.
   3 I have lost more than 15 pounds.

   I am purposely trying to lose weight by eating less
   ___yes  ___no

20 0 I am no more worried about my health than usual.
   1 I am worried about physical problems such as aches and
      pains; or upset stomach; or constipation.
   2 I am very worried about physical problems and it's
      hard to think of much else.
   3 I am so worried about my physical problems, that I
      cannot think about anything else.

21 0 I have not noticed any recent change in my interest in
   sex.
   1 I am less interested in sex than I used to be.
   2 I am much less interested in sex now.
   3 I have lost interest in sex completely.
APPENDIX D
A. Below are listed six hypothetical situations that you might encounter after quitting use of cocaine. All of these situations result in a return to use of cocaine at your level of use prior to entering treatment. Please imagine yourself in each situation as vividly as possible and think about why you would have used cocaine in each situation. While there may be many causes or explanations for use of cocaine in each situation, please pick only one -- the major cause or explanation that applies most in your case. Please write this cause in the blank provided after each situation and then answer the questions that follow. To summarize, please:

1. Read each situation and vividly imagine it happening to you.
2. Decide what you feel would be the major cause of your use of cocaine in the situation if it happened to you.
3. Write the major cause in the blank provided.
4. Answer the three questions that follow.
5. Go on to the next situation.

YOU HAVE BEEN FEELING SLIGHTLY DEPRESSED AND THINK THAT USING COCAINE WOULD HELP YOU FEEL BETTER. YOU USE COCAINE AND RESUME REGULAR USE.

YOU HAVE BEEN FEELING SLIGHTLY DEPRESSED AND THINK THAT USING COCAINE WOULD HELP YOU FEEL BETTER. YOU USE COCAINE AND RESUME REGULAR USE.

1. Write down one major cause ____________________________

2. Is this cause of your using cocaine due to something about you or something about other people or circumstances? (circle one number)

1 2 3 4 5 6 7
1 2 3 4 5 6 7
Totally due to other people or circumstances

Totally due to me
3. In the future if you use cocaine in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7
Will never again be present
Will always be present

4. Is this cause something that just influences cocaine use or does it also influence other areas of your life? (circle one number)

1 2 3 4 5 6 7
Influences just this particular situation
Influences all situations in my life

YOU ARE AT A PARTY WITH FRIENDS, SEVERAL OF WHOM USE COCAINE. YOU USE COCAINE AND RESUME REGULAR USE.

1. Write down one major cause ________________________________

2. Is this cause of your using cocaine due to something about you or something about other people or circumstances? (circle one number)

1 2 3 4 5 6 7
Totally due to other people or circumstances
Totally due to me

3. In the future if you use cocaine in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7
Will never again be present
Will always be present
4. Is this cause something that just influences cocaine use or does it also influence other areas of your life? (circle one number)

1 2 3 4 5 6 7
Influences just this particular situation
Influences all situations in my life

YOUR EMPLOYER HAS REPRIMANDED YOU FOR A MINOR MISTAKE. YOU FEEL UNJUSTLY CRITICIZED AND ARE ANGRY. YOU USE COCAINE AND RESUME REGULAR USE.

1. Write down one major cause __________________________

2. Is this cause of your using cocaine due to something about you or something about other people or circumstances? (circle one number)

1 2 3 4 5 6 7
Totally due to other people or circumstances
Totally due to me

3. In the future if you use cocaine in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7
Will never again be present
Will always be present

4. Is this cause something that just influences cocaine use or does it also influence other areas of your life? (circle one number)

1 2 3 4 5 6 7
Influences just this particular situation
Influences all situations in my life
YOU ARE FEELING BORED AND RESTLESS WITH NOTHING TO DO. YOU USE COCAINE AND RESUME REGULAR USE.

1. Write down one major cause

2. Is this cause of your using cocaine due to something about you or something about other people or circumstances? (circle one number)

   1  2  3  4  5  6  7
   Totally due to other people or circumstances

   Totally due to me

3. In the future if you use cocaine in a similar situation, will this cause again be present? (circle one number)

   1  2  3  4  5  6  7
   Will never again be present

4. Is this cause something that just influences cocaine use or does it also influence other areas of your life? (circle one number)

   1  2  3  4  5  6  7
   Influences just this particular situation

   Influences all situations in my life

YOU HAVE AN ARGUMENT WITH SOMEONE CLOSE TO YOU AND YOU ARE UPSET. YOU USE COCAINE AND RESUME REGULAR USE.

1. Write down one major cause

2. Is this cause of your using cocaine due to something about you or something about other people or circumstances? (circle one number)

   1  2  3  4  5  6  7
   Totally due to other people or circumstances

   Totally due to me
3. In the future if you use cocaine in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7
Will never again be present

4. Is this cause something that just influences cocaine use or does it also influence other areas of your life? (circle one number)

1 2 3 4 5 6 7
Influences just this particular situation
Influences all situations in my life

YOU ARE ELATED TO RECEIVE A PROMOTION AND BONUS AT WORK AND FEEL LIKE CELEBRATING. YOU USE COCAINE AND RESUME REGULAR USE.

1. Write down one major cause ______________________

2. Is the cause of your using cocaine something about you or something about other people or circumstances? (circle one number)

1 2 3 4 5 6 7
Totally due to other people or circumstances
Totally due to me

3. In the future if you use cocaine in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7
Will never again be present
Will always be present
4. Is this cause something that just influences cocaine use, or does it also influence other areas of your life? (circle one number)

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Prospective Relapse Questionnaire
(Slip/Abstinence)

Code Number

Date

B. Below are listed six hypothetical situations that you might encounter after quitting use of cocaine. All of these situations result in use of cocaine, followed by a return to abstinence. Please imagine yourself in each situation as vividly as possible and think about why you would have slipped in each situation and then regained abstinence (i.e., used cocaine in this one instance, but then did not use again). While there may be many causes or explanations for each situation, please pick only one -- the major cause or explanation that applies most in your case. Please write this cause in the blank provided after each situation and then answer the questions that follow. To summarize, please:

1. Read each situation and vividly imagine it happening to you.
2. Decide what you feel would be the major cause of your slip in the situation and recovered abstinence if it happened to you.
3. Write the major cause in the blank provided.
4. Answer the three questions that follow.
5. Go on to the next situation.

YOU HAVE BEEN FEELING SLIGHTLY DEPRESSED AND THINK THAT USING COCAINE WOULD HELP YOU FEEL BETTER. YOU USE COCAINE AND THEN RESUME ABSTINENCE.

1. Write down one major cause

2. Is this cause due to something about you or something about other people or circumstances? (circle one number)

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- 1. Totally due to other people or circumstances
- 2. Totally due to me

3. In the future if you have this experience in a similar situation, will this cause again be present? (circle one number)

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- 1. Will never again be present
- 2. Will always be present
4. Is this cause something that just influences cocaine use and abstinence or does it also influence other areas of your life? (circle one number)

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YOU ARE AT A PARTY WITH FRIENDS, SEVERAL OF WHOM USE COCAINE. YOU USE COCAINE AND THEN RESUME ABSTINENCE.

1. Write down one major cause ____________________________________________

2. Is this cause due to something about you or something about other people or circumstances? (circle one number)

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3. In the future if you have this experience in a similar situation, will this cause again be present? (circle one number)

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<td>Will never again be present</td>
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YOUR EMPLOYER HAS REPRIMANDED YOU FOR A MINOR MISTAKE. YOU FEEL UNJUSTLY CRITICIZED AND ARE ANGRY. YOU USE COCAINE AND THEN RESUME ABSTINENCE.

1. Write down one major cause ____________________________________________
2. Is this cause due to something about you or something about other people or circumstances? (circle one number)

1 2 3 4 5 6 7
Totally due to other people or circumstances
Totally due to me

3. In the future if you have this experience in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7
Will never again be present
Will always be present

4. Is this cause something that just influences cocaine use and abstinence or does it also influence other areas of your life? (circle one number)

1 2 3 4 5 6 7
Influences just this particular situation
Influences all situations in my life

YOU ARE FEELING BORED AND RESTLESS WITH NOTHING TO DO. YOU USE COCAINE AND THEN RESUME ABSTINENCE.

1. Write down one major cause

2. Is this cause due to something about you or something about other people or circumstances? (circle one number)

1 2 3 4 5 6 7
Totally due to other people or circumstances
Totally due to me

3. In the future if you have this experience in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7
Will never again be present
Will always be present
4. Is this cause something that just influences cocaine use and abstinence or does it also influence other areas of your life? (circle one number)

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</table>

YOU HAVE AN ARGUMENT WITH SOMEONE CLOSE TO YOU AND YOU ARE UPSET. YOU USE COCAINE AND THEN RESUME ABSTINENCE.

1. Write down one major cause _______________________

2. Is this cause due to something about you or something about other people or circumstances? (circle one number)

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3. In the future if you have this experience in a similar situation, will this cause again be present? (circle one number)

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4. Is this cause something that just influences cocaine use and abstinence or does it also influence other areas of your life? (circle one number)

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</table>

YOU ARE ELATED TO RECEIVE A PROMOTION AND BONUS AT WORK AND FEEL LIKE CELEBRATING. YOU USE COCAINE AND THEN RESUME ABSTINENCE.

1. Write down one major cause _______________________

---
2. Is the cause due to something about you or something about other people or circumstances? (circle one number)

1 2 3 4 5 6 7
Totally due to other people or circumstances

3. In the future if you have this experience in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7
Will never again be present

4. Is this cause something that just influences cocaine use and abstinence or does it also influence other areas of your life? (circle one number)

1 2 3 4 5 6 7
Influences just this particular situation

Influences all situations in my life
Prospective Relapse Questionnaire
(Abstain)

C. Below are listed six hypothetical situations that you might encounter after quitting use of cocaine. However, in this instance, these situations do not result in use of cocaine at all. Please imagine yourself in each situation as vividly as possible and think about why you would have resisted using cocaine in that situation. While there may be many causes or explanations for resisting the use of cocaine, please pick only one -- the major cause or explanation that applies most in your case. Please write this cause in the blank provided after each situation and then answer the questions that follow. To summarize, please:

1. Read each situation and vividly imagine it happening to you.
2. Decide what you feel would be the major cause of your resisting the use of cocaine in the situation if it happened to you.
3. Write the major cause in the blank provided.
4. Answer the three questions that follow.
5. Go on to the next situation.

YOU HAVE BEEN FEELING SLIGHTLY DEPRESSED AND THINK THAT USING COCAINE WOULD HELP YOU FEEL BETTER. YOU DO NOT USE COCAINE.

1. Write down one major cause ________________________

2. Is this cause of your not using cocaine due to something about you or something about other people or circumstances? (circle one number)

1 2 3 4 5 6 7

1 2 3 4 5 6 7

Totally due to other people or

Totally due to me circumstances

3. In the future if you resist using cocaine in a similar situation, will this cause again be present? (circle one number)

1 2 3 4 5 6 7

1 2 3 4 5 6 7

Will never again be present

Will always be present
4. Is this cause something that just influences not using cocaine or does it also influence other areas of your life? (circle one number)

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YOU ARE AT A PARTY WITH FRIENDS, SEVERAL OF WHOM USE COCAINE. YOU DO NOT USE COCAINE.

1. Write down one major cause __________________________

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2. Is this cause of your not using cocaine due to something about you or something about other people or circumstances? (circle one number)

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3. In the future if you resist using cocaine in a similar situation, will this cause again be present? (circle one number)

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4. Is this cause something that just influences not using cocaine or does it also influence other areas of your life? (circle one number)

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YOUR EMPLOYER HAS REPRIMANDED YOU FOR A MINOR MISTAKE. YOU FEEL UNJUSTLY CRITICIZED AND ARE ANGRY. YOU DO NOT USE COCAINE.

1. Write down one major cause __________________________
2. Is this cause of your not using cocaine and then resuming abstinence due to something about you or something about other people or circumstances? (circle one number)

1  2  3  4  5  6  7
Totally due to other people or circumstances

Totally due to me

3. In the future if you resist using cocaine in a similar situation, will this cause again be present?
(circle one number)

1  2  3  4  5  6  7
Will never again be present

Will always be present

4. Is this cause something that just influences not using cocaine or does it also influence other areas of your life?
(circle one number)

1  2  3  4  5  6  7
Influences just this particular situation

Influences all situations in my life

YOU ARE FEELING BORED AND RESTLESS WITH NOTHING TO DO. YOU DO NOT USE COCAINE.

1. Write down one major cause __________________________

2. Is this cause of your not using cocaine due to something about you or something about other people or circumstances? (circle one number)

1  2  3  4  5  6  7
Totally due to other people or circumstances

Totally due to me

3. In the future if you resist using cocaine in a similar situation, will this cause again be present?
(circle one number)

1  2  3  4  5  6  7
Will never again be present

Will always be present
4. Is this cause something that just influences not using cocaine or does it also influence other areas of your life? (circle one number)

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YOU HAVE AN ARGUMENT WITH SOMEONE CLOSE TO YOU AND YOU ARE UPSET. YOU DO NOT USE COCAINE.

1. Write down one major cause ________________________________

2. Is this cause of your not using cocaine due to something about you or something about other people or circumstances? (circle one number)

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YOU ARE ELATED TO RECEIVE A PROMOTION AND BONUS AT WORK AND FEEL LIKE CELEBRATING. YOU DO NOT USE COCAINE.

1. Write down one major cause ________________________________
2. Is the cause of your not using cocaine due to something about you or something about other people or circumstances? (circle one number)

1  2  3  4  5  6  7
Totally due to other people or circumstances

Totally due to me

3. In the future if you resist using cocaine in a similar situation, will this cause again be present? (circle one number)

1  2  3  4  5  6  7
Will never again be present

Will always be present

4. Is this cause something that just influences not using cocaine or does it also influence other areas of your life? (circle one number)

1  2  3  4  5  6  7
Influences just this particular situation

Influences all situations in my life
D. Please read the following vignette carefully. You will then be asked to write down the **one major** cause of the three different outcomes given. While there may be several causes that appear plausible to you, please write down only the **major** one in the blank provided, and answer the questions that follow. The vignette is as follows:

John, a 43 year old divorced, male patient entered treatment for cocaine dependence. John's use of cocaine began two years ago, following the break-up of his 11 year marriage. His use of cocaine began with occasional "social" use with friends from work, and escalated within two months to regular, heavy use of cocaine. The patient had been involved in an outpatient treatment program before, but he reported that he was unable to maintain abstinence and began using cocaine regularly just one week after finishing the treatment program. This occurred eight months prior to his presentation for inpatient treatment.

The patient reported the fear that addiction to cocaine had taken control of his life. The pattern of use consisted of marathon binges of smoking cocaine freebase every weekend, from Friday evening to Monday morning. To alleviate the post-binge "jitters," the patient would use alcohol or valium, at times feeling that it would not be possible to function in his job as a computer analyst without it. The patient had recently ended one romantic involvement that had lasted nearly a year, and had begun to date another individual who also used cocaine frequently. The patient was reportedly unhappy with this relationship at admission, and was concerned about the possibility of being terminated by his employer for cocaine-related work problems.

John successfully completed the inpatient treatment program and entered an outpatient aftercare program, which included group meetings, individual counseling, and urine tests.
I. Three months after inpatient treatment, the patient was found to have used cocaine, and had returned to weekend binging with freebase cocaine.

1. Write down one major cause ________________

____ 2. Is this cause due to something about the patient or something about other people or circumstances? (Circle one number)

1 2 3 4 5 6 7
Totally due to
Totally due
to other people
to the patient
or circumstances

____ 3. In a similar situation in the future, will this cause again be present? (Circle one number)

1 2 3 4 5 6 7
Will never
Will always
again be
be present
present

____ 4. Is this cause something that just influences the patient's use of cocaine, or does it also influence other areas of the patient's life? (Circle one number)

1 2 3 4 5 6 7
Influences just
Influences all
this particular
situations
situation

II. Three months after inpatient treatment, the patient was found to have used cocaine once, but then resumed abstinence.

1. Write down one major cause ________________

____ 2. Is this cause due to something about the patient or something about other people or circumstances? (Circle one number)

1 2 3 4 5 6 7
Totally due to
Totally due to
other people or
the patient
circumstances
3. In a similar situation in the future, will this cause again be present? (Circle one number)

1 2 3 4 5 6 7
Will never again Will always be present
be present

4. Is this cause something that just influences the patient's use of cocaine, or does it also influence other areas of the patient's life? (Circle one number)

1 2 3 4 5 6 7
Influences just this Influences all particular situation situations

III. Three months after inpatient treatment, the patient continues to be abstinent, and has not used cocaine at all.

1. Write down one major cause ______________________

2. Is this cause due to something about the patient or something about other people or circumstances? (Circle one number)

1 2 3 4 5 6 7
 Totally due to other people or circumstances Totally due to the patient

3. In a similar situation in the future, will this cause again be present? (Circle one number)

1 2 3 4 5 6 7
Will never again Will always be present
be present

4. Is this cause something that just influences the patient's use of cocaine, or does it also influence other areas of the patient's life? (Circle one number)

1 2 3 4 5 6 7
Influences just this Influences all particular situation situations
APPENDIX E
PARTICIPANT CONSENT FORM

Project Title: Cocaine Dependence: The Relationship of Causal Attributions and Relapse

Principal Investigator: James W. Pier, B.A.

Sponsor: Isiaah Crawford, Ph.D.

As a participant in this study, you will be asked to complete a battery of questionnaires. Some of the questions ask for personal information, such as age and employment status of the primary wage earner in your family; others ask you to consider some hypothetical situations involving cocaine use. Please be assured that your responses to all questions will be strictly anonymous and confidential. Your name will not appear on any of the questionnaires and the consent form that you sign will be kept separate from the actual questionnaires. The code numbers on the questionnaires are only to ensure that each set of questionnaires stays together. We will be unable to associate your name with any specific questionnaire from the information we have.

We hope that you will feel free to complete all the questionnaires. You may, however, choose not to answer specific questions or to discontinue participation at any time without penalty.

If you have any questions or concerns about this investigation, please feel free to ask the experimenter.

Participant's signature ___________________ Date ___________________
APPENDIX F
Debriefing Statement

Educational Feedback to the Participants in the Research Experiment on "Cocaine Dependence: The Relationship of Causal Attributions and Relapse".

The purpose of this experiment was to investigate the relationships among the types of causal attributions persons make regarding imagined relapse to cocaine use. All participants were administered a demographics questionnaire, a drug use history questionnaire, a questionnaire assessing level of depression, and a personality inventory. Participants were also administered a questionnaire designed to measure the types of causal attributions persons make when thinking about potential instances of cocaine use following inpatient treatment, with three different outcomes (no use, use with return to abstinence, and relapse to regular use).

Statistical analyses of the scores from the attributional questionnaires, the depression questionnaire, and the personality inventory were used to measure the relationships among these factors.
APPENDIX G
Instructions Script

My name is Jim Pier, and I am a graduate student at Loyola University. The study in which you are being asked to participate is a preliminary investigation into the issue of relapse and cocaine dependence. You will be asked to fill out a packet of questionnaires. Some of the questions will ask for information about yourself, some will ask you to answer questions about your experiences with cocaine and other drugs, and others will ask you to consider some hypothetical situations involving cocaine use and to answer questions about these situations. The packet will take approximately one and a half hours to fill out. All of your answers will be anonymous and confidential. Please do not discuss your answers with each other in order to ensure that your answers are confidential. If any part of the instructions is unclear, please let me know and I will clarify them for you. You are encouraged to ask any questions regarding the study that may occur to you after you have completed the packet of questionnaires. Your participation is greatly appreciated.
APPENDIX H
### Summary of Nonsignificant Trends from Two-tail t-tests with Subjects Grouped By Drug Use

<table>
<thead>
<tr>
<th>Groups</th>
<th>Outcome</th>
<th>Attribution</th>
<th>t-score</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>no use &gt; drug use</td>
<td>abstinance</td>
<td>internal</td>
<td>1.93</td>
<td>&lt; .10</td>
</tr>
<tr>
<td></td>
<td>(self)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no barb &gt; use bar</td>
<td>abstinance</td>
<td>global</td>
<td>1.88</td>
<td>&lt; .10</td>
</tr>
<tr>
<td></td>
<td>(self)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>no LSD &gt; use LSD</td>
<td>abstinance</td>
<td>stable</td>
<td>1.88</td>
<td>&lt; .10</td>
</tr>
<tr>
<td></td>
<td>(self)</td>
<td>global</td>
<td>1.97</td>
<td>&lt; .10</td>
</tr>
<tr>
<td>no use &lt; drug use</td>
<td>slip (self)</td>
<td>composite</td>
<td>-1.77</td>
<td>&lt; .10</td>
</tr>
<tr>
<td>no marijuana &lt; use marijuana</td>
<td>relapse</td>
<td>composite</td>
<td>-1.80</td>
<td>&lt; .10</td>
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<tr>
<td></td>
<td>(self)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>no marijuana &gt; use marijuana</td>
<td>relapse</td>
<td>global</td>
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<td>&lt; .10</td>
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<tr>
<td></td>
<td>(self)</td>
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The **Groups** column gives the groups being compared, and indicates with a < or > which group's mean was greater for the specified outcome and attribution.

**Note:** barb = barbiturates; tranq = tranquilizers
References


Cognitive therapy of depression. New York: Guilford Press.


Crowder, R. (1982). Methadone-maintained males' reactions to success and failure: Causal attributions, self-
efficacy,

and attitudes toward heroin. Drug and Alcohol Dependence, 10, 367-381.


pharmacology, and treatment. A perspective on a new
debut for an old girl. Clinical Toxicology, 8, 149-
178.

Ginspoon, L., & Bakalar, J.B. (1980). Drug dependence:
Non-narcotic agents. In H.I. Kaplan, A.M. Freedman, &
B.J. Sadock (Eds.), Comprehensive textbook of
psychiatry (Third edition). Baltimore: Williams &
Witkins.

Gioia, D.A., & Sims, H.P., Sr. (1983). Attribution and
Verbal Behavior in Organizational Interaction.
Unpublished manuscript, Pennsylvania State University.


Graham, S., & Long, A. (1986). Race, class, and the
attributional process. Journal of Educational
Psychology, 78, 4-13.

theory and research: Still vital in the 1980s. In J.H.
Garvey & G. Weary (Eds.), Attribution: Basic issues and

attribution. Journal of Personality and Social
Psychology, 46, 44-56.

Multiphasic Personality Inventory - 2 MMPI-2): Manual
for Administration and Scoring. Minneapolis:
University of Minnesota Press.


Government Printing Office.


Romero, G., & Garza, R. (1986). Attributions for the occupational success/failure of ethnic minority and


263-270.


APPROVAL SHEET

The thesis submitted by James W. Pier has been read and approved by the following committee:

Dr. Isiaah Crawford, Director
Assistant Professor, Psychology, Loyola

Dr. Alan DeWolfe
Professor, Psychology, Loyola

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

Date
12-14-90

Isiaah Crawford, Ph.D.
Director's Signature