

Fall 1984

# SUBSTANCE ABUSE AND ATTRIBUTION

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Substance Abuse and Attribution

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A Dissertation

Submitted to the University of New Hampshire  
in Partial Fulfillment of  
the Requirements for the Degree of

Doctor of Philosophy

in

Psychology

September, 1984

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## ACKNOWLEDGMENTS

I would like to acknowledge the members of my committee for their patience in reading the numerous drafts of this dissertation.

I would also like to thank Jon Emerson for his painstaking editing of the early drafts of this project. More importantly, I would like to thank him for his moral and emotional support during the more traumatic aspects of this dissertation.



## DEDICATION

I would like to dedicate this dissertation to those people who are most important in my life:

To my husband, Jim, whose unwavering love and support made this project possible. His sense of humor and strong shoulders brought me through the troubled times, while his delight in my accomplishments made the good times outway the bad.

To my daughter, Lauren, whose upcoming presence was my most potent motivator. Since her arrival, the joy she has brought has made all the toil worthwhile.

Finally, to my parents, Roy and Lorraine Towell, who instilled in me the importance of education, and completion of any task once started. Their faith in my abilities never went unappreciated.

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## ABSTRACT

### Substance Abuse and Attribution

By

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September, 1984

The primary purpose of this study was twofold. First, an Attribution of Responsibility for Substance Use scale (ARSU) was developed with a sample of 140 university substance users and 69 substance abusers. Second, this study determined if the actor-observer hypothesis of traditional attribution theory (Jones and Davis, 1965) held using the ARSU.

The ARSU scale contains six questions which focus on an individual's reasons and perceptions of other individuals reasons for initiating and ending substance use. Subjects were also administered the 11 item Rotter's IE scale (Valecha, 1972).

Initial assessments indicated that the ARSU scale was valid and reliable for measuring perceived causes for substance use behavior. Evidence was also found that indicated the ARSU was superior to Rotter's scale for distinguishing between substance users and abusers.

The actor-observer hypothesis was not wholly supported. It was expected that individuals would agree more strongly

with external causes for initial substance use when referring to themselves rather than others. This pattern was not found.

For ending substance use, it was expected that individuals would place more emphasis on the internal reasons for their own cessation than for others. This pattern was found for university students. However, rehabilitation individuals placed equal weight on internal causes for both themselves and others. These individuals also rated external reasons as being very important for their own cessation.

These findings suggest that the fundamental attribution error (dispositional attributions made more frequently towards others, Ross; 1977), may not hold under all circumstances. In fact, attributions may change depending on a number of factors including the importance of the situation.

## I. INTRODUCTION

Attribution theory, as a psychological theory, is often utilized in attempts to understand substance abuse (eg. Naditch, 1975; Schilling and Carman, 1978). Attribution theory examines the rules people use to determine the causes of behavior (Jones, Kanouse, Kelly, Nisbett, Valins and Weiner, 1972). Individuals must share a common understanding of social actions and outcomes that affect them, for without such consensus, social interactions would be chaotic, unpredictable, and beyond the control of participants (Ross, 1977). Attribution theory treats actors as constructive thinkers who actively search for causes of behaviors and events and act upon them in ways that are consistent with the available knowledge, no matter how incomplete.

Attribution theory has developed out of three basic research categories in social psychology (Jones, et al, 1972). One category is concerned with factors motivating individuals to obtain causally relevant information. Research of this type examines the role of social comparison processes in assessing one's own abilities and the validity of one's opinions (Jones, et al, 1972). A second category of research examines the consequences of making one causal



attribution rather than another. These studies are traditionally concerned with identifying post decisional consequences of perceived control over one's own behavior (Jones, et al, 1972). Research in a third category evaluates the factors determining the causes assigned to given events, such as intention, ability, and task difficulty (Heider, 1958). Jones and Davis (1965) furthered this line of research to examine factors determining the causes influencing intentions and attitudes attributed to people. Attributions can be either internal or external. Internal attributions refer to presumed causal factors within the individual, such as personality characteristics, motives, or emotions. External attributions refer to the environment around the individual, including luck, chance, and significant others (Crandall, Katkovsky, and Crandall, 1965).

These categories of research are based on a number of assumptions. The individual seeks information in an attempt to assign causes for important instances of his behavior and that of others. Typically, the assignment of causes is determined in a systematic manner. The particular causes attributed to an event have important consequences for subsequent feeling and behavior. The "meaning" of events and subsequent reactions are determined to a large degree by assigned causes (Jones, et al, 1972).

Using attribution theory to describe substance abusers and their attributions has led to three contradictory

findings. First, researchers have found that actors cite external causes as reasons for their own substance abuse (Chess, Neuringer and Goldstein, 1971). Second, other researchers suggest that substance users believe that the causes of their abuse are internal in nature (Gross and Morosko, 1970). Third, the population of substance abusers consists of individuals who are either internal or external in nature external (Donovan and O'Leary, 1975).

There are many possible explanations for the discrepancies among research findings. One plausible explanation suggests that these discrepancies may be in part due to measurements made with general locus of control scales rather than drug specific scales. More accurate measurements might be found by using scales designed to measure specific areas of importance (Naditch and DeMaio, 1975). For this reason the Attribution of Responsibility for Substance Use scale (ARSU) was developed. The ARSU scale allows the researcher to investigate differences in drug specific attributions between substance abusers and users.

## II. ATTRIBUTION AND LOCUS OF CONTROL THEORY

### Attribution Theory

Attribution theory deals with the rules and regulations the "average person" uses in determining the causes of observed behavior (Jones, Kanouse, Kelly, Nisbett, Valins, Weiner, 1972). People are seldom content to observe behavior passively. Individuals prefer to be active perceivers of action, continuously engaged in the search for regularities that underlie observed behaviors. In other words, perceivers try to identify the causes of the behavior they observe. Since individuals can comprehend and process only a limited amount of information, making attributions about behavior simplifies one's world (Shaver, 1975).

### Heider's Naive Psychology

Heider (1958) was one of the first social psychologists to theorize about attributions. Heider's basic formulations which revolve around ideas of phenomenal causality and naive psychology led to contemporary attribution theory.

Phenomenal causality refers to the individual's subjective impression of causal connections between two or

more objects or events (Heider, 1958). Heider hypothesized that all people have a need to form coherent understandings of the world and a need to control the environment. It is important to predict how other people are going to behave in order to satisfy one's own needs. Without this ability, the world would appear to be a series of random events, with no logical connections.

Naive or "common sense" psychology is closely related to the idea of phenomenal causality. Heider (1958) suggested that everyone searches for causal explanations for other peoples' behavior. Heider felt that an "ordinary person's" common sense explanations of behavior were an important aspect of understanding interpersonal relations. Individuals have a strong need to seek understanding of the transient events they observe by attributing these events to enduring dispositional properties of the actor and/or to stable and invariant properties of the environment. The search for invariance in social others and environmental entities allows for both an understanding of current events and people, along with the prediction of future events and personal actions (Shaw and Costanzo, 1982).

Individuals shape their behavior as a function of the interpretation of events which vary predictably as a function of various personal and situational factors. At its most basic level, Heider's (1958) concept of naive psychology assumes that these interpretations rest on perceptions of personal or impersonal causality. The

distinction is explained by Heider in these terms:

Of great importance for our picture of the social environment is the attribution of events to causal sources. It makes a real difference, for example, whether a person discovers that the stick that struck him fell from a rotting tree or was hurled by an enemy. Attribution in terms of impersonal and personal causes and with the latter, in terms of intent, are everyday occurrences that determine much of our understanding of and reaction to our surroundings. (Heider, 1958, p.16).

Personal causality was used by Heider to refer to those instances in which an individual intentionally or purposefully produced an event or situation. Intentions of the person are central to the attribution of personal causality.

Impersonal causality is much less stable. Within impersonal causality there is no intentionality. According to Heider (1958) impersonal causality refers to a wide range of environmental conditions which leads to a wide range of effects. He states that:

Since no one condition bears the responsibility for creating other conditions necessary for a particular effect, any specific effect of a complex process requires the presence of a great many specific conditions. The more conditions required, the more unlikely it is that the same effect will occur (Heider, 1958, p. 102).

The effects of an impersonal event vary with circumstances which surround the event. If circumstances change, so do the effects of the impersonal event. These events usually arise from nonpersonal sources of the environment.

Heider (1958) stressed the fact that intentions are a central factor in personal causality. Individuals are held responsible for the outcomes of their actions only if the

act is seen as an indication of a motive. In a naive analysis of actions, given outcomes produced by a person are not always attributed to that person, but sometimes are attributed to environmental factors (Sahakian, 1982).

How do people determine their causal attributions? Heider (1958) suggested that people use the principle of invariance as a factor in making attributions. This principle states that people observe the behavior of others and look for regular, fixed effects of any given behavior. People look for associations between causes and effects across various situations. When the effect occurs only in connection with a cause, external attributions are made.

Heider (1958) did not empirically test his theories of attribution. In addition, Heider used everyday language while theorizing about the familiar and everyday life aspects of interpersonal relationships (Shaw and Costanzo, 1982). As a result, empirical testing of his theories is difficult.

Heider's distinction between personal and impersonal causality was developed further and tested by Jones and Davis (1965). Their theory of correspondent inferences concentrated on the various effects produced by actions. Even though perceivers do not always see the act, they can infer an underlying disposition from the effects of the act (Shaver, 1975). Perceivers have a choice of attributions which can be made. One of two states or

forces are usually seen as the reason for a person's behavior. These states or forces can be either internal or external. Internal causes come from within the individual. They include such components as personality traits, motives, emotions, moods, attitudes, abilities and effort. External causes emanate from the world around the individual. External causes include anything from the outside environment, such as those people with whom the individual interacts, role requirements, rewards, punishments, tasks, and the situational environment (Shaver, 1975). The principle of invariance is used in determining which causes (internal and/or external) are behind a person's behavior.

The notion of personal causality is treated within the Jones and Davis (1965) attribution model in such a way that persons as such cease to be considered as causal origins (Eiser, 1983). Because of this, intentions, to the perceiver, are the outcome of specific personality traits or dispositions of the actor. The view of common sense interpersonal descriptions proposed that intentions should be seen as causing behavior while traits cause intentions.

A problem with this model is that the distinction between reasons and causes is not clear. Looking for a causal origin of intentions de-emphasizes the person's intentions as a reason for actions in their own right. Buss argues that "causes and reasons are logically distinct categories for explaining different aspects of behavior" and

that "attribution theorists have tended to project an exclusively causal framework onto the lay explanation of all behavior and all explainers and are thus confused and confusing regarding causes and reasons" (1978, p. 1311).

A much clearer picture of attribution process comes from Kelley's (1967,1972) version of Heider's (1958) theory. Kelley (1967) defined an attribution as a process of perceiving the dispositional properties of entities in the environment. He accepted Heider's analysis of the perceptual process and the view that attributions may be made to either the person or the environment. He stated that the perception of dispositional properties provides a choice between external attribution (environment) or internal attribution (self).

Kelley (1971) proposed a number of causal principles which allow perceivers to sort through a number of causes for the one which is most plausible. Three of these principles are frequently used.

First, the covariation principle (Kelley, 1967) suggests that "an effect is attributed to the one of its possible causes with which, over time, it covaries" (p. 3). When there are two or more plausible causes for an effect, the one which the effect is consistently contingent with over time is seen as the stronger cause.

Second, the discounting principle states that "the role of a given cause in producing a given effect is discounted if other plausible causes are also present" (Kelley, 1971,



p. 8). This principle is likely to be employed when an effect is observed and more than one sufficient cause for that effect is known to the perceiver. The less plausible cause is discounted in favor of the more likely cause.

Third, the augmentation principle states that "if for a given effect, both a plausible inhibitory and a plausible facilitative cause are present, the role of the facilitative cause will be judged greater than if it alone were present as a plausible cause of the effect" (Kelley, 1971, p.12).

These principles allow for the logical processing of attributional information in limited information contexts. They depict perceivers as possessing mechanisms for deciding on the differential plausibility of various causes when more than one cause is present in the observational circumstance (Shaw and Costanzo, 1982).

Attribution research has shown that there is a tendency for actors to attribute their actions to the situation, rather than to the self. Observers, however, tend to attribute the same actions to the actor's personality characteristics (Jones and Nisbett, 1972). This difference in attributions of the same behavior is due to differences between the observer and the actor.

First, actors and observers have access to different information about the situation. Observers base their attributions on the present behavior of the actor, rather than on the history of the actor. The actor, on the other hand, has all the personal history and information

about internal states needed to judge the behavior as coming from the self or the environment (Jones and Nisbett, 1972).

The second difference between the actor and observer is the focus of attention. The observer focuses on actors and their behaviors, not the environment in which the behavior is taking place. The observer does not realize that the behavior may occur infrequently and therefore, not a part of the actor's personality or self. Actors approach the situation differently, not paying attention to their own behavior. Instead, actors focus their attention on the situation. As a result, actors frequently attribute their behaviors to the situation while observers attribute the actor's behavior to the individual (Jones and Nisbett, 1972; Shaver, 1975). This tendency of actors to attribute their behaviors to the environment or situation stems from the need to justify behavior that may have negative consequences (Jones and Nisbett, 1972).

This leads to the hypothesis that although two people are in the same situation, different attributions can be made to the self and to the other person. Evidence has been reported that supports the hypothesis that observers make different attributions than do actors.

Storms (1973) was able to demonstrate that differential perspectives can explain actor-observer

differences in attributions. Storms found that he could change the attributions by reversing the point of view from which actors and observers watched the behavior. Storms hypothesized that if actors watched themselves, they would attribute behaviors to their own dispositions, while observers placed in the role of the actor would change their attributions to reflect environmental causes.

Storms (1973) videotaped interactions between strangers getting acquainted. Two observers were asked to watch one of the actors. Tapes were made of each actor. When actors saw their own behavior (now taking on the role of observer), actors became more dispositionally (internally) oriented. When the observer saw a playback of the person to whom their actor had been responding, the attributions made became more situationally (externally) oriented.

Contemporary attribution theory has suggested that there are other sources of bias entering into the individual's attempt at understanding, predicting, and controlling the events that take place around him (Ross, 1977). Studies of systematic bias or distortion in judgment which lead the individual to misinterpret events result in findings which for the most part are discrepant with attribution theory. One such bias is the "ego-defensive" or "ego-enhancement" bias. This bias occurs when individuals attribute "successes" to their own efforts, abilities, and dispositions, while attributing "failures" to luck, task

difficulty, important others, or other external factors (Zuckerman, 1979; Bradley, 1978; Ross, 1977; Davis and Davis, 1972; Feather, 1969; Fitch, 1970; Wolosin, Sherman, and Till, 1973; Beckman, 1970; Freize and Weiner, 1971; Johnson, Feigenbaum, and Weibly, 1964). It has also been found that actors may give themselves more credit for success and less blame for failure than do observers evaluating the same outcomes (Beckman, 1970; Gross, 1966; Polefka, 1965).

Another bias or error is termed "the fundamental attribution error," which is the tendency for attributers to underestimate the impact of situational factors and to overestimate the role of dispositional factors in controlling behavior (Ross, 1977; Reeder, 1982). However, other researchers (Harvey, Town, and Yarkin, 1981; Harvey and McGlynn, 1982) assert that the tendency to make dispositional attributions does not represent a fundamental error. Dispositional qualities may represent explanations for behavior under certain circumstances. For these researchers, the tendency to make attributions to situational factors may just as likely represent a fundamental error as does the tendency to make attributions to dispositional characteristics.

While the work of Heider (1958) and other attribution theorists states that the actors look upon their behavior as externally or situationally determined, theorists interested in locus of control do not agree. They hypothesize that

individuals often have different views about the reasons for their behavior.

### Locus of Control

The theoretical background for locus of control comes from social learning theory (Phares, 1976; Rotter, 1966). Within this framework, a reinforcement strengthens an individual's belief that a certain behavior or event will lead to reinforcement in the future. Failure to receive such a reinforcement acts to extinguish that belief. As individuals have many experiences, they are able to distinguish those events that produce reinforcement from those that do not. Expectancies that a particular behavior or event will be followed by a reinforcer are developed and generalized. A generalized attitude, belief, or expectancy regarding the nature of the causal relationship between one's behavior and its consequences might affect a variety of behavioral choices in a large number of life situations. These generalized expectancies, along with the value of the behavior and potential reinforcers help to determine what behavior an individual might choose in a certain situation. Such expectancies result in characteristic differences in behavior to produce individual differences within a specific situation (Rotter, 1966; Lefcourt, 1982).

One of the first scales designed to identify people with different generalized expectancies or beliefs about their ability to influence their environment was developed by Phares (1957). This scale consisted of 13 skill items and

13 chance items. Phares found that external items were poor predictors of an individual's actual behavior. In general, this scale was not accurate at differentiating individuals with different loci of control.

James (1957) improved upon Phares' work by revising the scale. James was able to show that externals rated their success on a task as if they had been given chance instructions (sometimes they worked, sometimes they didn't). The internals on the other hand, given the same instructions, rated their success as due to skill, rather than luck.

The idea that people believe their lives to be controlled by themselves or by society and others was supported by Julian Rotter and associates (Maddi, 1976). Although the scale devised by James had been used quite successfully, Liverant, Rotter, and Seeman expanded the test to measure internal and external locus of control (Rotter, 1966). Internal and external control are defined as follows:

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, or fate, as under the control of powerful others, or as unpredictable because of great complexity of the forces surrounding him...we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control (Rotter, 1966, p.1).

Rotter and his colleagues constructed the Internal-External Locus of Control Scale (IE Scale) so it would capitalize on

functional relationships between various goals and reinforcements. Rotter's scale contained a number of content domains - academic, recognition, social-political events, social recognition, love, dominance, and general life philosophy (Phares, 1976). These items were administered in the form of a forced-choice questionnaire. The first version included one hundred items. This was later reduced to a sixty item scale. Through item analysis it was found that items on the various subscales were highly correlated with each other. As a result, items designed to measure more specific subareas of internal-external locus of control were abandoned. Further analysis on the sixty item test revealed that it was possible to reduce the number of items even further. At present, the IE scale is comprised of 29 forced choice items, including six filler items (Rotter, Liverant, and Crowne, 1961). A short form containing eleven items from this test was recently developed (Valecha, 1972). The scale is additive in design, with items sampling IE beliefs across a range of situations. Rotter's IE scale (1966) and its shortened version measure a generalized expectancy (Phares, 1976). Much of the drug and alcohol abuse work has included this scale (examples: O'Leary, Donovan, Hague, and Shea, 1975; O'Leary, Donovan, and O'Leary, 1976; Schofield, 1978; Obitz, 1978).

Rotter's Internal-External Locus of Control Scale (1966) is only one way to determine control orientation of the individuals. It has been suggested that Rotter's scale

is an universal scale because it measures the individual's orientation to life in general. Predictions should be enhanced when locus of control is measured separately for the different areas of life (Phares, 1976; Lefcourt, 1982). Despite the scalar homogeneity of Rotter's IE scale, Crandall, Katkovsky, and Crandall (1965) found that beliefs across reinforcement areas were inconsistent and nongeneralizable. Locus of control has its most accurate measure in areas that are important to the individual (Naditch and DeMaio, 1975; Donovan and O'Leary, 1978).

Various researchers have found multidimensionality within Rotter's IE scale (1966). Reid and Waire (1973, 1974) found that responses to items which pertained to beliefs about control of impulses, drives and emotions were independent from the personal control and social systems control factors of Rotter's scale. Collins (1974) separated the forced choice items from Rotter's scale, changing it to a 46 item Likert scale. He found that the internal and external items were not related to each other. After factor analysis, Collins found that the scale consisted of four factors, which led him to the conclusion that sources of unpredictability are distinguishable and uncorrelated.

Rotter's (1966) Locus of Control Scale has been criticized for being too global in its item domain. Predictions across researchers have been found to vary widely due to the general nature of the IE scale. To correct for this problem, Lefcourt (1982) suggests that



investigators should devise locus of control measures which are specifically aimed at various reinforcement areas. Reid and Ziegler (1981) have created The Desired Control Measure, which measures the concern for and the expectation of control for those outcomes or events that were commonly desired by the elderly. This scale has been used successfully to predict adjustment and illness among the elderly a year after initial assessments (Reid, Hass, and Hawkings, 1977; Reid and Ziegler, 1977; Ziegler and Reid, 1979).

Paulhus, Moln and Schuchts (1979) investigated the control profiles of high school varsity football and tennis players, and non-athletes. Using the Spheres of Control Scale, the researchers were able to predict the control pattern of each population on the basis of general character descriptions. The athlete groups were correctly predicted to have higher Personal and Interpersonal Control scores than non-athletes. They also found evidence that an athlete's expectancy for control is a function of whether or not the sport was in season. The seasonal changes give evidence that perceived control is subject to influence by important life events (Paulhus and Christie, 1981).

Hill and Bale (1981) constructed two scales which pertain to mental health: The Mental Health Locus of Control Questionnaire, concerning the responsibility for progress in therapeutic situations, and The Mental Health Locus of Origin Scale, which measures the beliefs about the

development of mental illness. Hill and Bale suggest that their scales are useful in explaining the development of various types of pathology as well as enhancing the pairing of clients and therapists.

Wallston, Wallston, Kaplan, and Maides (1976) developed a Health Locus of Control scale (HLC) in an attempt to relate locus of control to health care situations. Internals on this scale are thought to hold beliefs that control of health is a result of one's own behavior. Externals hold the belief that they have little control over their health. The investigators compared scores on the HLC and information seeking. Information seeking was operationalized by having subjects choose from a list of 16 pamphlets concerned with hypertension. Individuals who scored internally on the HLC were found to select more pamphlets than externals. Toner and Manuck (1979) found that individuals who scored internal on the HLC were more likely than the externals to select pamphlets concerning heart disease. DeVito, Bogdanowicz, and Regnikoff (1982) found that internals requested more health related information than externals.

The HLC scale (1976) was also used as a predictor of smoking reduction. Kaplan and Cowles (1978) found that individuals who felt health was an important issue and expressed internal locus of control beliefs were more successful in reducing smoking behavior and maintaining behavior change than those who expressed external locus of control beliefs. Wildman, Rosenbaum, Framer, Keane, and

Johnson (1979) found similar results with HLC internals smoking significantly less often than externals after treatment.

Worell and Tumilty (1981) developed the Alcoholic Responsibility Scale (ARS) to measure locus of control specific to the domain of alcoholics' drinking. The format of this scale is like that of Rotter's IE scale (1966). This same external individual when measured by the ARS scale tended to have a father with a drinking problem, be a spree rather than a daily drinker, to have been repeatedly treated for alcoholism, to have experienced aggressive paternal control and lax maternal control, to have experienced high levels of depression and hostility, and to do poorly on job performance. These researchers found that the external alcoholic as measured by Rotter's IE scale was likely to drink on the job, to be single, to have been subjected to a aggressive paternal control, and to experience higher levels of depression. Worell and Tumilty interpreted these findings as indicating that the ARS scale provided a fuller description of the external alcoholic than Rotter's IE scale.

Rotter's (1966) IE scale has been found to be adequate when measuring life orientations in general. However, Phares (1976) has suggested that the IE scale may not be as accurate when investigating a specific area of life. The area specific scales cited above, give evidence to indicate that greater specification of criteria and predictor

characteristics can enhance and clarify hypothesized locus of control relationships (Lefcourt, 1981). Thus, to determine specifically how substance users feel about their drug use a substance specific scale rather than Rotter's scale should be used.

### III. ATTRIBUTION AND SUBSTANCE USE:

#### A LITERATURE REVIEW

Three situations are of primary interest to attributional studies of substance abuse: substance users' attributions about themselves, non-substance user attributions about substance users, and substance user attributions about hypothetical others. A fourth situation which has largely been ignored occurs when substance users make attributions about themselves and other users. Many of these studies are based on the theoretical assumptions of attribution theory.

One can apply the actor-observer hypothesis of attribution theory (Jones and Davis, 1965) to the area of substance abuse. Actors are expected to cite more external (environmental or uncontrollable factors) causes of their own behavior and more internal personal causes of others behavior. Unfortunately, careful examination of the literature does not support this assumption. In fact, a good portion of the literature is contradictory in nature (Krampin, 1980; Rohsenow and O'Leary, 1978; Weissback, Vogler, and Compton, 1976). To date, research can be divided into three groups of findings.

One group of data supports Jones and Davis (1965), suggesting that individuals attribute primarily external causes for their behavior (Butts and Chatlos, 1973). Other researchers find attributions made by substance users are only internal in nature (Oziel, Obitz, and Keyson, 1972). Finally, other researchers find that substance abusers attribute both internal and external causes for their behavior, similar to the general population (Erickson, Smyth, Donovan, and O'Leary, 1976). A review of the literature is crucial since findings are contradictory in nature. It is unclear if specific attributions cause substance abuse, or if the abuse leads to a change in these attributions.

Robinson (1976 as cited in Frieze, Bar-Tal, and Carroll, 1979) found that 75 percent of people who had a drinking problem, or knew someone with one, cited social pressures as the primary cause behind drinking problems in general. This was taken by Robinson to indicate an external attribution of causality. Those people who did not have a drinking problem nor knew of anyone with one felt personal problems, loneliness, and inability to resist social pressures, as reasons to begin drinking. Robinson suggested these individuals were internally oriented.

Excessive drinkers from a Veterans Administration hospital were studied by Butts and Chatlos (1973). Using Rotter's IE scale (1966) they found that alcoholics were more external in orientation than a matched sample of non-

alcoholics.

Female alcoholics residing in halfway houses scored higher on the IE scale than female social drinkers, indicating a greater external orientation of control. In fact, externality in locus of control increased with severity of drinking (Naditch, 1975).

Schilling and Carman (1978) investigated locus of control and alcohol use in high school students. They reported that an external orientation was positively related with early drinking patterns. Similar findings were reported by Cox and Luhrs (1978). They reported a higher proportion of drinkers with external orientations than internal. Within this same sample, no differences in locus of control were found among high school students who used marijuana.

Krampton (1980) measured 56 non-alcoholics and 50 alcoholics on five aspects of expectation, including loss of control. Alcoholics were found to be more external in locus of control than were the non-alcoholics. Krampton also found that alcoholics were external on both the powerful others control orientation scale and chance control orientation scale.

The researchers cited above (Robinson, 1976; Naditch, 1975; Schilling and Carman, 1978; and Krampton, 1980), support the view that alcoholics are characterized by an external locus of control. The external orientation is an indication of loss of internal control over underlying

social reinforcements (Butts and Chatlos, 1973; Norwicki and Hopper, 1974).

Some researchers report findings that are inconsistent with these. One study reporting alcoholics to have an internal locus of control was done by Oziel, Obitz, and Keyson (1972). Rotter's IE scale was administered to 50 alcoholics (inpatients and outpatients) involved in alcohol treatment programs. Analysis of scores on Rotter's IE scale (1966) indicated that alcoholics believed themselves to be in control of their drinking behaviors (individuals had an internal control orientation).

Distefano, Pryer, and Garrison (1972) administered Rotter's IE scale to 50 alcoholic and 50 emotionally disturbed males. Alcoholics scored lower than emotionally disturbed individuals on the IE scale, indicating an internal locus of control. The internal orientation of alcoholics was taken to reflect an alcoholic's beliefs about individual control over reinforcement.

Gozali and Sloan (1971) administered the Rotter (1966) IE scale to 55 alcoholics and 98 non-alcoholics. Alcoholics felt alcoholism was a consequence of their own actions and under their control. Similar findings were reported by Gross and Nerviano (1972) when studying detoxified males admitted to alcoholic treatment programs.

Tarnai and Young (1983) administered the Andrew



Alcoholism Scale to alcoholics and staff at various treatment centers (no mention was made as to type of treatment). Alcoholics were found to score in the internal direction, while non-alcoholics scored in the external direction. Cox and Baker (1982) obtained similar results with Rotter's IE scale when studying males with heavy wine consumption.

Studies involving drug abusers report similar findings. Smithyman, Plant, and Southern, (1974) compared Rotter's "normal" population to groups of heroin users and those using multiple substances. Both groups of drug users scored lower on the scale than did "normals," indicating that drug abusers have a more internal orientation than the overall population. This same relationship was found using Rotter's IE scale for opiate addicts (Berzins and Ross, 1973).

Some researchers have found that alcoholics can have either external or internal orientations. Erickson, Smyth, Donovan, and O'Leary (1976) gave 160 adult male alcoholics Rotter's IE scale and Whitkin's psychological differentiation construct. Both external and internal alcoholics were found. External locus of control was associated with a measure of psychopathology. Internal alcoholics were more avoidance oriented and used more functional defenses as measured by the MMPI.

Another study (Pryer and Distefano, 1977) examined

the relationship between locus of control and other psychometric adjustment measures among male alcoholics. Using Rotter's IE scale, three groups of individuals were identified as internal, moderate, and external scores. Locus of control was not independent of other constructs, with internal alcoholics demonstrating more achievement motivation and a more positive outlook for the future than external or moderate alcoholics.

These findings have implications for the success of therapy. If there are differences in locus of control among alcoholics as suggested, then groups which are success oriented should have a higher probability of recovery as they remain in therapy longer.

Early withdrawal from rehabilitation programs has always been a problem. Rates of withdrawal against medical advice range from 25 (Huber and Danehy, 1975; Miller, Pokorny, and Hanson, 1968) to 32.5 percent (Schofield, 1978) for alcoholics. Schofield (1978) found a higher early withdrawal rate for externals than internals.

Caster and Parsons (1977) studied male alcoholics receiving either inpatient or outpatient therapy. An external locus of control was associated with unfavorable treatment outcomes. Internal alcoholics were more successful in therapy.

Studies have shown that as treatment progresses, alcoholics become more internal in their orientation. O'Leary, Donovan, Hague, and Shea (1975) investigated the

changes that occur from pre- to post-treatment. Rotter's IE scale was administered to 40 male veteran alcoholic inpatients. The patients' perceived locus of control was found to be more internal after therapy. O'Leary, Donovan, and O'Leary (1976) found that alcoholics had more personal control over their behavior due to various inpatient therapies. Similar work by Kennedy, Gilbert, and Thoreson (1978) found that all subjects increased control over internal stresses during treatment. Internals also showed an increase in control over external stresses.

Each of the studies reviewed above focused on the substance abusers' view of their own problems, and the various changes which take place within the individuals. A second aspect of substance abuse which might affect treatment outcome are substance abusers' perceptions of their own abuse and their attributions about other persons' use. For instance, peer treatment programs which emphasize group cohesiveness and empathy would have little success if different attributions were held for self and others.

Few studies investigate a substance abuser's attributions about their own and another person's substance use. The research that has been done has been conducted only with alcoholics.

Beckman (1979) chose 120 male and 120 female alcoholics from private and public treatment centers. Individuals were given a questionnaire with the following instructions:

People in the health field have suggested a variety of reasons why people have problems with

the use of alcohol. Below are some statements people have made about the causes of drinking problems. In general, who or what do you think is responsible for (or causes) most persons' drinking problems?

The question was repeated in regard to one's own drinking problem. Ratings were made on a four point scale. Seven factors were included as causes for their problem: other people (spouse, friends), distressing events (death, divorce), environment (job, marriage), heredity, themselves, weakness (alcoholism is an illness), or fate.

Male and female alcoholics showed similar patterns of response on both questions. In an analysis of difference scores (attributions of own minus attributions of others' drinking), Beckman found alcoholics did not displace blame for their own drinking onto external factors as has been suggested by Jones and Davis (1965) and Jones and Nisbett (1972). Alcoholics were found to take responsibility for their drinking related behaviors.

The disagreement with expected actor-observer differences could be due to a number of factors. The basic instructions referring to "people in the health field" may have caused alcoholics to respond in such a way as to agree with the "experts." Also, Beckman does not report the type and stage of treatment for alcoholics. The alcoholic may be near the end of treatment, or in a treatment which stresses personal responsibility, resulting in internal orientations (Walker, Nast, Chaney, and O'Leary, 1979; O'Leary, Donovan, Hague, and Shea, 1975). This might not be the

case during early stages of treatment, or in treatments which stress "dryout" without therapy.

A second study, (Strafford, 1982) reported on alcoholics' view of their drinking behavior using the Locus of the Drinking Problem Scale. This scale includes dimensions of control, responsibility, choice, blame, and problem causality. Strafford found that an alcoholic's pattern of responses to individual items frequently emphasized external alternatives with regard to responsibility but internal alternatives with regard to blame.

From the evidence presented above, it would seem possible to pinpoint reasons for contradictory findings. Poor reporting of treatment durations could contribute some inconsistencies (Emrick and Hansen, 1983). This distinction is important since there is evidence which indicates that individuals with external locus of control drop out early in treatment. Rollnick and Heather (1982) found that many outcome expectations created in therapy seem to promote treatment dropout and abstinence. Strafford (1982) felt that different expectations could result from different locus of control orientations toward alcoholism between treatment personnel and alcoholics. Treatment personnel regarded alcoholics as more responsible, less in control, and less blameworthy than the alcoholics viewed themselves. These attitudes influence the prognosis of alcoholic patients (Blane and Hewitt, 1977; Dorsch and

Talley, 1973; Jones and Helrick, 1972; Mendelson, Wexler, Kubzansky, Harrison, Leiderman, and Solomon, 1964; and Sowa, and Cutter, 1974). Individuals with different expectations may need different types of therapy (Bander, Stilwell, Fein and Bishop, 1983). When research is conducted during early stages of treatment many external individuals are still present. If the study was done later in treatment, these individuals may have already dropped out.

Better reporting of treatment durations is also crucial since externally oriented individuals may have already changed their orientation in latter stages of treatment (Oziel and Obitz, 1975). Without knowing the stage of treatment in which individuals are engaged, comparisons cannot be made across studies. However, as already pointed out, these comparisons are often made.

Another reason for contradictory findings concerns the actual focus of research. Some studies focus on determining how substance abusers view their own usage. Other research attempts to determine the views of subjects who are substance abusers or non-abusers by asking questions about hypothetical others. These variables need to be taken into account before any reliable conclusions can be made.

In view of the criticisms of Rotter's IE scale (1966), and the successful use of area specific locus of control scales, an attribution of causality scale designed for substance use might yield more accurate measurements than Rotter's general scale. The purpose of of the first study

was to develop such a scale.

#### IV. STUDY ONE: TEST DEVELOPMENT

##### Method

##### Sample

Subjects consisted of 159 (63 males, 96 females) University of New Hampshire students. The majority of the subjects were single (97 %), ranging in age from 16 to 29 (mean age was 19.00, standard deviation was 2.14). The family income of most subjects (59 %) was greater than \$25,000. Most of the individuals were Catholic (n = 89) and rated themselves as moderately religious (Table 1) . Of these students 9 (5.67%) reported never having used any substances listed on the survey, while 10 (6.29%) indicated having stopped using all substances. These individuals were eliminated due to their small numbers, leaving 140 subjects (57 males, 83 females) who reported current use of at least one substance on the survey. Initial age of drug use and current use can be found in Tables 2 and 3.

##### Instrument

The questionnaire used in this study (Appendix A) consisted of a number of questions which were designed by the author to determine the responsibility individuals took for their substance use. The questionnaire also included Rotter's Internal-External Locus of Control Scale (11 item



Table 1

## Demographic Information of University Students

Variable	Categories	N	Percent
Gender:	Males	57	40.7
	Females	83	59.3
	Total	140	100.0
Religion:	Protestant:	33	23.9
	Catholic:	89	64.5
	Jewish:	2	1.4
	Other:	5	3.6
	None:	9	6.5
	Total	138	100.0
Family Income:	\$ 0 ≤ \$ 5999	3	2.3
	\$ 6000 - \$ 9999	7	5.3
	\$10000 - \$14999	7	5.3
	\$15000 - \$19999	11	8.3
	\$20000 - \$24999	25	18.9
	\$25000 +	79	59.9
	Total	132	100.0
Education:	High school	118	85.6
	Vocational/tech	10	7.2
	College	10	7.2
	Total	138	100.0
Marital Status:	Single	135	97.8
	Married	3	2.2
	Total	138	100.0

Table 2

## Age at Time of Initial Substance Use

Subjects Currently Enrolled at University of New Hampshire

Drug	Mean	Std.Dev.	N
Alcohol:	15.0	1.84	140
Sedatives/Tranquilizers:	17.0	2.82	23
Depressants:	16.1	1.68	16
Stimulants:	16.5	1.54	57
Opiates:	16.2	2.36	7
Hallucinogens:	15.9	1.81	78
Heroin:	0.0	0.00	00

Table 3

## Drug Specific Demographic Information

## University of New Hampshire Subjects

Drug	Ever Used N	%	Currently Using	%
Alcohol:	140	100.00	140	100.00
Sedatives/ Tranquilizers:	23	16.40	9	6.42
Depressants:	16	11.40	5	3.57
Stimulants:	58	41.40	35	25.00
Opiates:	7	5.00	1	0.71
Hallucinogens:	78	55.70	41	29.28
Heroin:	0	0.00	0	0.00

scale) (Valecha, 1972), demographic questions and questions concerning actual substance use.

#### Demographic Questions

Subjects were asked to respond to a number of demographic items. These items included questions on gender, age, religion, degree of religiousness, family income, completed schooling and marital status.

#### Rotter's Internal-External Locus of Control Scale

The short form of Rotter's IE scale, composed of eleven items which each consist of two statements (one internal and one external), was administered (Valencha, 1972). For each item, participants were asked to read each of the two statements and indicate the one they agreed with most. Internal responses were scored as 1; while external responses were scored as a 2. A total score was obtained by summing the scores over all questions. On this scale, high scores indicate an external control orientation, while low scores indicate an internal orientation. The internal consistency of Rotter's 11 point IE scale is reported to range between 0.65 and 0.79 (Rotter, 1966; Valencha, 1972).

#### Attribution of Responsibility for Substance Use Scale

The attribution of responsibility section consisted of four questions developed by the author (see Appendix A). Each question asked for ratings of importance of various items responsible for substance use such as "their upbringing" or "they feel happier and are able to enjoy life

more." Two additional filler questions concerning prevention strategies and drug abuser characteristics were included. Items were chosen from social-psychological and sociological approaches to substance abuse.

#### Item Selection

Items were based on Beckman's (1979) study of causes for peoples' drinking problems. Additional items were chosen from the social-psychological and sociological theories of substance abuse. Appendix C is a discussion of these and a number of other approaches.

#### Item Scoring

The participants rated how important items were on a seven point scale from one (not important) to seven (very important). A seven point scale was chosen to maximize reliability. Reliability of individual rating scales is a monotonically increasing function of the number of steps (Guilford, 1954). As the number of steps increase, reliability increases, leveling off at seven steps. Little gain in reliability results from increasing the steps beyond seven (Nunnally, 1970). Four indicated a neutral category, with equal spacing on either side to eliminate biased responding (Berdie and Anderson, 1974). Nunnally (1970) suggested that a neutral category was provided, as many individuals do not have an opinion. He felt the fact that many individuals do not have an opinion should be measured. This is preferable to forcing individuals to respond to items about which they have no opinion or knowledge (Berdie

and Anderson, 1974; Jahoda, Deutsch and Cook, 1962; Payne, 1951). A neutral category has also been found to make subjects feel more comfortable in making selections, which leads to more accurate ratings. Although many consider that a neutral or uncertain category offers the respondent an easy way out, the above considerations were felt to outweigh this negative aspect.

#### Substance Use Questions

Various questions were included in this survey to assess the individual's past and present substance use. Subjects were asked to indicate which substances they had used and at what age they started and discontinued use of each substance. Substances which were included in the questionnaire were alcohol, sedatives/tranquilizers, depressant, stimulants, opiates, hallucinogens and heroin.

#### Procedure

Questionnaires were administered by the experimenter or one of two trained assistants. Standard directions were given orally. Any questions about procedure were answered at that time. Participants were asked to fill out the questionnaire. The following instructions were given to each subject:

"Please fill out the questionnaire as completely and truthfully as possible. You need not answer any question which you might find offensive. You are guaranteed anonymity and all information will be confidential and will be treated as group data

only."

Subjects were debriefed when the session concluded.

## Results

### Analysis Plan

Responses to questions concerning attribution of responsibility for substance use were subjected to item analysis, estimates of reliability, and factor analysis using programs of the Statistical Package for the Social Sciences (Hull and Norman, 1979). The factor analysis represented a principal factoring with iterations. Factors were rotated to meet Kaiser's (1958; Bennet and Bowers, 1976) Varimax criteria. The minimum eigenvalue for factor inclusion was 1.0.

Items with factor loadings less than 0.40 were considered as not contributing to the overall meaning of factors and were eliminated. This allowed the scale to become shorter, as well as increasing the reliability of the scale (Ghiselli, Campbell and Zedeck, 1981). The factor loadings for all retained items, variance accounted for by the various factors, along with corresponding means and standard deviations are given in tables 4 to 11.

Reliability. The internal consistency measurement used to estimate the reliability of the Attribution of Responsibility of Substance Use scale was Cronbach's alpha (1951). This method of reliability measures the homogeneity (amount of correlation between the item responses) of the test (Nunnally, 1970). This test is equal to the average of all possible corrected split-half reliability coefficients (Ghiselli, Campbell and Zedeck, 1981). The alpha



Table 4

## Means and Standard Deviations of Factor Items

Why do most people begin using drugs?

Item	Mean	Std.Dev.
They like themselves better	4.43	1.51
Their parents use alot of prescription drugs	3.61	1.63
They feel more comfortable with others	5.20	1.26
They feel happier and are able to enjoy life more	4.95	1.42
They don't have a job	4.25	1.48
They have family problems with parents/spouse	5.44	0.99
Death in the family	4.35	1.49
They have financial problems	4.71	1.37

Table 5  
Varimax rotated factor loadings

Why do most people begin using drugs?

Item	Factors	
	Self esteem	Family/ financial
They like themselves better	0.80*	-0.11
Their parents use a lot of prescription drugs	0.41*	0.26
They feel more comfortable with others	0.53*	0.01
They feel happier and are able to enjoy life more	0.60*	-0.13
They don't have a job	-0.13	0.51*
They have family problems with parents/spouse	-0.08	0.71*
Death in the family	0.22	0.41*
They have financial problems	-0.03	0.57*
Eigenvalues	2.22	2.05
Percent of Variance	20.20	18.60
Cronbach's Alpha	0.64	0.60

\* items having high factor loadings

Table 6

## Means and Standard Deviations of Factor Items

Why do most people stop using drugs?

Item	Mean	Std.Dev.
They were arrested	4.05	1.58
They were pressured by family	4.17	1.40
They were pressured by conselors	4.15	1.38
Medical reasons	5.32	1.34
Jail sentences	4.84	1.69
Pressure from work/school	4.34	1.45
Effects on personality	4.60	1.55
Effects on how they interact with others	4.78	1.43
They or their partner became pregnant	4.69	1.61
Education	4.62	1.33
They just made up their minds to stop	4.79	1.71
They disliked the people they associated with	4.32	1.54
Became more self-assured	5.22	1.39

Table 7

## Varimax Rotated Factor Loadings

Why do most people stop using drugs?

Item	Factors		
	Outside pressures	Lifestyle	Self improvement
They were arrested	0.55*	-0.04	0.02
They were pressured by family	0.74*	0.10	0.11
They were pressured by conselors	0.65*	0.13	0.08
Medical reasons	0.51*	0.23	-0.01
Jail sentences	0.49*	0.04	0.11
Pressure from work/school	0.30	0.46*	-0.02
Effects on personality	0.00	0.73*	0.28
Effects on how they interact with others	0.08	0.79*	0.34
They or their partner became pregnant	0.05	0.45*	-0.07
Education	0.07	0.02	0.58*
They just made up their minds to stop	-0.04	0.02	0.61*
They disliked the people they associated with	0.20	0.25	0.51*
Became more self-assured	0.10	0.05	0.63*
Eigenvalues	3.42	1.98	1.60
Percent of Variance	26.30	15.30	12.40
Cronbach's Alpha	0.74	0.70	0.67

\* items having high factor loadings

Table 8

## Means and Standard Deviations of Factor Items

Why did you begin using drugs?

Item	Mean	Std.Dev.
I was without a job	1.77	1.28
My parents drank heavily	2.33	1.90
I had financial problems	2.32	1.73
Upbringing	2.60	1.95
Divorce from my spouse	2.02	1.64
Parents are divorced	2.16	1.79
Death of parent/spouse	2.40	2.05
Death of offspring	2.26	1.95
Death of sibling	2.15	1.80
Parents use alot of prescription drugs	1.79	1.32
I feel more comfortable with others	3.34	1.98
I like myself better	2.79	1.78
I feel happier and enjoy life more	3.34	1.98
To hide problems	3.66	2.19
I liked the effects	4.76	2.10

Table 9  
Varimax Rotated Factor Loadings

Why did you begin using drugs?

Item	Factors	
	Family/ financial	Self esteem
I was without a job	0.68*	0.16
My parents drank heavily	0.69*	0.28
I had financial problems	0.65*	0.23
Upbringing	0.66*	0.31
Divorce from my spouse	0.88*	0.18
Parents are divorced	0.90*	0.20
Death of parent/spouse	0.80*	0.14
Death of offspring	0.91*	0.06
Death of sibling	0.89*	0.11
Parents use a lot of prescription drugs	0.64*	0.33
I feel more comfortable with others	0.11	0.75*
I like myself better	0.21	0.81*
I feel happier and enjoy life more	0.13	0.80*
To hide problems	0.38	0.51*
I liked the effects	0.11	0.55*
Eigenvalues	7.74	2.29
Percent of Variance	51.70	15.30
Cronbach's Alpha	0.94	0.81

\* items having high factor loadings

Table 10

## Means and Standard Deviations of Factor Items

Why did you stop using drugs?

Item	Mean	Std.Dev.
Became involved religiously	2.93	2.04
I disliked the people I associated with	3.78	2.31
Change of jobs	2.75	2.01
Change of lifestyle	3.48	2.26
I or my partner became pregnant	2.78	2.40
I could not get along with family members	3.00	2.25
Jail sentences	2.42	2.15
Education	4.18	2.31
Medical reasons	4.57	2.48
Pressures from work/school	3.78	2.24
Effects on physical health	5.12	1.99
Effects on personality	4.45	2.26
Effects on how I interact with others	4.21	2.24
Became more self assured	4.51	2.07

Table 11  
Varimax Rotated Factor Loadings

Why did you stop using drugs?

Item	Factors	
	Lifestyle	Self improvement
Became involved religiously	0.78*	0.37
I disliked the people I associated with	0.69*	0.14
Change of jobs	0.63*	0.23
Change of lifestyle	0.60*	0.30
I or my partner became pregnant	0.81*	0.16
I could not get along with family members	0.80*	0.32
Jail sentences	0.64*	0.38
Education	0.12	0.69*
Medical reasons	0.22	0.60*
Pressures from work/school	0.24	0.63*
Effects on physical health	0.25	0.70*
Effects on personality	0.32	0.74*
Effects on how I interact with others	0.25	0.77*
Became more self assured	0.32	0.65*
Eigenvalues	6.99	1.83
Percent of Variance	49.90	13.10
Cronbach's Alpha	0.89	0.85

\* items having high factor loadings



coefficient was computed for each factor and question as well as for the entire test. Reliability of the various factors ranged from 0.60 to 0.94. The reliability for the overall test was moderately high ( $\alpha = 0.71$ ). Rotter's 11 item scale (Valencha, 1972) yielded a reliability estimate of 0.58 for this sample.

Factor Analysis. Questions one and five both dealt with reasons for beginning drug use. Factor analysis of the first question, "Why do most people begin using drugs?" resulted in two factors; self-esteem and family/financial stress. The factor self esteem included items such as "They feel more comfortable with others," and "They like themselves better". The other factor, family/financial stress was made up of items which referred to problems relating to the family and lack of financial support. Before rotation, these accounted for over 40 % of the total variance. The fifth question was phrased specifically to deal with an individual's reasons for beginning drug use. The factor analysis resulted in two factors, accounting for over half the total variance. The items on this question were categorized into family/financial stress and self-esteem. These factors contained similar items as the family/financial stress and self-esteem factors for the first question.

Questions two and six were designed to measure the reasons for stopping substance use. Question two was phrased generally, while question six was oriented toward the participant's reasons for no longer using various

substances. The factor analysis of the second question lead to three factors. The first reflected pressures from legal sources, family, friends, and counselors. This factor was labeled outside pressures. The items in the second factor reflected a change in personal lifestyle, which included items which dealt with changes in personality and interactions with others. The final factor reflected changes within the self, such as education and becoming more self assured. This factor was labeled self improvement. Two factors resulted from the factor analysis of question six, which accounted for over half the total variance. The items on this question were catagorized into a change in lifestyle, and self improvement. These factors represented items similar to those represented in the second question and could easily be classified into internal and external items.

Discriminant Validity. Discriminant validity was evaluated for overall questions of the ARSU scale, as well as for subscales derived through factor analysis. Overall questions and subscales were correlated with responses on Rotter's IE scale. It was hypothesized that scores on the ARSU scale, as a measure of specific locus of control, would show moderate or small correlations with Rotter's generalized control orientation. This hypothesis was confirmed (Table 12). Scattergrams revealed no evidence for a curvilinear relationship between Rotter's scale and any question or factor of the ARSU scale.

Table 12

Correlations Between Rotter's IE Scale  
and Questions and Factors of the ARSU

Questions and Subscales	r	r <sup>2</sup>	p*
Question 1.	0.09	0.00	0.12
Males alone	0.28	0.08	0.01
Females alone	-0.00	0.00	0.48
Self Esteem	-0.01	0.00	0.48
Males alone	0.09	0.00	0.23
Females alone	-0.03	0.00	0.36
Family/Financial	0.20	0.04	0.00
Males alone	0.39	0.15	0.00
Females alone	0.07	0.00	0.26
Question 2.	0.14	0.02	0.04
Males alone	0.06	0.00	0.33
Females alone	0.19	0.03	0.04
Outside Pressures	0.05	0.00	0.25
Males alone	-0.01	0.00	0.45
Females alone	0.11	0.01	0.15
Lifestyle	0.23	0.05	0.00
Males alone	0.10	0.01	0.21
Females alone	0.29	0.08	0.00
Self Improvement	0.00	0.00	0.39
Males alone	0.04	0.00	0.36
Females alone	-0.00	0.00	0.49

Table 12 (cont)

Correlations Between Rotter's IE Scale  
and Questions and Factors of the ARSU

Questions and Subscales	r	$r^2$	p*
Question 5.	-0.00	0.00	0.48
Males alone	0.20	0.04	0.07
Females alone	-0.18	0.03	0.07
Financial/Family	0.01	0.00	0.42
Males alone	0.20	0.04	0.07
Females alone	-0.12	0.01	0.16
Self Esteem	-0.04	0.00	0.32
Males alone	-0.00	0.00	0.49
Females alone	-0.09	0.00	0.23
Question 6.	-0.04	0.00	0.37
Males alone	0.09	0.00	0.34
Females alone	-0.18	0.03	0.18
Lifestyle	0.00	0.00	0.48
Males alone	0.12	0.01	0.30
Females alone	-0.19	0.03	0.18
Self Improvement	-0.00	0.00	0.48
Males alone	0.15	0.02	0.25
Females alone	-0.08	0.00	0.33
* none significant at $p < 0.001$			

### Discussion

This study was designed to construct a test to measure specific attributions about substance use. Its development, estimates of reliability and validity are discussed below.

Item analysis resulted in a number of moderately homogeneous scales, as determined by the coefficient alpha, an estimate of reliability. Estimates of reliability for factors, overall questions of the ARSU scale, as well as the test as a whole, fell within an acceptable range as discussed by Nunnally (1970).

Correlations between Rotter's IE scale and the ARSU scale were very low. The ARSU scale contributed a large portion of unique variance with Rotter's IE scale (1966). Other researchers (i.e. Donovan and O'Leary, 1978) found positive low-order significant correlations between alcohol specific scales and Rotter's IE scale. However, these scales like Rotter's, are of the forced choice dichotomous type. The ARSU scale, a seven point continuous scale, allowed greater diversity in responding and consequently higher reliability. The low observed concurrent validity could have resulted from differences in responding between a continuous and dichotomous scale.

Another reason for the lack of concurrent validity was suggested in the earlier literature review, that is, that Rotter's IE scale is not the best instrument to measure locus of control for substance users. Phares (1976) suggested that predictions should be enhanced when locus of

control is measured separately for different areas of life.

Valecha (1972) found that Rotter's 11 item IE scale compared favorably with the longer versions. However, Donovan and O'Leary found through factor analysis of Rotter's IE scale, that the Drinking-Related Locus of Control Scale had no relationship with certain subscales, namely the Socio-political Control subscale. This and other subscales irrelevant to substance use may be disproportionately represented in the short form of Rotter's scale. In the present study factor analysis of Rotter's 11 item scale was found to have no factors applicable to substance use attributions. Although the short form may give compatible results with the longer form, it may not reflect the correct aspects of life to be used as a measure of concurrent validity for a substance use scale.

The split-half method of reliability estimation for questions and the overall test was relatively high. The alpha method was utilized since it is equal to the average of all possible corrected split-half reliability coefficients. This allowed for a stable and comprehensive reliability estimate (Ghiselli, Campbell and Zedeck, 1981).

Face validity encompasses content validity when experts judge the appropriateness of items (Ghiselli, Campbell, and Zedeck, 1981). Administrators and therapists evaluated the ARSU scale. Typical comments about the ARSU scale were: "The items on your scale are extensive and comprehensive..." and "Your scale deals with areas which our institution

considers to be important in treatment...." These responses indicate that scale items were comprehensive in coverage of accepted explanations for substance use.

Further substantiation of test validity can be obtained by finding a difference in response patterns between known groups (Nunnally, 1970). This aspect was assessed in the second study by measuring differences in attributions between drug abusers undergoing rehabilitation and university students who are drug users.

The purpose of the second study was to determine if the ARSU scale could differentiate between substance user and abusers. Based on the actor-observer hypothesis (Jones and Davis, 1965) it was expected patterns of response will be similar although responses are expected to be more variable for abusers than users. Individuals are expected to cite causes within the surrounding environment for their own initial drug use. In contrast, for others' initial substance use, individuals are expected cite dispositional characteristics. The opposite pattern of results was expected for behavior concerning cessation of substance use.

## V. STUDY TWO: SUBSTANCE USERS

### Method

#### Sample

Subjects consisted of 48 males and 21 females currently undergoing treatment for substance use. Ages ranged from 14 to 70 (mean is 29.0, standard deviation is 15.5). The majority of subjects (58 %) reported being single. Most subjects were Catholic, and those reporting any faith believed themselves to be slightly religious. The majority of individuals had completed high school with a modal family income between \$10,000 and \$15,000 (Table 13). Initial age of drug use and current drug use can be found in Tables 14 and 15. These individuals were compared with those described in study one.

#### Sample Selection

Individuals were currently undergoing treatment at one of several New England regional centers (Table 16). Treatment centers were originally contacted by letter which explained the purpose of the study. A copy of the survey was included. Treatment center administrators, in conjunction with therapists, were asked to evaluate the survey (regardless of their intent to use the survey). Later



Table 13

## Demographic Information of Rehabilitation Subjects

Variable	Categories	N	Percent
Gender:	Males	48	69.5
	Females	21	30.5
	Total	69	100.0
Religion:	Protestant:	20	29.0
	Catholic:	38	55.1
	Other:	5	7.2
	None:	6	8.7
	Total	69	100.0
Family Income:	\$ 0 ≤ \$ 5999	12	18.2
	\$ 6000 - \$ 9999	15	22.7
	\$10000 - \$14999	17	25.8
	\$15000 - \$19999	7	10.6
	\$20000 - \$24999	7	10.6
	\$25000 +	8	12.1
	Total	66	100.0
Education:	No formal	2	2.9
	Less than eighth	17	24.6
	High school	32	46.4
	Vocational/tech	4	5.8
	College	11	15.9
	Grad. studies	3	4.3
	Total	69	100.0
Marital Status:	Single	40	58.0
	Married	8	11.6
	Separated	6	8.7
	Widowed	0	0.0
	Divorced	15	21.7
	Total	69	100.0

Table 14

Age at Time of Initial Substance Use  
Subjects Currently Undergoing Drug Rehabilitation

Drug	Mean	Std.Dev.	N
Alcohol:	14.0	5.18	65
Sedatives/Tranquilizers:	16.9	6.18	44
Depressants:	15.3	5.57	33
Stimulants:	16.1	7.11	36
Opiates:	16.1	7.00	17
Hallucinogens:	15.6	5.65	35
Heroin:	15.4	3.04	7

Table 15

## Drug Specific Demographic Information

Subjects currently undergoing drug rehabilitation

Drug	Ever Used N	%	Currently Using	%
Alcohol:	66	98.50	18	26.08
Sedatives/ Tranquilizers:	46	69.70	12	17.39
Depressants:	34	51.50	9	13.04
Stimulants:	41	62.10	10	14.49
Opiates:	19	29.20	4	5.79
Hallucinogens:	40	60.60	11	15.94
Heroin:	7	10.80	1	1.40

Table 16  
Participating Institutions

Institutions	Number of Participants
Hillsborough County Alcohol and Drug Abuse Program	14
Odyssey House	28
Maine Rehabilitation Center	7
Lowell General Hospital Drug Rehabilitation Center	20

contacts were made by telephone to set up final arrangements for questionnaire distribution. All centers requested that surveys be mailed, allowing the therapists to distribute them at convenient times during the therapy schedule. A set of instructions to be read aloud before the survey was distributed along with general directions.

### Instrument

A revised version of the ARSU questionnaire was used in this study (Appendix B; revisions to be discussed by section). This version contained the same questions which determined the causality of substance use. Also included were Rotter's Internal-External Locus of Control Scale (11 item scale) (Valecha, 1972), demographic questions, as well as questions concerning actual substance use. These items were identical to the original version.

Attribution of Responsibility for Substance Use Scale. This section of the Substance Use questionnaire contained the same four questions which were discussed in an earlier section. The number of items within each question was reduced through factor analysis of the original items. The two filler questions remained the same.

### Procedure

Questionnaires were distributed by treatment center staff. Standard directions were given orally. As with the university students, participants were asked to fill out the questionnaire as completely and truthfully as possible. Individuals were informed that they need not answer any

question they found offensive. Participants were guaranteed anonymity and were informed that all information was confidential would only be reported as group data. The purpose of the study was explained upon completion of the questionnaire.

## Results

### Reliability Estimates

Cronbach's (1951) alpha coefficient was used to estimate reliability of Rotter's IE scale and ARSU scale for individuals undergoing treatment. Coefficients were computed for each separate factor as well as for the overall questions (Table 17). Alphas ranged from 0.61 to 0.87 for the ARSU. Overall ARSU reliability was 0.61. The alpha coefficient for Rotter's IE scale was 0.68.

### Split Plot Analysis of Variance for Initial Substance Use

Two factors, self-esteem and family/financial problems, were found to be important in attributions about initial substance use. These factors were compared through split plot analysis of variance. Comparisons were made as to reasons for own and reasons for other individuals' initial use. Split plot analysis of variance along with means and standard deviations are presented in tables 18 and 19. Comparisons between user and abuser groups were made using simple interaction effects and simple main effects (Table 20). Means are graphically presented in figure 1.

The self-esteem and family/financial stress factors were compared through split plot analysis of variance. Comparisons between groups were made as to reasons for own and beliefs about reasons for other individuals' initial use on both factors. All comparisons were made using simple interaction effects analyses. The simple interaction effects analyses were found to be statistically significant

Table 17

## Internal Consistency Measures by Question and Factor

Item	alpha
Question 1.	0.82
Self Esteem	0.64
Family/Financial Problems	0.70
Question 2.	0.85
Outside Pressures	0.67
Lifestyle	0.69
Self Improvement	0.61
Question 5.	0.83
Financial/Family Problems	0.87
Self Esteem	0.78
Question 6.	0.88
Lifestyle	0.82
Self Improvement	0.82
Overall	0.61



Table 18  
Split Plot Analysis of Variance\*  
Initial Drug Use

Source	df	MS	F	Prob.
Group	1	8.93	5.84	0.01
Sex	1	0.70	0.46	0.49
GS	1	1.46	0.95	0.32
Error	203	1.53		
Who	1	92.89	110.27	0.00
WG	1	1.40	1.67	0.19
WS	1	0.09	0.11	0.74
WGS	1	0.56	0.68	0.41
Error	203	0.84		
Factor	1	12.41	6.02	0.01
FG	1	25.42	12.34	0.00
FS	1	1.17	0.57	0.45
FGS	1	0.05	0.03	0.87
Error	203	2.06		
WF	1	162.67	166.20	0.00
WFG	1	50.19	51.28	0.00
WFS	1	0.01	0.02	0.89
WFGS	1	0.92	0.94	0.33
Error	203	0.97		

\* Group = University vs. Rehabilitation  
 Sex = Male vs. Female  
 Who = Yourself vs. Most People  
 Factor = Self-Esteem vs. Family/Financial Problems

Table 19

## Means for Split Plot Analysis of Variance

## Initial Drug Use

		University		Rehabilitation	
		Male	Female	Male	Female
Most People	Self-Esteem	3.27	3.22	3.04	3.11
	Family/Financial	4.54	4.83	4.18	4.21
Yourself	Self-Esteem	3.87	4.03	2.99	2.73
	Family/Financial	2.16	2.39	3.07	3.11

## Std. Dev's. for Split Plot Analysis of Variance

## Initial Drug Use

		University		Rehabilitation	
		Male	Female	Male	Female
Most People	Self-Esteem	0.74	0.90	1.05	1.34
	Family/Financial	0.90	0.96	1.48	1.45
Yourself	Self-Esteem	1.03	1.08	1.20	1.52
	Family/Financial	1.26	1.33	1.36	1.68

Table 20  
Means and Simple Simple Main Effects  
for  
Factors Concerning Initial Substance Use

	Who			
	Most People		You	
	Self- Esteem	Family/ Financial	Self- Esteem	Family/ Financial
University Students	3.25	4.68	3.95	2.48
Rehabilitation	3.08	4.20	2.86	3.09
Column Means	3.18	4.54	3.62	2.56

Group Comparisons\*:

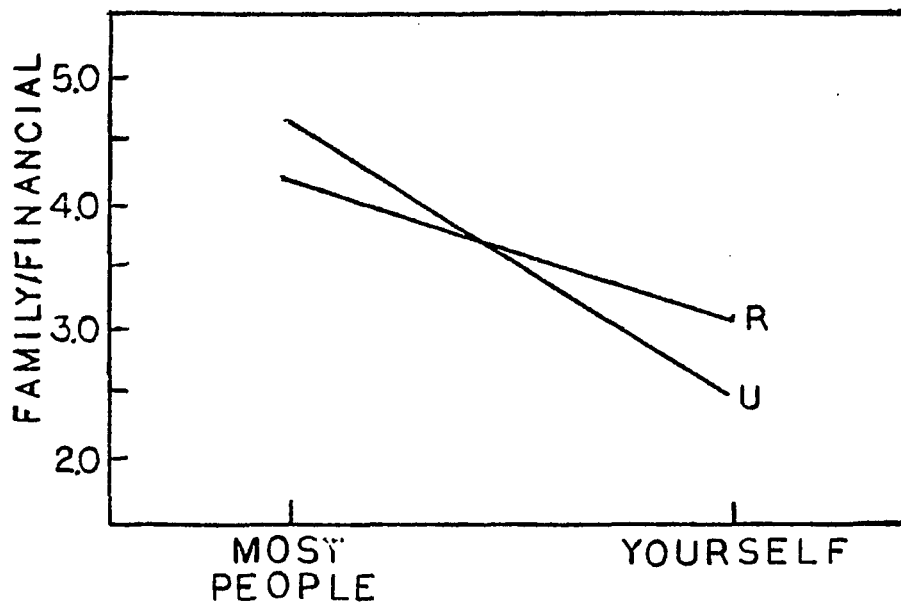
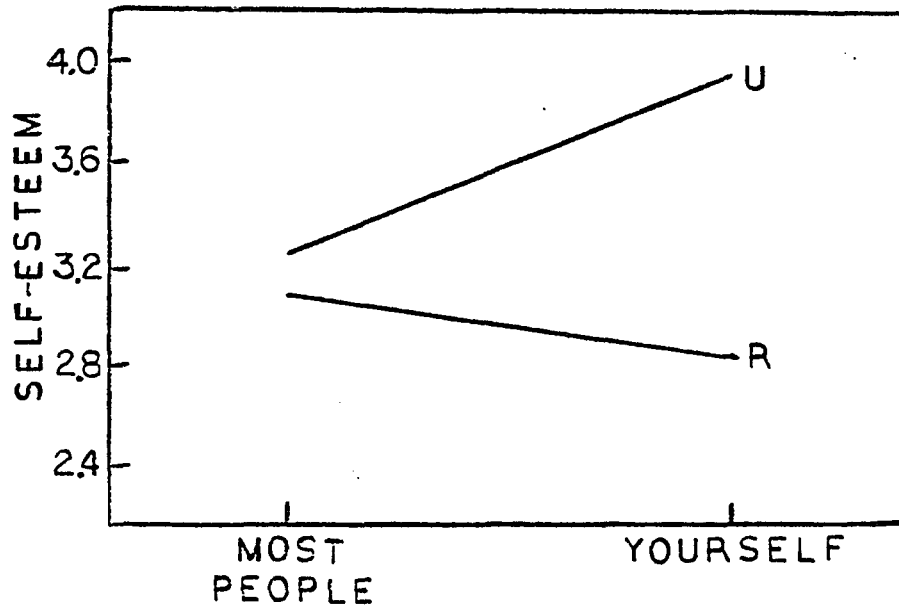
Source	MS	F	p
Who at Rehab. by Self-Esteem	1.39	1.81	0.17
Who at Univ. by Self-Esteem	33.16	43.01	0.00
Who at Rehab. by Family/Financial	35.94	34.19	0.00
Who at Univ. by Family/Financial	383.65	364.97	0.00

\* df for all comparisons = 1,203

Figure 1

## Reasons for Starting Drug Use

Graphical Depiction of Mean Differences  
for  
Self-Esteem and Family/Financial Factors



U=UNIVERSITY

R=REHABILITATION

for university students ( $F = 328.18, p < .00$ ) and rehabilitation individuals ( $F = 11.84, p < .00$ ). Follow up analyses were made using simple simple main effects.

University students felt that self-esteem was more of an important factor in determining their own initial substance use than in others. By comparison, rehabilitation individuals placed little emphasis on this factor. Ratings of self-esteem for themselves and others were comparable.

The pattern of responses for the family/financial factor was different. Both university students and rehabilitation individuals rated this factor as a more important reason to begin substance use for others than for themselves.

#### Split Plot Analysis of Variance for Ending Substance Use

A second split plot analysis was done on factors concerning the cessation of drug use. Comparisons were made as to reasons for own and reasons for other individuals' cessation of drug use. Split plot analysis of variance, along with means and standard deviations are presented in table 21 and 22. Means are presented graphically in Figure 2. Comparisons between user and abuser groups were made using simple interaction effects and simple simple main effects (Table 23). Significant high order gender interaction effects were not analyzed since they did not interact with group and were due only to one deviant mean.

The results of the split plot ANOVA revealed a significant interaction between who (self vs. others' use),

Table 21  
 Split Plot Analysis of Variance\*  
 Ending Drug Use

Source	df	MS	F	Prob.
Group	1	2.86	5.05	0.02
Sex	1	3.18	5.61	0.01
GS	1	5.64	9.94	0.00
Error	203	0.56		
Who	1	3.27	5.82	0.01
WG	1	0.66	1.18	0.27
WS	1	1.33	2.36	0.12
WGS	1	0.78	1.39	0.23
Error	203	0.56		
Factor	1	0.02	0.07	0.79
FG	1	0.04	0.11	0.74
FS	1	2.30	5.87	0.01
FGS	1	0.19	0.49	0.48
Error	203	0.39		
WF	1	1.71	4.01	0.04
WFG	1	11.69	27.25	0.00
WFS	1	2.39	5.59	0.01
WFGS	1	0.02	0.06	0.80
Error	203	0.42		

\* Group = University vs. Rehabilitation  
 Sex = Male vs. Female  
 Who = Yourself vs. Most People  
 Factor = Life-styles vs. Self-Improvement

Table 22  
Means for Split Plot Analysis of Variance  
Ending Drug Use

		University		Rehabilitation	
		Male	Female	Male	Female
Most People	Life-styles	3.90	3.92	3.65	3.53
	Self-Improvement	3.49	3.60	3.83	3.62
Yourself	Life-styles	3.63	3.87	3.95	3.72
	Self-Improvement	4.22	4.03	4.02	3.27

Std. Dev's. for Split Plot Analysis of Variance

Ending Drug Use

		University		Rehabilitation	
		Male	Female	Male	Female
Most People	Life-styles	0.53	0.70	0.73	1.14
	Self-Improvement	0.71	0.83	1.08	0.83
Yourself	Life-styles	0.39	0.34	0.56	0.98
	Self-Improvement	0.58	0.33	0.91	0.88

Table 23  
 Means and Simple Simple Main Effects  
 for  
 Factors Concerning Ending Substance Use

	Who			
	Most People		You	
	Life- Styles	Self- Improvement	Life- Styles	Self- Improvement
University Students	3.91	3.54	3.75	4.12
Rehabilitation	3.59	3.73	3.84	3.64
Column Means	3.81	3.63	3.81	4.00

Group Comparisons\*:

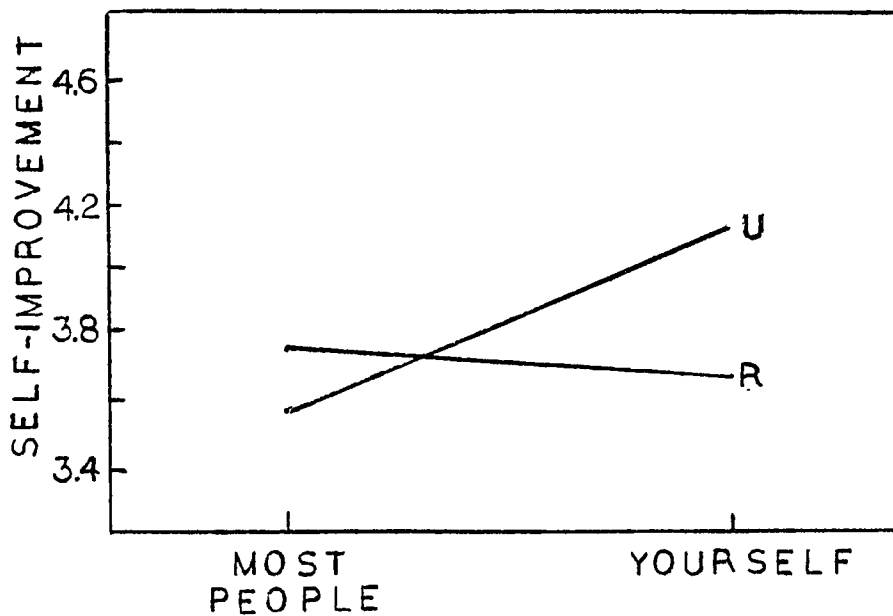
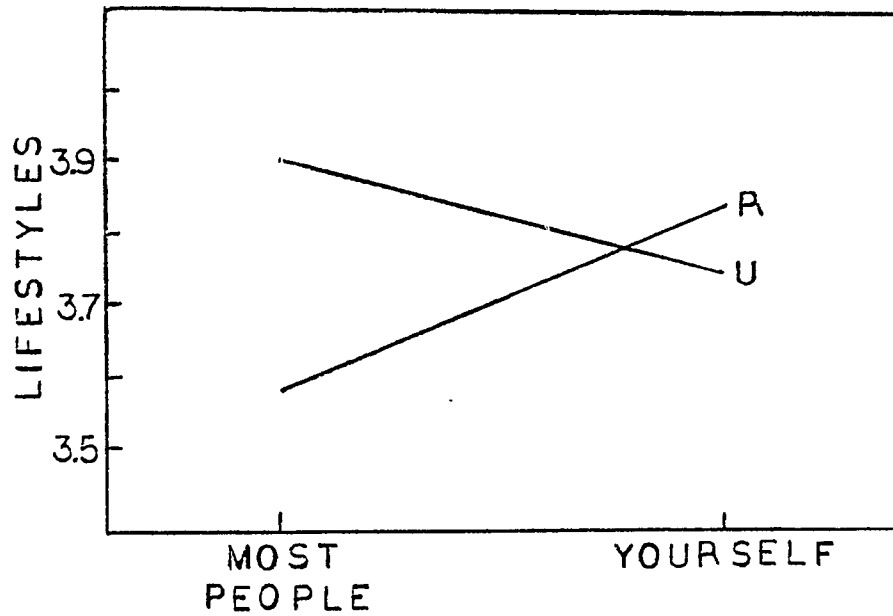
Source	MS	F	p
Who at Rehab. by Life-Style	1.73	4.32	0.03
Who at Univ. by Life-Style	1.81	4.51	0.03
Who at Rehab. by Self-Improvement	0.22	0.38	0.53
Who at Univ. by Self-Improvement	22.07	37.37	0.00

\* df for all comparisons = 1,203



Figure 2

Reasons for Stopping Drug Use  
Graphical Depiction of Mean Differences  
for  
Life-Styles and Self-Improvement Factors



U = UNIVERSITY  
R = REHABILITATION

factor (life-styles vs. self-improvement), and group (university vs. rehabilitation). Simple effects analyses were conducted to understand this interaction. The results of simple interactions indicated significant interactions between who by factor for both university students ( $F = 42.56$ ,  $p < 0.00$ ) and rehabilitation individuals ( $F = 3.73$ ,  $p < 0.05$ ). Follow up analyses were done using simple main effects.

University students placed more emphasis on lifestyle for other people than themselves in the discontinuation of substance use. By comparison, rehabilitation individuals had an opposite pattern of response. They placed more emphasis on this factor for themselves than for others.

There were also differences in ratings of self-improvement. University students felt that self-improvement was more important for their own discontinuation than for others. By comparison, rehabilitation individuals rated this factor equally important.

A third factor, outside pressures, was found to be important only in determining why most people stop using drugs. In general, students agreed more strongly with this factor than individuals undergoing treatment (Table 24).

#### Discriminant Analysis

A discriminant analysis between students and substance abusers was performed using Rotter's IE score, factor scores for the ARSU scale. An  $F$  of 1.00 with tolerance of 0.010 was required for variable selection. Prior classification

Table 24  
Univariate Analysis of Variance  
Question 2: Outside Pressures

Source	df	MS	F	Prob.
Group	1	16.10	12.17	0.0006
Sex	1	4.65	3.52	0.0621
GS	1	0.15	0.12	0.7322
Error	203	1.32		

Table 25  
 Questions Discriminating Between Groups

Step	Variable	F	df
1	Question 5: Self-Esteem <sup>a</sup>	40.15	1 206
2	Question 2: Outside Pressures <sup>c</sup>	27.81	2 205
3	Question 1: Family/Financial <sup>d</sup>	21.63	3 204
4	Question 5: Family/Financial <sup>a</sup>	20.92	4 203
5	Question 2: Life-Styles <sup>c</sup>	17.68	5 202
6	Question 2: Self-Improvement <sup>c</sup>	15.08	6 201
7	Question 6: Self-Improvement <sup>b</sup>	13.14	7 200
8	Question 6: Life-Styles <sup>b</sup>	11.71	8 199

<sup>a</sup> Why did you start using drugs?

<sup>b</sup> Why did you stop using drugs?

<sup>c</sup> Why do most people stop using drugs?

<sup>d</sup> Why do most people start using drugs?

Table 26  
Standardized Discriminant Function Coefficients

Step	Variable	Coefficients
1	Question 5: Self-Esteem <sup>a</sup>	0.65
2	Question 2: Outside Pressures <sup>c</sup>	0.27
3	Question 1: Family/Financial <sup>d</sup>	0.45
4	Question 5: Family/Financial <sup>a</sup>	-0.41
5	Question 2: Life-Styles <sup>c</sup>	0.24
6	Question 2: Self-Improvement <sup>c</sup>	-0.18
7	Question 6: Self-Improvement <sup>b</sup>	0.17
8	Question 6: Life-Styles <sup>b</sup>	-0.15

<sup>a</sup> Why did you start using drugs?

<sup>b</sup> Why did you stop using drugs?

<sup>c</sup> Why do most people stop using drugs?

<sup>d</sup> Why do most people start using drugs?

probabilities were computed based on known group membership. Eight variables met this criteria (Table 25). A canonical correlation of 0.56 was found. Standardized discriminant function coefficients are presented in table 26. Using these variables, a jackknifed classification analysis resulted in 78.93 % of the population being correctly identified.

#### Discriminant Validity

Discriminant validity was evaluated for the overall questions and the subscales of the revised ARSU scale. Overall questions and subscales were correlated with responses on Rotter's IE scale. It was hypothesized that scores on the ARSU scale, as a measure of specific locus of control, would show moderate or small correlations with Rotter's generalized control orientation. This hypothesis was confirmed (Table 27). Scattergrams revealed no evidence for a curvilinear relationship between Rotter's scale and any question or factor of the ARSU.

Table 27

Correlations Between Rotter's IE Scale  
and Questions and Factors of the ARSU

Questions and Subscales	r	r <sup>2</sup>	p*
Question 1.	-0.24	0.05	0.02
Males alone	-0.16	0.02	0.14
Females alone	-0.35	0.12	0.06
Self Esteem	-0.22	0.04	0.03
Males alone	0.10	0.00	0.26
Females alone	-0.64	0.40	0.00
Family/Financial	-0.08	0.00	0.25
Males alone	-0.18	0.03	0.12
Females alone	0.08	0.00	0.35
Question 2.	0.02	0.00	0.42
Males alone	0.08	0.00	0.30
Females alone	-0.02	0.00	0.46
Outside Pressures	0.01	0.00	0.44
Males alone	0.06	0.00	0.35
Females alone	-0.00	0.00	0.49
Lifestyle	0.29	0.08	0.01
Males alone	0.32	0.10	0.02
Females alone	0.28	0.07	0.11
Self Improvement	-0.25	0.06	0.02
Males alone	-0.17	0.02	0.13
Females alone	-0.42	0.17	0.03

Table 27 (cont)

Correlations Between Rotter's IE Scale  
and Questions and Factors of the ARSU

Questions and Subscales	r	r <sup>2</sup>	p*
Question 5.	-0.12	0.01	0.16
Males alone	-0.03	0.00	0.42
Females alone	-0.27	0.07	0.12
Financial/Family	0.05	0.00	0.33
Males alone	0.14	0.01	0.17
Females alone	-0.07	0.00	0.37
Self Esteem	-0.37	0.13	0.00
Males alone	-0.31	0.09	0.02
Females alone	-0.44	0.19	0.02
Question 6.	0.06	0.00	0.31
Males alone	0.12	0.01	0.23
Females alone	0.07	0.00	0.38
Lifestyle	-0.13	0.01	0.15
Males alone	0.02	0.00	0.44
Females alone	-0.28	0.07	0.11
Self Improvement	0.13	0.01	0.15
Males alone	0.12	0.01	0.22
Females alone	0.25	0.06	0.13

\* none significant at  $p < 0.001$



### Discussion

Validity was assessed by measuring different patterns of attribution made by groups known to differ in substance use. In this study, individuals presently undergoing treatment for substance abuse were compared to university students. Split-plot analyses of variances revealed differences between groups of subjects. The difference in response patterns strengthens validity of the ARSU scale. More importantly, it confirms the hypothesis that substance users make different attributions about substance use than do individuals in the general population.

The validity of the ARSU scale was further substantiated by the discriminant analysis. This scale was designed to differentiate between substance abusers and users. Discriminant analysis identifies a set of variables that has maximum potential for distinguishing between members of groups, where group membership is the criterion. It was found that of all the variables entered into the analysis, including Rotter's IE score, only items from the ARSU scale were deemed important for group differentiation. This implies that the ARSU scale is a superior method of measuring differences between groups than Rotter's IE scale.

Attribution theory (Jones and Davis, 1965) states that an individual will place responsibility for another person's behavior on internal causes such as personality characteristics, while attributing their own behavior to external causes such as luck. Contemporary theorists have

suggested that when self esteem plays a role in attributions, attribution theory may not always hold (Miller, 1975). Actions which affect self esteem or ego-enhancement are traditionally not taken into account in attribution theories. Ego-enhancement occurs when an individual takes credit for success and externalizes the blame for failure (Bradley, 1978; Zuckerman, 1979). As a result, actors attribute their success to internal factors such as skill and effort, whereas observers are more likely to attribute an actor's success to chance, luck, or ease of the task. Failures are blamed by the actor on external factors, observers would more likely give credit to the lack of skill or effort (Snyder, Stephen and Rosenfield, 1976; Taylor and Koivumacki, 1976).

Four questions of the ARSU scale were designed to measure these aspects of attribution theory. Examination of the results for the split plot analyses of these questions lend minimal support for attribution theory.

Neither group of subjects rated the family/financial stress factor as a strong cause for their own initial substance use. Subjects felt that this factor was more important in determining others' substance use. University students rated the self esteem as more important for their own initial substance use than for others, whereas rehabilitation individuals placed equal importance on this factor for themselves and others. These findings are opposite to those proposed by attribution theorists.

As actors, individuals should attribute their own discontinuation of substance use to internal causes, while attributing the success of others to external factors. It has been suggested that assuming responsibility for success increases the actor's value in the eyes of important others (Bradley, 1978; Orvis, 1977). This was found to be the case for university students, but not for individuals undergoing drug rehabilitation. These individuals rated both factors as being equally important for their own and others' cessation of drug use.

Attribution theory suggests that individuals' should cite situational causes for their own substance use. On this question as a whole, this hypothesis was not verified. This contradictory finding may be due to a number of reasons. First, these attributions appear to depend upon the degree to which substances are abused. Individuals undergoing treatment regard substance use as a problem or failure. This may in part be due to re-orientation goals of therapy, rather than pre-treatment judgments of substance use. Unfortunately, the present study could not differentiate between the reasons individuals entered treatment due to the low number of responses to this question.

Second, these individuals were already in treatment. Kennedy, Gilbert and Thoreson (1978) and O'Leary, Donovan and O'Leary (1976) found that individuals increased control over both internal and external stresses during treatment,

making them more internal in their orientation. Individuals may have placed more emphasis on situational factors if they had not been in treatment. Situational factors might also have been found when looking at individuals first entering treatment as compared to individuals who have been involved in treatment for longer periods of time. Unfortunately, with such small numbers within this group, this analysis was not possible. However, when looking at the factor means, individuals undergoing treatment did agree more with the family/financial problems stress factor than did the university students. The opposite pattern was found with the self esteem factor. University students, not considering their own substance use a problem, following the ego-enhancing bias of making attributions, have less need to blame their behavior on environmental factors. Substance abusers, on the other hand, realize their use of substances constituted a failure and tend to blame their behavior on external factors.

## VI. GENERAL DISCUSSION

Evaluations made by substance abuse experts indicated that the ARSU was comprehensive in coverage of currently accepted reasons for drug use. Evaluations such as these are commonly used as an index of face validity. Validity was further substantiated by discriminant analysis which indicated that the ARSU consistently differentiated between substance users and abusers. Although Rotter's (1966) IE scale was entered into the analysis, only ARSU factors were found to be important in group differentiation.

Although both the ARSU and Rotter's IE (1966) scale were found to be moderately reliable, minimal correlations between ARSU factors and Rotter's scale in the first experiment suggested that standardized procedures should be exercised during scale development. The low correlations suggest that Rotter's scale might not be the most accurate instrument for investigating locus of control for substance users possibly due to its general life orientation. Phares (1976) has suggested that predictions should be enhanced when locus of control is measured separately for different areas of life.

Advocates (Rohsenow and O'Leary, 1978; Obitz and Oziel, 1978) of Rotter's IE (1966) scale might interpret these findings differently. Rotter's scale has been used frequently as a successful locus of control measure. These researchers would probably argue that the small correlations indicated that the ARSU, not Rotter's was the inaccurate measure.

However, correlations between Rotter's IE (1966) scale and the ARSU increased in the second study which measured attributions made by substance abusers. Advocates of Rotter's scale would probably be at a loss to explain this pattern, although it was not wholly unexpected by the author. The ARSU was primarily intended to measure attributions made by substance abusers. A scale designed to measure attributions made by one group of subjects should not be expected to assess accurately those of another.

Even so, many scales have been constructed with and/or applied to, inappropriate groups of subjects. One well-known test, the MMPI, was developed using a small sample of Minnesota adults originally to differentiate between "normal" and "abnormal" individuals (Anastasi, 1976).

Difficulties in finding representative samples have frequently forced researchers interested in cross-cultural differences to develop scales on inappropriate samples. Often scales are developed within a subculture to examine differences across cultures (Manaster and Havighurt, 1972). Hsieh, Shybut, and Lotsof (1969) investigated locus of

control in Chinese individuals using Rotter's IE scale (1966).

### Test of Attribution Theory

Jones and Davis (1965) have suggested that individuals will change emphasis on causal factors depending upon the point of view. Actors place more emphasis on internal or dispositional factors for other people's behavior. Actors emphasize external or situational factors for their own behavior. The emphasis on dispositional factors as a causal explanation for others' behavior is often cited as the fundamental attribution error (Ross, 1977).

Attribution theory can be directly applied to substance abuse. Individuals should be more likely to place emphasis on dispositional factors as a reason for initial substance use for others rather than themselves. Attribution theory also suggests that situational factors should be more important in one's own initial substance use than in other people's.

Many studies have found substance abusers to possess internal, external, or mixed locus of control when Rotter's IE (1966) scale is used (Gonzali and Sloan, 1971; Schilling and Carman, 1978; Erickson, Smyth, Donovan and O'Leary, 1976). However, Rotter's scale itself may be the underlying cause of these conflicting reports (Caster and Parson, 1977).

Gurin, Gurin, Lao, and Beattie (1969) have emphasized the need to distinguish between external multidimensional

sources of control in minorities. Concern about fate was found to be separate from reality concerns such as finances and family responsibilities. The extent to which these factors were stressed by the individual depended on the financial well-being of the person.

Mirels (1970) also found multidimensionality to be an important factor in determining locus of control. Factor analysis of Rotter's IE scale showed that two factors were present. One concerned an individual's ability to achieve personal goals while the other was concerned with the ability to effect change in society. Mirels' findings suggest that predictions made using the IE scale might be enhanced if both sources and targets of influence described by the item statements and the content domain were considered. These considerations would be particularly important in studies which employed the internal versus external dimension as a dependent or outcome variable.

In light of these criticisms, contradictory findings concerning locus of control and substance abuse are not particularly surprising. The world's population is made up of individuals who possess internal or external control strategies. There is little research which suggests that changes in life orientation correlate well with behavioral changes. A general life orientation scale like Rotter's may not be able to differentiate between populations which differ in only one aspect of life. Consequently, measurements of attributions made by substance abusers with



Rotter's IE scale may not differ from those made by the general public.

The general population consists of individuals who have various problems in one area of life or another. There has been no research to suggest that substance abusers are different from the general population in any other aspect of life (Lefcourt, 1982). A problem specific scale such as the ARSU should be better able to measure behavior specific attributions. The low correlations between Rotter's IE scale and drug specific scales found in this study and others indicate that this may be the case (Donovan and O'Leary, 1978).

The lack of support for the fundamental attribution error (Ross, 1977) suggests that the ARSU may be measuring something other than locus of control. Heider suggested that subjective impressions of causal connections between events may not be the same for everyone. Applying phenomenal causality to the substance use situation suggests that users and abusers might simply be responding to aspects of substance use which they found to be important. Patterns of response for users and abusers should be expected to be different.

#### Substance Abusers vs Substance Users

The discriminant analysis indicated that the ARSU scale can differentiate between substance users (university students) and abusers (rehabilitation individuals). It was originally hypothesized that patterns of responding would be

similar for the two groups of subjects, with greater divergence from the neutral category for substance abusers. This hypothesis was not confirmed. Substance abusers were found to be more divergent from a neutral point on self-esteem and self-improvement factors. Substance users were more divergent on the family/financial and lifestyles factors.

Differences in demographic data could explain the lack of emphasis on the family/financial factor by substance users, and the relative importance placed on this factor by substance abusers. For example, substance users rated the family/financial stress factor to be less important in their own initial substance use than substance abusers. Users were more likely to be supported by other family members (eg. parents). The family income is also higher for users (mode = in excess of \$25,000) than abusers (mode = \$10,000 - \$14,999). As a result, substance users would be unlikely to experience financial problems to the same degree as abusers. The mean age of the substance users (mean age = 19) was lower than that of abusers (mean age = 29). Since the abusers were older than users, they may have taken more personal responsibility for the financial well-being of themselves and/or their families.

An alternative reason for these differences in attributions may arise from the outlook each group possessed about substance use. This was evident in the pattern of responding to the questions dealing with cessation of

substance use. Since abusers were still in treatment, they may not see themselves as having succeeded at the task of substance use discontinuation, and may view their continued use of substances as a failure, blaming their behavior on external factors. Users, who have discontinued the use of at least one substance, may not feel that the continued usage of other substances is a problem or failure, and feel they had accomplished their goal, following the ego-enhancement bias in making attributions.

Most importantly, both substance users and abusers demphasized the importance of ARSU factors in determining reasons for starting and stopping drug use. One explanation for these findings suggests that low ratings reflect the unrepresentativeness of scale items in sampling perceived causes. This interpretation seems rather unlikely since items were based on accepted theories and past research. A more likely interpretation suggests that each of many possible causes were rated as equally plausible in determining drug related behaviors, since no single cause was primarily important.

#### Limitations

The two samples were not equally homogeneous. Substance abusers had larger variances on all demographic variables than did users. These diversities may have influenced response patterns between groups. Along these same lines, the user group may have contained unknown "abusers" who may or may not have been in therapy.

The sampled group of substance abusers was in a sense "special" since each of them were seeking help for their drug-related problems. Actual patterns of attributions may have been different for "street" abusers. It is also unknown if these abusers were in treatment by choice or force. This would seem to be a potentially important factor in determining attributions since the patterns of response made by abusers forced into therapy should be more similar to "street" abusers than for those who enrolled voluntarily.

Standard directions were given for the administration of the survey but experimenter effects may still have occurred. Substance users were administered the ARSU scale by the experimenter while abusers received the survey from a therapist at the institution.

The survey administered to each group was also of slightly different length. Since substance users were given the original survey, they responded to more questions. This may have influenced their pattern of responding, particularly near the end where fatigue or boredom may have set in.

It was difficult to obtain access to rehabilitation centers because therapists felt the administration of the ARSU would disrupt the center's normal routine. Of the 40 centers originally contacted, only 7 granted subject access. These treatment centers may not be representative of other centers.

#### Directions for Future Research

Some researchers have developed problem-oriented scales to avoid the problems associated with general life oriented scales (Wallston, Wallston, Kaplan, and Maides, 1976). For example, the Drinking-Related Locus of Control scale measures attributions made by alcoholics. Using this scale, alcoholics as a group have been found to be both internal and external in control orientation (Erickson, Symth, Donovan, and O'Leary, 1976; Pryer and Distefano, 1977).

There is no evidence suggesting that any substance abusers actually began treatment with these attributions. A number of investigators have reported that abusers become more internal as treatment progresses (O'Leary, Donovan, Hague and Shea, 1975; O'Leary, Donovan, and O'Leary, 1976; Kennedy, Gilbert and Thoreson, 1978). If this is the case, then the length of treatment and the amount of time in treatment prior to sampling are important variables in determining attributions. Unfortunately, length of time in treatment is not commonly reported. Discrepancies between measured attributions may be at least partially resolved if these variables had been taken into account.

The present study did measure treatment duration. However, there was very little variation in the amount of time abusers had been in treatment. As a result, verification of this hypothesis was not possible. Larger samples would result in more variability of treatment duration. This would allow a better test of the duration-

attribution hypothesis, and possibly reconcile some of the reported attribution differences.

In light of previously discussed criticisms of Rotter's IE scale, the ARSU should be correlated with another established scale which measured some specific aspect of substance use. An example of such a test is The Drinking-Related Locus of Control Scale (Donovan and O'Leary, 1978).

Future work in this area should use a multidimensional approach. The factors of the ARSU show that individuals do not perceive reasons for initial substance use or cessation to fall within a single theoretical framework. Researchers should follow the advice of Schwartz (1982) and develop questionnaires whose content area covers multiple theories. (See Appendix C for an indepth coverage of this argument.)

#### Practical Implications for Future Research

The findings of this study have implications for future research. A primary reason for measuring attributions is to differentiate between substance abusers and users. Results of the ARSU scale suggest this is a reasonable expectation. Determining the attributions made by substance abusers would allow placement centers to determine the most profitable type of therapy for that individual. This is extremely important since individuals respond differently to various treatments (Bander, Stilwell, Fern and Bishop, 1980). As a result of matching treatment expectancies and therapy types, dropout rates should decrease.

Changes in attribution processes could also be

monitored throughout treatment enabling therapists to modify strategies as treatment progresses. Better treatment strategies should lead to higher treatment success rates, and ultimately increase governmental funding and treatment availability. This would benefit the public since lower attrition rates would culminate in lower taxes (Ray, 1978).

#### Theoretical Implications for Future Research

Wallston, Wallston, Kaplan and Maides (1976) have found that predictions of locus of control were enhanced when specific scales are used. This ARSU supported these findings. The development of specific scales would result in more accurate and comprehensive findings.

Future research should take care not to overlook the role that biases like ego-enhancement and the fundamental attribution error play in making attributions. It should not be assumed that attributions are made in the straight forward manner suggested by Jones and Davis (1965). Situational aspects are known to enter into the attributional process (Harvey, Town, and Yarkin, 1981; Harvey and McGlynn, 1982). It may be that situational aspects coupled with the individual importance of an event interact such that the premises of traditional attribution theory do not always hold.

The format of questions on the ARSU was not the same as that of Rotter's IE scale. Rotter's IE scale is a forced choice scale, requiring individuals to chose between statements. By comparison, the ARSU is composed of items

which individuals rate on a seven point continuous scale, ranging from not important through a neutral point to very important. This difference in construction required a difference in the wording of questions. Rotter's (1966) scale requests individuals to select the statement which they more strongly "believe" to be the case for each item, while the ARSU scale asks individuals to rate the "importance" of each item in conjunction with the various questions. It is possible that the format of a survey may influence the measurement of a theoretical concept. To circumvent these possible influences, future researchers developing new scales or validating old ones should include items of comparable format to previously established tests.

#### Summary

The ARSU scale was found to possess aspects of both validity and reliability when measuring substance use attributions. The ARSU was also able to differentiate substance abusers from users in terms of attributions made about substance use. Substance abusers were found to place more importance on dispositional factors than substance users, suggesting a link between duration of treatment and control orientation. Little evidence was found to justify the use of attribution theory in making judgements about substance use. However, attribution theory should not be wholly discounted, since both treatment strategy and duration were found to be confounding variables that traditionally are not taken into account.



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**APPENDIX A**



### Drug Usage Survey

This survey is part of a study designed to find out your opinions about drug usage. The research is being conducted by Karen Towell-Roberts of the Psychology Department at the University of New Hampshire. If at any time you have questions about this survey, or its uses, please feel free to contact her.

All of your answers will be anonymous in accordance with Public Law 91-513. Information will be used as group averages only. Your answers will be coded and entered into the computer, at which time this survey will be destroyed. You have the right not to answer any questions.

Please DO NOT SIGN YOUR NAME OR ANY OTHER IDENTIFIABLE MARKS ON THESE PAGES. Please answer each question carefully.

Thank you for your time and help.

Below are some questions. Your answers will give me some background information about you. Please check one answer in each question below.

## 1. Gender:

Male \_\_\_\_\_ Female \_\_\_\_\_

## 2. Age: \_\_\_\_\_ years

## 3. Religion:

Protestant \_\_\_\_\_

Catholic \_\_\_\_\_

Jewish \_\_\_\_\_

Other \_\_\_\_\_

None \_\_\_\_\_

## 4. How religious are you?

Not at all \_\_\_\_\_

Slightly \_\_\_\_\_

Moderately \_\_\_\_\_

Very \_\_\_\_\_

## 5. Family income (make your best guess if you are not sure):

below \$6000 \_\_\_\_\_

\$6000 - \$9999 \_\_\_\_\_

\$10000 - \$14999 \_\_\_\_\_

\$15000 - \$19999 \_\_\_\_\_

\$20000 - \$24999 \_\_\_\_\_

\$25000 or more \_\_\_\_\_

## 6. What is the last level of schooling that you have completed?

no formal education \_\_\_\_\_

grade school (8th grade) or less \_\_\_\_\_

high school \_\_\_\_\_

vocational/technical school \_\_\_\_\_

college \_\_\_\_\_

graduate studies \_\_\_\_\_

## 7. Marital status:

single \_\_\_\_\_

married \_\_\_\_\_

separated \_\_\_\_\_

widowed \_\_\_\_\_

divorced \_\_\_\_\_

For each question below, read statements A and B. Please circle the letter in each pair that you agree with most.

1. A. Children get into trouble because their parents punish them too much.  
B. The trouble with many children now-a-days is that their parents are too easy with them.
2. A. In the long run people get the respect they deserve in this world.  
B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
3. A. The idea that teachers are unfair to students is nonsense.  
B. Most students don't realize to what extent their grades are influenced by accidental happenings.
4. A. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
B. Getting a good job depends mainly on being in the right place at the right time.
5. A. The average citizen can have an influence in government decisions.  
B. This world is run by the few people in power, and there is not much the little guy can do about it.
6. A. In my case getting what I want has little or nothing to do with luck.  
B. Many times I might just as well decide what to do by flipping a coin.
7. A. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
B. Getting people to do the right thing depends upon ability, luck has little to do with it.
8. A. Most people don't realize to what extent lives are controlled by accidental happenings.  
B. There really is no such thing as "luck".
9. A. In the long run the bad things that happen to us are balanced by the good ones.  
B. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
10. A. Many times I feel that I have little influence over the things that happen to me.  
B. It is impossible for me to believe that chance or luck plays an important role in my life.
11. A. What happens to me is my own doing.  
B. Sometimes I feel that I don't have enough control over the direction my life is taking.







4. Please rate how much you agree/disagree with the following statements about a person who uses drugs.

Please indicate on the scale to the right of each statement how important each statement is in answering the question.

Circle the number that is your answer.

If a statement does not apply, please leave it blank.

The scale works as following:

-----  
 1      2      3      4      5      6      7  
 strongly      neutral      strongly  
 disagree           agree

- |    |   |   |   |   |   |   |   |   |
|----|---|---|---|---|---|---|---|---|
| A. | is responsible for his/her behavior   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| B. | is not responsible as others have caused his/her behaviors                        | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| C. | is not responsible as outside events caused his/her behavior                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| D. | is not responsible as she/he has a medical problem and should be sympathized with | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| E. | is responsible for coping with his/her drug usage                                 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| F. | is not responsible for coping as other people and/or events are responsible       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

5. Please rate how important the following factors are in determining your decision to begin using drugs?

Please indicate on the scale to the right of each statement how important each statement is in answering the question.

Circle the number that is your answer.

The scale works as following:

-----  
 1    2    3    4    5    6    7  
 not                          very  
 important                          important

A.	My personality	1	2	3	4	5	6	7
B.	I hung around with the wrong crowd	1	2	3	4	5	6	7
C.	I was without a job	1	2	3	4	5	6	7
D.	Family problems with parents or spouse	1	2	3	4	5	6	7
E.	I drank heavily when at social gatherings or parties	1	2	3	4	5	6	7
F.	My parents drink/drank heavily	1	2	3	4	5	6	7
G.	I had financial problems	1	2	3	4	5	6	7
H.	It was just chance	1	2	3	4	5	6	7
I.	Upbringing	1	2	3	4	5	6	7
J.	Social class/background	1	2	3	4	5	6	7
K.	Divorce from my spouse	1	2	3	4	5	6	7
L.	Parents are divorced	1	2	3	4	5	6	7
M.	Death of parent/spouse	1	2	3	4	5	6	7
N.	Death of offspring	1	2	3	4	5	6	7
O.	Death of brother/sister	1	2	3	4	5	6	7
P.	Can cope at school/job better	1	2	3	4	5	6	7
Q.	My parents use a lot of prescription drugs	1	2	3	4	5	6	7
R.	I feel more comfortable with others	1	2	3	4	5	6	7
S.	I like myself better	1	2	3	4	5	6	7
T.	I feel happier and enjoy life more	1	2	3	4	5	6	7
U.	I felt like a failure	1	2	3	4	5	6	7
V.	To hide from problems	1	2	3	4	5	6	7
W.	I liked the effects	1	2	3	4	5	6	7
X.	Other (please explain)	<hr/>						





1. Have you ever used any of these drugs?  
 (Please indicate with a check mark)

	YES	NO
Alcohol(booze,juice)	_____	_____
Sedatives and/or tranquilizers(valium,librium)	_____	_____
Depressants(barbs,yellow jackets)	_____	_____
Stimulants(coke,snow,speed,bennies)	_____	_____
Opiates(white stuff,school boy)	_____	_____
Hallucinogens(acid,mesc,pot,weed)	_____	_____
Heroin(horse,smack)	_____	_____

2. At what age did you begin to use these drugs?  
 (Please indicate for each drug)

Alcohol	_____
Sedatives and/or tranquilizers	_____
Depressants	_____
Stimulants	_____
Opiates	_____
Hallucinogens	_____
Heroin	_____

3. For those drugs you are no longer using, please indicate  
 how long ago you stopped using them.

Alcohol	_____
Sedatives and/or tranquilizers	_____
Depressants	_____
Stimulants	_____
Opiates	_____
Hallucinogens	_____
Heroin	_____

4. Have you ever been arrested for drug use?  
 Yes: \_\_\_\_\_ No: \_\_\_\_\_

Thank you for your time and help.

**APPENDIX B**

### Drug Usage Survey

This survey is part of a study designed to find out your opinions about drug usage. The research is being conducted by Karen Towell-Roberts of the Psychology Department at the University of New Hampshire. If at any time you have questions about this survey, or its uses, please feel free to contact her.

All of your answers will be anonymous in accordance with Public Law 91-513. Information will be used as group averages only. Your answers will be coded and entered into the computer, at which time this survey will be destroyed. You have the right not to answer any questions.

Please DO NOT SIGN YOUR NAME OR ANY OTHER IDENTIFIABLE MARKS ON THESE PAGES. Please answer each question carefully.

Thank you for your time and help.

Below are some questions. Your answers will give me some background information about you. Please check one answer in each question below.

1. Gender:

Male \_\_\_\_\_ Female \_\_\_\_\_

2. Age: \_\_\_\_\_ years

3. Religion:

Protestant \_\_\_\_\_

Catholic \_\_\_\_\_

Jewish \_\_\_\_\_

Other \_\_\_\_\_

None \_\_\_\_\_

4. How religious are you?

Not at all \_\_\_\_\_

Slightly \_\_\_\_\_

Moderately \_\_\_\_\_

Very \_\_\_\_\_

5. Family income (make your best guess if you are not sure):

below \$6000 \_\_\_\_\_

\$6000 - \$9999 \_\_\_\_\_

\$10000 - \$14999 \_\_\_\_\_

\$15000 - \$19999 \_\_\_\_\_

\$20000 - \$24999 \_\_\_\_\_

\$25000 or more \_\_\_\_\_

6. What is the last level of schooling that you have completed?

no formal education \_\_\_\_\_

grade school (8th grade) or less \_\_\_\_\_

high school \_\_\_\_\_

vocational/technical school \_\_\_\_\_

college \_\_\_\_\_

graduate studies \_\_\_\_\_

7. Marital status:

single \_\_\_\_\_

married \_\_\_\_\_

separated \_\_\_\_\_

widowed \_\_\_\_\_

divorced \_\_\_\_\_

For each question below, read statements A and B. Please circle the letter in each pair that you agree with most.

1. A. Children get into trouble because their parents punish them too much.  
B. The trouble with many children nowadays is that their parents are too easy with them.
2. A. In the long run people get the respect they deserve in this world.  
B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
3. A. The idea that teachers are unfair to students is nonsense.  
B. Most students don't realize to what extent their grades are influenced by accidental happenings.
4. A. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
B. Getting a good job depends mainly on being in the right place at the right time.
5. A. The average citizen can have an influence in government decisions.  
B. This world is run by the few people in power, and there is not much the little guy can do about it.
6. A. In my case getting what I want has little or nothing to do with luck.  
B. Many times I might just as well decide what to do by flipping a coin.
7. A. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
B. Getting people to do the right thing depends upon ability, luck has little to do with it.
8. A. Most people don't realize to what extent lives are controlled by accidental happenings.  
B. There really is no such thing as "luck".
9. A. In the long run the bad things that happen to us are balanced by the good ones.  
B. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
10. A. Many times I feel that I have little influence over the things that happen to me.  
B. It is impossible for me to believe that chance or luck plays an important role in my life.
11. A. What happens to me is my own doing.  
B. Sometimes I feel that I don't have enough control over the direction my life is taking.















1. Have you ever used any of these drugs?  
 (Please indicate with a check mark)

	YES	NO
Alcohol(booze,juice)	_____	_____
Sedatives and/or tranquilizers(valium,librium)	_____	_____
Depressants(barbs,yellow jackets)	_____	_____
Stimulants(coke,snow,speed,bennies)	_____	_____
Opiates(white stuff,school boy)	_____	_____
Hallucinogens(acid,mesc,pot,weed)	_____	_____
Heroin(horse,smack)	_____	_____

2. At what age did you begin to use these drugs?  
 (Please indicate for each drug)

Alcohol	_____
Sedatives and/or tranquilizers	_____
Depressants	_____
Stimulants	_____
Opiates	_____
Hallucinogens	_____
Heroin	_____

3. For those drugs you are no longer using, please indicate  
 how long ago you stopped using them.

Alcohol	_____
Sedatives and/or tranquilizers	_____
Depressants	_____
Stimulants	_____
Opiates	_____
Hallucinogens	_____
Heroin	_____

4. Have you ever been arrested for drug use?  
 Yes: \_\_\_\_\_ No: \_\_\_\_\_

5. Have you been involved in a drug rehabilitation program before?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

6. What type of drug program are you currently involved in? (You may check more than one if you wish.)

Group support program (such as Alcoholics Anonymous): \_\_\_\_\_

Hospital program: \_\_\_\_\_

Educationally oriented program/community mental health associations (such as Stratford Guidance): \_\_\_\_\_

Program requiring a change in self perception, self esteem, or other internal change: \_\_\_\_\_

Individual counselor meetings (including religious leaders): \_\_\_\_\_

Others (please explain): \_\_\_\_\_

7. Is this program group or individually oriented? \_\_\_\_\_

8. Did you select your own type of program? Yes: \_\_\_\_\_ No: \_\_\_\_\_  
If yes, why did you select this type?

If no, how did you become involved in this program?

9. How long have you been involved in this program? \_\_\_\_\_

10. How long do you plan to be involved in this program? \_\_\_\_\_

11. Who staffs your current program?

Doctors \_\_\_\_\_

Psychologists \_\_\_\_\_

Teachers \_\_\_\_\_

Counselors \_\_\_\_\_

Clergy members \_\_\_\_\_

Nurses \_\_\_\_\_

Trained volunteers \_\_\_\_\_

Someone who has used drugs in the past \_\_\_\_\_

Peers (friends) \_\_\_\_\_

12. How effective do you feel the program you are currently involved with is?

Extremely \_\_\_\_\_  
 Very \_\_\_\_\_  
 Slightly \_\_\_\_\_  
 Moderately \_\_\_\_\_  
 Not at all \_\_\_\_\_

13. How would you characterize your drug use before joining this program?

Heavy \_\_\_\_\_  
 Light \_\_\_\_\_  
 Moderate \_\_\_\_\_

14. How would you characterize your drug use at present?

	Heavy	Moderate	Light	None
Sedatives and/or tranquilizers:	_____	_____	_____	_____
Alcohol:	_____	_____	_____	_____
Depressants:	_____	_____	_____	_____
Stimulants:	_____	_____	_____	_____
Opiates:	_____	_____	_____	_____
Hallucinogens:	_____	_____	_____	_____
Heroin:	_____	_____	_____	_____

15. How likely is it that you may use any of these drugs again?

	Highly likely	Somewhat likely	Slightly likely	Not likely
Sedatives and/or tranquilizers:	_____	_____	_____	_____
Alcohol:	_____	_____	_____	_____
Depressants:	_____	_____	_____	_____
Stimulants:	_____	_____	_____	_____
Opiates:	_____	_____	_____	_____
Hallucinogens:	_____	_____	_____	_____
Heroin:	_____	_____	_____	_____

Thank you for your time and help.

**APPENDIX C**



## APPROACHES TO SUBSTANCE ABUSE

Why do people become substance abusers? There are many theories that have been constructed to answer this question. Most of these theories have limited generalizability since they are typically based on studies composed of a single group of substance abusers - alcoholics. Although limited, an understanding of these theoretical views is imperative to an overall explanation of substance abuse. The theories can be divided into four approaches; constitutional, sociological, psychological, and interactional.

### The Constitutional Approach

The constitutional approach is typified by a view of addiction defined in terms of physiological tolerance and dependence. Researchers following this disease oriented approach consider psychological and sociological aspects to be irrelevant (Roebuck and Kessler, 1972).

The emphasis of the constitutional approach is genetics. These theories assume that abuse is inherited and tends to run in families, presumably through traits or predispositions (Milt, 1976; Tennant, 1976). Inherited conditions such as affective disorders, anti-social personality, and other personality features may be linked to alcoholism (Cadoret, 1976). Comparing personality deviations of alcoholics to a control group, Amark (1951) found significant increases in psychopathology (48 percent in alcoholics vs. 8.2 percent in controls) and personality deviations (43.1 percent in alcoholics vs. 45.9 percent in

controls). Alcoholics were also characterized by a preponderance of traits in which anxiety and uneasiness were symptoms. Unfortunately, studies of this type are not conclusive since they do not differentiate between environmental and genetic influences (Schuckit, 1980).

Three basic techniques for separating environmental and genetic influences include twin, adoption, and genetic marker studies (Goodwin, 1976). Evidence for genetic influence has been found using each of these.

Twin Studies. There are two types of twins; identical and fraternal. Identical or monozygotic twins originate from a single fertilized egg and are genetically identical. Fraternal or dizygotic twins result from two separate fertilized eggs. In respect to genetics, fraternal twins are no more similar to each other than any other siblings (Lerner and Libby, 1978). Many twin studies do not acknowledge this difference, causing problems of interpretation.

If alcoholism or drug abuse is an inherited trait, evidence should be found in both identical twins. The experimental strategy of twin studies is to find identical twins, one of which is a substance abuser and ascertain whether the other twin is also an abuser. A high concordance rate (both twins showing the characteristic under study) would indicate that there is an existence of an hereditary trait. (Milt, 1976; Lerner and Libby, 1978).

Twin studies have shown at least a 54 percent

concordance rate among identical twins, and a lower 28 percent concordance among fraternal twins. Results like these suggest the possibility of a genetic influence in alcoholism.

Adoption Studies. When adoption occurs early in a child's life, the effects of the biological parent are primarily genetic in nature. As a result, a trait is assumed inherited if found in both the child and biological parents (Goodwin, 1976). Goodwin, Schulsinger, Hermanson, Guze, and Winokur (1973) found evidence for this hypothesis using 110 male adoptees as subjects (55 with an alcoholic biological parent, 55 with nonalcoholic biological parents). All subjects had been separated from their parent at six weeks of age. Of these individuals, ten of the children with alcoholic parents had severe drinking problems, while only three controls were alcoholic. A second study found as many alcoholics in a group of children raised with foster parents as with alcoholic biological parents (Goodwin, Schulsinger, Moller, Hermanson, Winokur, and Guze, 1974).

These studies indicate that a genetic component is possible for alcoholism. Unfortunately, few of these studies differentiate between the effects of male or female alcoholic parents, or the influence of an alcoholic mother on an unborn child.

Genetic Marker Studies. Genetic marker studies can be differentiated into two types; pedigree, and population,

each typified by different experimental strategies. Single families are examined in pedigree studies, while population studies deal with large groups (Goodwin, 1976).

Schuckert (1980) found that individuals with a family history of alcoholism differed from those who did not. Individuals from families with alcohol problems rated their own levels of intoxication as lower than individuals from nonalcoholic families, while equal amounts of alcohol were actually consumed. Individuals from alcoholic families also tended to drink more alcohol to obtain similar levels of intoxication. In addition, these individuals produced higher levels of acetaldehyde, leading to increases in organic damage. This study supports the hypothesis that there is a genetic component to alcoholism. Jellinek (1945) found in 50 percent of the alcoholic cases studied, either one or both of the parents were alcoholic or had been diagnosed as having serious drinking problems.

Cotton (1979) found higher rates of alcoholism in relatives of alcoholics than in the general population. This relationship was more evident for females than males, suggesting a sex linked genetic component.

These studies support a theory of genetic predisposition in alcoholism (Ray, 1978). Unfortunately the type of predisposition and its mechanism of action are unclear (Tarter and Sugarman, 1976; Ray, 1978).

Although acknowledging the effect of the environment, Goodwin (1980) suggested that genetic factors may operate in

two ways to effect the possibility of an individual becoming a substance abuser. Individuals may be "protected" against substance abuse. These individuals have a low tolerance to specific drugs and experience aversive reactions when they are used even in small quantities. The low tolerance appears to be genetic in origin.

"Unprotected" individuals use larger amounts of substances before they experience any aversive effects. At these doses, the only way to eliminate any aversive reactions is to use more of the substance.

#### The Sociological Approach

The sociological approach does not try to explain why an individual became an abuser. Instead, the researcher using this approach focus on explaining different degrees of substance abuse for various groups (Roebuck and Kessler, 1972).

The sociological approach is divided into three different levels. The first level is that of culture or society as a whole. A second applies to a specific culture, or a comparison between two cultures, while the last examines specific institutions (ex. family) (Roebuck and Kessler, 1972).

Culture as a Whole. Horton (1943) utilized primitive societies to study cross cultural differences in alcohol use. The primary reason individuals consumed alcohol was to reduce feelings of tension and anxiety. Those

tribes with primitive food gathering techniques (hunting and gathering rather than farming) drank more, presumably due to increased environmental stress.

Bales studied the methods which cultures or societies used to determine the rates of abuse (as stated in Roebuck and Kessler, 1972). One method examines the amount of culturally induced tension on individuals. A second, focuses on the attitude societies hold about drinking behavior (as a means of reducing anxiety, or as taboo). If not socially condoned does the society provide an alternative form of anxiety release. Those cultures that induce more stress generally have higher rates of abuse. Cultures and subcultures that approve of drinking alcoholic beverages have higher incidence rates of alcoholism than other cultures.

Specific Cultures. In the United States, alcohol is used in celebration and in sorrow. The American culture condones drinking in moderation (Ray, 1978). At the same time, parents tell their children not to drink. Although influenced by parental mores, adolescents are more influenced by their peers, and are open to the suggestions of fun and sex appeal as promoted by commercials and advertisements. Atkin, Neuendorf and McDermott (1983) found that among individuals between the ages of twelve and twenty-two, alcohol advertisements contributed to certain forms of problem drinking. There was a positive correlation between the amount of daily exposures

to ads for alcohol and excessive alcohol consumption, indicating that advertisements can influence alcohol consumption levels.

Specific Institutions. Cultural factors have been found to be important in substance abuse. Comparisons between male and female alcoholics in the United States, indicate that females experience more guilt and anxiety over drinking than do men (Ray, 1978). This is not surprising since it is only recently that women no longer have to be "closet drinkers". At same time, women are more accurate at reporting their drinking (Garrett and Bahr, 1974).

Family homeostatis and substance abuse are related. An unusual amount of tramatic incidences, such as early deaths and separations, could lead to eventual abuse. Homeostatic families make substance abuse a likely response for coping with the stress of these tramatic incidences, keeping the substance abuser helpless and dependent on the family; thus, keeping the family intact (Coleman, 1980; Stanton, 1980).

Coleman (1980) found that both parental living arrangements and personality traits are important determinants of child substance abuse. If the parents are not living together regularly, there is an increased chance that the child will become a substance user. A child also has a higher chance of becoming an abuser if there is a doting, over protective mother and a stern father who elicits fear in his children. Bry (1982)

found that factors such as parental substance misuse, low self esteem, low achievement motivation, and alienation from parents tend to increase the probability of substance abuse. When any of these factors were were combined, the probability was found to increase in an additive fashion.

### The Psychological Approach

The psychological approach to substance abuse is fractured into a large number of theories. Most supporting evidence comes from theories of reinforcement, psychoanalytic processes, and social psychology.

Reinforcement or Learning Theories. Learning theories focus on the reinforcement history of individuals. The operant, drinking alcoholic beverages is increased in frequency, duration and intensity due to the reinforcing properties of alcohol (Tarter and Schneider, 1976). There are a large number of viewpoints within this theory. These viewpoints all agree on a basic principle; that alcohol drinking frequency increases due to the associated reinforcing properties of alcohol.

Drive reduction theory states that a drive sets in motion responses. Extinction occurs if the drive is not reduced. If the response does reduce the drive, the response will continue, and be present each time the drive is present (Chafetz, 1962). Within alcoholism, drinking is the response which reduces a drive, such as anxiety, fear, depression or conflict (Tarter and Schneider, 1976; Blum and Blum, 1967; Roebuck and Kessler, 1972; Rychlak,



1973; Wilson, Abrams, and Lipscomb, 1980). Alcohol decreases feelings of tension or anxiety as it depresses the individual's inhibitions (Ray, 1974). The reduction of anxiety and tensions is rewarding. As a result the individual turns to alcohol whenever they feel anxious or tense. These patterns of response become a vicious circle, eventually leading to habitual drinking. This circle is diagramed by Roebuck and Kessler (1972, p. 72) as follows:

Drive --> Cue --> Response --> Reinforcement --> Drive ...

Within this diagram a drive is caused by a disturbance in a homeostatic condition or average mood, such as anxiety, fear, or loneliness. Cues are the presence, or availability of alcoholic beverages, while the response is a drinking binge. Reinforcement is the elimination of anxiety, loneliness, and tension, and finally a return to homeostasis.

In social learning theory (Rotter, 1954; 1955; 1960) expectancies generalize from specific situations to situations perceived as related or similar. An alcoholic's drinking habit is reinforced with generalization across negative feelings (Roebuck and Kessler, 1972). For example, an alcoholic may have begun drinking to eliminate feelings of anxiety in social situations. With time the individual finds that drinking eliminates

these feelings in other situations. For Bandura (Roebuck and Kessler, 1972), the "pre-alcoholic social learning of drinking behavior is the major determinant in the development of alcohol abuse " (p. 79). Cultural norms, which regulate and define the reinforcement contingencies associated with alcohol use are crucial. Norms are taught mainly through peer models during adolescence (Biddle, Bunk, and Marlin, 1980). Alcoholics are individuals who have learned through reinforcement and modeling, that alcohol can relieve a large number of aversive feelings. Thus, alcoholism is maintained through reinforcing properties of alcohol on the central nervous system (Roebuck and Kessler, 1972).

Roebuck and Kessler (1972) have suggested that individuals continuously exposed to environmental stress are more likely to drink than individuals who experience less stress. Drinking alcohol has minimal reinforcing value for individuals with little environmental stress.

Excessive drinking produces a secondary mechanism that is "independent of the original functional value of alcohol" (Roebuck and Kessler, 1972; p. 79). This secondary mechanism is withdrawal, characterized by symptoms of nausea, vomiting, and shaking. The alcoholic drinks, not only to escape the feelings of anxiety and tension, but also to avoid withdrawal symptoms (Roebuck and Kessler, 1972).

The Law of Effect states that behaviors followed by

punishment or aversive consequences will decrease in frequency. One can then wonder, why the drinking behavior persists when followed by negative consequences such as hangovers, social disapproval, and loss of jobs. One explanation suggests that aversive consequences are not associated with drinking behavior since considerable time elapses between the behavior and consequences (Ferster, Culbertson, Boren, 1975). The strongest association is between drinking and the reinforcing properties, not drinking and the aversive consequences.

Nusbaumer, Mauss and Pearson (1982) developed a theory of alcohol abuse which highlighted the nature of intermittent reinforcement provided by bars and taverns. The frequency of visits to bars and taverns was found to be an accurate predictor of excessive drinking, presumably due to increased reinforcement. The more individuals frequented bars, the more often they subjected themselves to reinforcement and peer modeling which favor excessive drinking.

Alcoholism, in learning theories, begins as a psychological need to reduce stress and anxieties, or alternatively, in social learning theories, with the concept of modeling and peer pressure. In either case, alcohol becomes necessary to deal with the feelings of anxiety and tension that are a part of life (Roebuck and Kessler, 1972).

Similarly, opiate addiction may also be caused by its

reinforcing effects (McAuliffe and Gordon, 1980). These reinforcing effects are intrinsic in nature, and may include euphoria and relief from withdrawal symptoms. The tendency to use opiates increases as a function of the quality, number, and size of the reinforcements that follow its use.

Psychoanalytic Theories. Psychodynamic theories of alcohol abuse are based on three assumptions (Miller, 1976). Alcoholism is thought to result from unconscious self destructive tendencies or fixation at the oral stage. Alcoholism also represents a need for power and is characterized by repressed hostility and a need for dependency.

Freud cited strong oral influences of infancy years as the major reason for excessive drinking. The mood change resulting from drinking alcoholic beverages represents a redirection of thought processes. The individual regresses to childhood thought processes and achieves gratification through thinking without logic, escaping reality (Miller, 1976).

Wolowitz and Barker (1968) supported this line of thought, describing the drinking setting as paralleling the experiences of infants. The drinking experience is described as "regressive gratification of a passive experience. Lighting is generally soft and dim, conversation is low, oral supplies are provided, the bartender keeps a close eye on his customer..."(p.

593). This parallels the oral stage, where conversation is soft and lights low because baby is asleep. The doting mother and supply of milk are represented by the bartender and oral supplies.

Machover, Russo, Machover, and Plumeau (1959) consider alcoholics to be latent homosexuals with a need for oral stimulation caused by a painful weaning experience from an overdominant mother. During childhood the individual felt rejected by the mother causing feelings of inadequacy, especially in the area of masculinity. Drinking is a way of reducing these feelings.

Psychoanalysts hypothesize that people become alcoholic to "satisfy the archaic oral longing which is a sexual longing, a need for security, and a need for the maintenance of self esteem simultaneously" (Roebuck and Kessler, 1972, p.86). According to this viewpoint, alcoholics have oral and narcissistic premorbid personalities, characterized as passive, dependent, submissive, gullible, and egocentric (Rychlak, 1973). Other individuals are only there to supply the needs of the alcoholic.

Alcohol removes inhibitions from consciousness pressed upon the individual by society, allowing the individual to respond with instinctual or id impulses. Wish fulfillment occurs since the id is no longer repressed by the superego.

Substance abuse results from "ego impairments and disturbances in the sense of self, involving difficulties with drive and effect, defense, self-care, dependency, and need satisfaction" (Khantzian, 1980, p29-30). The substance abuser has rigid personality traits. Alternative defenses must be used to maintain psychological equilibrium. Substances relieve "regressed, disorganized, and dysphoric ego states" (Khantzian, 1980, p.32)

Milkman and Frosch (1980) have suggested that abuser's use various substances for defensive purposes, or as a solution to conflict. If the drug induced state relieves any conflicts, the substance will likely be used again. Substances relieve feelings of helplessness in an otherwise hostile and threatening environment. The drugged state seems to be a regressive state which is similar to various stages of early childhood development, characterized by no delay of gratification, or foresight of consequences.

Wurmser (1980) suggested that substance abuse is "pharmacologically reinforced denial" (p. 71); an escape from an imposing reality. Substance use effects the superego as well as the ego, replacing ideals with instinctual commitments and a search for ideals that are otherwise repressed by the superego.

Social-Psychological Theories. Self-esteem is the main psychodynamic mechanism underlying social psychological

theories of substance abuse (Steffenhagen, 1980). Individuals with low levels of self-esteem are more likely to become substance abusers. Though substance use, the individual attempts to protect themselves from a hostile environment (Steffenhagen, 1980). Substance abuse is an alternative deviant response to poor attitudes or deviant behavior (ie. crime), and reduces feelings of inadequacy or low self-esteem (Kaplan, 1980). Scoufis and Walker (1982) found that heavy drinkers with low self esteem, scored significantly higher than light drinkers on questionnaires designed to measure need for power.

#### The Interactional Approach.

The interactional approach suggests multiple causes to substance abuse. These causes originate from within the person, environment, or both (Ausubel, 1980; Huba, Wingard, and Bentler, 1980). A multi-causal approach to alcoholism, and drug abuse in general, provides a framework allowing therapists and clinicians to consider an individual's life situation as a whole when making evaluations (Moos and Finney, 1983).

Ausubel (1980) found that the most important factor leading to substance abuse was the degree of access to narcotic drugs. Regardless of the psychological, sociological, or biological factors which are operating, an individual can not become a substance abuser without access to substances.

Another factor leading to substance abuse is the

degree of tolerance toward substance abuse in the environment. If the environment holds a low tolerance toward substance abuse, an individual will be less likely to becoming a drug abuser (Ausubel, 1980). Other factors also enter the interaction, some of which are genetic in origin, and can be magnified through the environment characteristics of low socioeconomic classes.

A similar theory was forwarded by Huba, Wingard, and Bentler (1980). They found that substance using behaviors are caused by both intra- and extra-individual forces, which interact with and modify each other shaping an individual's behavior. The intra-individual forces can be divided into biological and psychological factors, while the extra-individual forces can be thought of as interpersonal and socio-cultural factors.

Schwartz (1982) developed a biopsychosocial model of alcohol use. Schwartz emphasizes the need to incorporate all of these factors in assessing a person's alcoholism and recommendations for treatment.

In reviewing much of the work on substance abuse it is nearly impossible to decide which approach is most conclusive. While research tends to agree that there may be a genetic predisposition to substance use, it alone cannot explain all aspects of abuse, nor can any one of the other theories. Substance abuse does not seem to have one single cause, instead a combination of causes, as suggested by the interactional theories, might yield



more consistent and complete findings. Research utilizing interactive approaches are relatively new and utilize exploratory techniques when investigating potential factors influencing substance abuse. To date, no definite findings have been reported.