Dancing Among the Maenads

Varieties of Drug Use Pathology

Kevin Volkan

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Drug use as a psychopathological disorder occupies a gray area. Different cultures and societies take differing views of the use of psychoactive substances. For example, use of peyote by Native Americans is an integral part of their religion. Beetlenut, a mild stimulant, is used with impunity in India and many parts of Asia. The use of alcohol made from fermented fruits or grains is practically a universal feature of human culture. Coffee, tea, nicotine and a host of other substances are used regularly by a large percentage of the world's population. Some writers have even claimed that drug use is the result of a naturally occurring human drive to alter one's consciousness (Weil & Rosen, 1983)[1]. What, then, makes drug use pathological? For the most part the answer can be divided into three categories; Environmental and Societal Prohibition, Political Prohibition, and Maladaptive Behavior Change.

Under the category of Environmental and Social Prohibition, drug use is considered pathological because it goes against established beliefs and rules of society. These rules, in some cases,

were established because the resultant behaviors or attitudes of drug use pose a threat to the environmental safety of a society. In other cases, the rules and prohibitions seem arbitrary and are not apparently related to the establishment of a safe environment. An example of the former case would be the prohibition of alcohol use by oil tanker captains while on duty. As demonstrated by the wreck of the *Exxon Valdez* in Alaska, drug use can have serious environmental consequences for our society. An example of the latter case would be the prohibition of coffee drinking by members of the Mormon religion. While no doubt having significance within this group, the negative impact to society at large is less clear.

The second category of apparently psychopathological drug use would be primarily political in nature. Although it is rarely mentioned, some psychoactive substances cause the user to question his society, values, culture and self. Therefore, individuals and institutions which have a vested interest in maintaining the *status quo* find it convenient to label the use of certain drugs by certain people as pathological. A well-documented example of this is the suppression of the use of LSD in

the United States. The book *Acid Dreams* by Lee and Shlain (1985) tells the story of how LSD was studied by the CIA as a psychomimetic agent for mind control. During the course of this experiment, LSD was introduced into the general population and became a cornerstone for the counter-culture of the 60's. The effects of the drug soon set the tenor and climate for the 60's, a time of youthful rebellion and uninhibited expression. Although LSD can have seriously harmful effects (Seymor & Smith, 1987), especially among those with a predilection towards mental illness, it is physically one of the least harmful psychoactive substances known. In the 1950's LSD research was a legitimate line of inquiry and the 'good' effects of the drug were studies in controlled clinical settings. By and large this research involved giving LSD to alcoholic and obsessive patients to see if it would increase levels of insight and 'loosen them up'. In the space of a few years, however, LSD became a 'bad' drug and most of the research on its effects in therapy was halted. Much scientific information about LSD has been severely suppressed and misinformation has been disseminated with such efficiency, that it is commonly thought to be an extremely dangerous drug. However, a review of the

published research on LSD shows good effects, especially when it is used under supervision in a clinical setting (Grof, 1973, Ling & Buckman, 1965). The slander campaign against LSD has even been successful in eliminating most scientific research into the medical uses of LSD. Other drugs have also had the same treatment as LSD, the most notable recent example being MMDA and MDMA, the so-called 'designer drugs'. These drugs, although possibly more physically harmful than LSD, also produce heightened awareness and sensitivity and hence, are thought to be useful in conjunction with psychotherapy (Rosenbaum & Doblin, 1990). While it is certainly not the purpose here to argue the politics of drug use, it is clear that the label of psychopathology can work as a political tool. Nevertheless, most psychotherapists would undoubtedly question the place of such politicization of psychopathology in a truly free society. Although the political ramifications of drug use would make an interesting topic for study, they will not be elaborated on here (cf. Szasz, 1992).

The third definition of psychopathological drug use is that of maladaptive mood and behavior change. This definition represents the most common psychological understanding of the

psychopathology of drug use, although it often overlaps with the first definition. As noted earlier, change in mood and behavior would be considered positive in some societies and negative in another. In other words, the psychopathology of drug use represented here can be understood to cause individual suffering in both the short-and long-term. According to the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition Revised* (DSM III-R) of the American Psychiatric Association (1987) drug use psychopathology consists of symptoms and maladaptive behavioral changes associated with habitual use of a drug that affects the central nervous system. These symptoms and behavior changes need to be understood as universally maladaptive among all human cultures. Although it would be difficult to agree on a universal definition of what type of drug use is maladaptive, the DSM III-R lists such criteria as continued use of a drug despite the intractability of social, occupational, psychological, or physical problems that are clearly exacerbated by drug use, and the development of withdrawal symptoms. The DSM III-R goes on to state,

> The conditions are here conceptualized as mental

> disorders, and are therefore to be distinguished from non-pathological psychoactive substance use, such as moderate imbibing or alcohol or the use of certain substances for appropriate medical purposes, (p. 165)

The pathological patterns under this definition can be broken into the categories of *substance dependence* and *substance abuse.* While these two categories are useful for conceptualizing drug use, there is often a significant overlap between the two. Recent research, although controversial, has indicated that drug use follows a progression starting with milder or 'soft' drugs, like marijuana or tobacco, and ends up with dependence or addiction to dangerous or 'hard' drugs, like heroin or crack cocaine (Kandel, Kessler & Margulies, 1978). The ultimate stage of drug use pathology is usually understood as addiction to opiates. This addiction often takes place after a prolonged history of polydrug abuse (Blatt, Rounsaville, Eyre & Wilber, 1984).

There is some confusion about the terminology used to describe different levels and types of drug use pathology. Both categories of *dependence* and *abuse* will be used here, with *substance dependence* signifying greater pathology than *substance*

abuse. The term *compulsive drug use* is also used to indicate substance abuse with addictive qualities, regardless of the type of drug. The terms *drug* and *substance* will be used equivalently. The term drug or substance *use* will represent use of drugs without specifying the level of pathology (abuse or dependence).

In general, substance dependence is marked by a greater frequency and variety of symptoms than substance abuse. The DSM III-R (1987, p. 167-168) lists the diagnostic criteria for substance dependence, which are paraphrased below;

1. The substance is often taken in larger amounts or over a longer period of time than the person intended;

2. There is a persistent desire or one or more unsuccessful efforts to cut down or control substance use;

3. A great deal of time is spent in activities necessary to get the substance (e.g. theft), taking the substance (e.g. chain smoking), or recovering from its effects;

4. There is frequent intoxication or withdrawal symptoms when the person is expected to fulfill major role obligations at work, school, or home (e.g. does not go to work because hung over, goes to school or work "high", intoxicated while taking care of his or her children), or when substance use is physically hazardous (e.g. drives when intoxicated);

5. Important social, occupational, or recreational activities are given up or reduced because of substance use;

6. There is continued substance use despite knowledge of having a persistent or recurrent social, psychological, or physical problem that is caused or exacerbated by the use of the substance (e.g. keeps using heroin despite family arguments about it, cocaine-induced depression, or having an ulcer made worse by drinking);

7. A marked tolerance or need for markedly increased amounts of the substance (i.e., at least a 50% increase) in order to achieve intoxication or desired effect with continued use of the same amount;

8. Characteristic withdrawal symptoms;

9. The substance is often taken to relieve or avoid withdrawal symptoms.

10. The presence of at least three of the above criteria, along with evidence that some symptoms of the disturbance have persisted for at least one month, or have occurred repeatedly over a longer period of time, are necessary for the diagnosis of substance dependence.

Substance abuse is a category in the DSM III-R (1987) for recording maladaptive behavior patterns which do not meet the diagnostic criteria for substance dependence. The criteria for substance abuse, paraphrased from the DSM III-R (1987, p. 169) are as follows;

1. Continued use of a substance despite knowledge of having a persistent or recurrent social, occupational, psychological, or physical problem that is caused or exacerbated by the use of the psychoactive substance.

2. Recurrent use of the substance in situations in which use is physically hazardous (e. g. driving while intoxicated).

A diagnosis of substance abuse requires at least one of the above criteria. In addition, this diagnosis requires that the symptoms of the disturbance have persisted for at least one month, or have occurred repeatedly over a longer period of time and that the person has never met the criteria for substance dependence.

The DSM III-R (1987) also lists nine classes of psychoactive substances. Each of these (with exception of nicotine, which is generally considered a problem of substance dependence) is associated with both abuse and dependence. The substances are alcohol, amphetamine or similar substance, cannabis, cocaine, hallucinogens, inhalants, opiates, phencyclidine (PCP) or similar substance, and sedatives, hypnotics, or anxiolytics. A brief description for each substance taken from the DSM III-R and other sources (Levin, 1987; Seymor & Smith, 1987) is listed below.

Alcohol

Alcohol, ethanol, or ethyl alcohol is produced through the fermentation of sugars by yeast. This drug has been present in

some form throughout human history. It is still the most widely used and abused drug of choice in the United States.

People vary widely in their tolerance to alcohol. Some of this tolerance is the result of genetic variation in the enzymatic ability to process alcohol in the body. Tolerance to alcohol also increases with use. Alcohol consumption typically follows one of three patterns. The first pattern is daily intake of large quantities, the second is regular weekend bingeing, and the third is long periods of sobriety punctuated with daily binges of heavy drinking which persist for weeks or months. The onset of alcoholism typically occurs during the late teens and early 20's for males. The disease is more variable with females. For example, their onset is usually later and also often associated with mood disorders, although dependence upon alcohol is commonly associated with depression in both sexes. Alcohol is often used with other drugs and this associated polydrug abuse is most often found among teenagers. Middle-aged people commonly use alcohol with tranquilizers (benzodiazepines). Nicotine dependence is common among alcohol abusers of all ages. It has also been shown that alcohol dependence can be transmitted from generation to generation

without the presence of the dependent family members. Alcohol dependency, however, has been shown to have a genetic component.

The effect of alcohol is to depress the central nervous system. At small doses, alcohol releases inhibitions and produces minor behavior changes and a general elevation of mood. At higher doses, marked behavior change takes place. This behavior can become increasingly violent and paranoid. At massive doses, the central nervous system can be profoundly depressed, resulting in death.

Amphetamines and Related Substances

This class of drugs includes methamphetamine, dextroamphetamine, amphetamine, and various 'designer drugs' such as MMDA, which are chemically similar to amphetamine. These drugs are stimulants which are taken orally, intravenously or nasally. A form of the drug called 'ice', which can be smoked, has also recently become prevalent. This class of drugs was once widely prescribed for weight loss, but is now reserved for those

with severe weight problems or narcolepsy. People self-prescribe amphetamines for a variety of reasons which do not fall under the legal uses of the drug. Truck drivers and students commonly take amphetamines to stay awake and maintain concentration for long periods of time. Physicians and combat pilots have also been known to take amphetamines for this reason. Amphetamine use usually falls into one of three patterns, episodic use, chronic daily use, or almost daily use. Bingeing is common with users taking high doses for short periods of time followed by a few days of recuperation. The binges tend to end when the supply of the drug and/or the users become exhausted. The period of recuperation is referred to a "crash". During this time the user experiences profound depression as well as physical depletion. Users of ice no doubt have a worse crash experience because smoking the drug leads to a higher concentration of the drug in the body in a shorter amount of time. Amphetamine abusers will often take other drugs, usually alcohol or a narcotic. The amphetamine user typically demonstrates impulsively and rapid mood changes. At high doses, toxic psychosis can occur, mimicking a paranoid delusional state. Withdrawal from the drug has been associated with depression,

general irritability, anergia and isolation. Intravenous users tend to progress to dependence faster than those who use the drug nasally or orally. Tolerance to amphetamines takes place rapidly.

Cannabis

Cannabis derives its psychoactive properties from tetrahydrocannabinol (THC) which is present in the leaves and flowers of the plant. The plant is usually smoked but can be eaten to give a longer lasting effect. Cannabis has some documented medical uses such as relief of eye pressure in glaucoma and the relief of nausea in patients undergoing chemotherapy treatment for cancer. Cannabis use is common and it is probably the most widely used illegal drug in America. Although many people use Cannabis, the rate of abuse and dependence on this drug is fairly low (McVay, 1991; Smith, 1970). The acceptance of Cannabis in America is such that many communities have substantially reduced the penalties for possession of the drug, resulting in *defacto* legalization (McVay, 1991). Cannabis dependence and abuse usually develops over a long period of time. The user does not generally develop a tolerance to the drug and in fact may need

smaller doses after repeated use. Generally, it is the frequency of use rather than the amount used that increases over time. Cannabis dependence and abuse is related to maladaptive behavior, short term memory impairment and dysphoria.

Cocaine

Cocaine is derived from the leaves of the coca plant which is indigenous to South America. In its native countries, coca leaves are chewed for their mild stimulant effect. Aside from some dental problems, chewing coca leaves does not appear to be a harmful practice. Cocaine is removed from the coca leaves through chemical processes which result in the production of cocaine hydrochloride powder. This powder is usually taken nasally or through intravenous injection. Recently, the cocaine alkaloid has been purified from the powder into a smokeable form of the drug commonly called "crack". The crack form of cocaine is smoked and the effects of the drug are experienced very rapidly. Cocaine use is similar to the use of amphetamines with episodic use, chronic daily use and almost daily use. Bingeing is also common and is commonly associated with crack smoking. The crash at the end of

a binge is also similar to experience of the amphetamine user, though the crash for the crack smoker (like the ice user) appears to be dramatically worse. This may be due to profound changes in neurotransmitter levels in the brain of the crack user. The behavioral and mood changes, and the course of use associated with cocaine use are similar to those caused by amphetamine use.

Hallucinogens

This category includes man-made drugs related to LSD, DMT, MDA, and organically occurring substances like mescaline and psilocybin. Most hallucinogens are taken orally, although other modalities of administration are sometimes used. Patterns of use are highly variable. Evidence indicates that most users experiment only a few times with these drugs. Anecdotal evidence suggests that for most people there are three stages of hallucinogen use. The first stage is an experimental one in which a user finds out whether or not he likes the drug. If the user finds the drug enjoyable he may begin to take it on an episodic regular basis. After a period of time, which depends on the amount of the drug taken and the frequency of use, the user will begin to become

bored or disillusioned with the psychedelic experience. Many users at this point will say that there is nothing more for the drug to "teach" them and they will stop using the drug abruptly. Although the literature indicates that users build a tolerance to hallucinogens, the quality of these drugs is so variable that this is virtually impossible to determine. Dependence on hallucinogens is very rare and most users return to a normal pattern of life after a short period of use.

Inhalants

These drugs are usually made up of hydrocarbons such as found in glue, hair-spray, paint, paint thinner, typewriter correction fluid, spray paint and even gasoline. Little is known about the different effects of these substances except that they are all capable of producing some type of "high". As the name implies, these substances are administered by breathing in their fumes through the nose and mouth. Inhalant users have been found to originate from highly dysfunctional families and have a number of other complicating problems including use of other drugs, delinquency, truancy, etc. There are higher incidences of inhalant

use among the lower socioeconomic classes. Inhalant users generally start at a young age, typically with a peer group who are abusing alcohol and cannabis. Inhalant use can increase until it becomes the drug of choice for the user. Dependence on inhalants has been documented for industrial workers who have been exposed to these substances in the workplace over long periods of time. These workers may begin using the inhalant for its psychoactive effect. Inhalant users experience many medical complications including kidney and liver disease. These problems can arise from even occasional use.

Nicotine

Nicotine, derived from the tobacco plant, is a naturally occurring pesticide and is one of the most addictive drugs known to man. The DSM III-R (1987) does not list nicotine abuse as a category because it is assumed that all users will become dependent on the drug. The most common form of nicotine use is cigarette smoking. Other forms of use include cigar and pipe smoking as well as chewing tobacco and snuff. These less common forms of tobacco use are relatively less likely to lead to

dependence and medical problems. Nicotine causes and aggravates a number of serious medical complaints. Anxiety over the possible medical problems caused by the drug are reported by many users. In recent years there has been increasing social pressure to quit smoking in the form of workplace prohibitions and city ordinances banning smoking in public places. Nicotine dependence develops rapidly and most users fail at numerous attempts to stop using the drug. Relapse only becomes uncommon after the user has abstained for at least a year.

Opiates

These substances are either man-made or derived from the opium poppy. Many opiates have legitimate medical uses such as analgesics and anesthetics. Opiates are usually taken orally or intravenously, but may also be taken nasally or smoked. Opiate dependence sometimes develops from a legitimate use, such as treatment by a physician for pain. Most often, however, users try the drug in an illegal form in their late teens or early twenties after using many different types of drugs. The use of opiates is often peer oriented and many aspects of the use of the drug are

ritualized, including needle sharing which puts opiate addicts at risk for contracting diseases such as HIV. (See D. Rosenfeld, 1992, p. 236 for a discussion of ritual needle sharing). After a user is addicted to an opiate, the procurement and use of the drug comes to dominate their existence. Recovery from opium dependence is related to the context of the drug use. Many of the soldiers who became addicts during the Vietnam War have been able to relinquish the habit once they were back in the United States (Zinberg, 1975). Most addicts, however, become involved in a pattern that is repeated over a long period of time. This pattern includes periods of remission from dependence, usually while in a treatment center or prison. Some addicts, provided they can survive the violence-prone lifestyle associated with procuring the drug, are better able to abstain and kick the habit after an average of nine years. Other addicts continue to be dependent throughout their lives.

Phencyclidine

This group includes Phencyclidine (PCP) and other man-made substances. These drugs can be taken in almost any mode;

nasally, orally, intravenously and by smoking. Most users are exposed to PCP when it is mixed with other substances. A user will take a drug (usually cannabis) and notice that its effect is different. The user will subsequently find out that this difference is due to the addition of PCP to their drug. If the user likes the effect he will then seek out PCP specifically. Many users are experimental, finding the effects of the drug to be highly variable. These experimenters discontinue using PCP almost immediately. PCP abuse or dependence develops after a short period of occasional regular use. PCP is usually taken in binges that can last several days, although daily chronic use is also commonly reported. It is not clear whether or not tolerance or withdrawal symptoms develop from PCP use.

Sedatives

This group includes substances ranging from mild tranquilizers to barbiturates. Although these substances are very different, they all produce similar effects. They are commonly prescribed by physicians, and usually taken orally. Patterns of use are similar to opiates. Some users start taking sedatives under a

physician's prescription, while other users start taking these drugs with a peer group as teens or young adults. Tolerance develops rapidly as do withdrawal symptoms upon cessation of use of these drugs. Episodic use soon leads to chronic use as a tolerance to the drug develops. Chronic use is strongly related to an increase in drug seeking behavior. Although sedatives are highly addicting, many people stop using these drugs and recover from their dependence. Withdrawal from some sedatives is very dangerous and should be done under a physician's supervision.

Use of Multiple Substances

In addition to the above categories, many people use a number of different drugs without a clear drug of choice. These users are classified as *polysubstance dependent, psychoactive substance dependent not otherwise specified* or, *psychoactive substance abuse not otherwise specified.* The classification category of polysubstance dependence is used when at least three substances (excluding caffeine and nicotine) are used repeatedly for six months or longer. The categories of psychoactive substance abuse and dependence not otherwise specified represent residual

categories for substance use that does not fall into one of the other groups.

Prevalence of Drug Use

Drug use in the United States rose dramatically in the 1960's and 70's and then leveled off to a fairly consistent level (Falco, 1988). In 1962 it was estimated that 4% of the population had tried an illegal drug. By 1982 this percentage rose to 33%. The cost to society of substance abuse has been estimated to be between ten- and twenty-billion dollars per year in the United States (Seymor & Smith, 1987). Substance abuse is perhaps most notably prevalent in adolescence, during which time most initiation into drug use takes place (Thorne and Deblassie, 1985). According to Wurmser (1987), "The treatment of compulsive drug use is nearly always related to the issues of adolescence and early adulthood" (p. 157). A recent survey reports that nearly 80% of adolescents have tried an illegal drug and roughly 60% have tried illegal drugs other than, or in addition to marijuana, by the time they are in their mid-20s. Approximately 65% of high school seniors use alcohol on a monthly basis and 37% drink heavily on

occasion. Daily cigarette smoking has been reported by 18% of high school students (Johnson, O'Malley & Bachman, 1987).

The health hazards of cigarettes and alcohol are well known. These two substances are leading contributors to mortality through either disease or traumatic accident (Statistical Bulletin, 1984; Surgeon General, 1979; Sutton, 1983). The effects of marijuana use are less clear, but there is evidence of negative physiological and psychological effects from long-term intensive use and impairment of cognitive function in the short term (Haas, 1987; Institute of Medicine, 1982; Peterson, 1984). Other studies, however, have shown that marijuana use can increase feelings of self-acceptance and social cohesion among users (Bentler, 1987; Greaves, 1980).

Drugs such as cocaine and narcotics have been reported to be dangerous (Chasnoff, 1987; Duncan, 1987). These substances are especially addicting and contribute directly and indirectly to the spread of diseases, including HIV infection (Battjes & Pickens, 1988; Chatlos, 1987; Falco, 1988; Ravenholt, 1984). These facts are especially of concern when it is estimated that up to 10% of

those who try drugs are at risk for becoming addicted (Seymor & Smith, 1987).

Exogenous Factors Affecting Drug Use

There is an extensive literature on the antecedents of drug use. Much, if not most, of this literature is based on studies of exogenous factors, i.e. social, environmental, interpersonal and behavioral factors. Although it is almost impossible to find a consensus among different research studies about the antecedents of drug use, there is enough overlap to allow the construction of broad categories (Newcomb, Maddhian & Bentler, 1986; Wallack & Corbett, 1987; Perry & Murray, 1985; Hawkins, Lishner & Catalano, 1986). These categories can be conceptualized as *demographic, social-environmental, interpersonal* and *behavioral.*

Among the demographic factors affecting drug use are sex, age, ethnicity, geographic region and socioeconomic status. In general, men are more likely than women to use alcohol and illicit drugs (Ensminger, Brown & Kellam, 1982; Johnston, O'Malley & Bachman, 1987; Kandel & Logan, 1984): minorities appear more

likely to use drugs than Caucasians, (although some studies have disagreed with these findings, cf. Keyes & Block, 1984): and non-college bound students are more likely to use drugs than college bound students. Early age of onset of any drug use may be the best predictor of future drug use (Kandel, 1975; Kandel & Faust, 1975; Kandel, Kessler and Margulies, 1978; Hawkins, Lishner and Catalano, 1986). Although these demographic variables are related to substance use, they are not as strongly related as the social, environmental, interpersonal or behavioral factors (Perry & Murray, 1985).

The social and environmental factors related to drug use have been extensively studied in adolescent populations. These studies have focused upon three institutions or groups in society; families, schools and peers. The extent to which adolescents—one of the largest groups of drug users—interact with these groups is particularly important (Ensminger, Brown & Kellam, 1982; Hundleby & Mercer, 1987; Jessor, 1979; Kandel, 1980; Kandel & Adler, 1982; Marcos & Bahr, 1988). Adolescents are more likely to use drugs if their family or peers approve, tolerate or model drug use (Brook, Whiteman, Scovell & Brenden, 1983; Johnson, Shontz

& Locke, 1984; Smith, Koob, & Wirtz, 1985). Adolescents are also more likely to use drugs if parent and peer values are in conflict and the adolescent is weakly integrated into the home and strongly bonded with friends who exert pressure to use substances (Babst, Miran, & Koval, 1976; Jessor, Jessor & Finney, 1973; Meeks, 1985; Mijuskovic, 1988). Finally, adolescents are more likely to use drugs if they are loosely bonded with their school (Hawkins, Lishner, Catalano, & Howard, 1986; Hawkins, Jenson, Catalano & Lishner, 1988).

Interpersonal factors associated with drug use include a variety of factors related to failure or nonconformity. The factors are: valuation of independence, valuation of lower achievement, greater expectation of failure (low self-efficacy), low assertiveness, low religiosity, greater tolerance of deviant behavior, greater criticism of authority and social institutions, greater rebelliousness, low social conformity, increased receptivity to new ideas and experiences, increased interest in spontaneity and creativity, and increased stress and negative life change events (Dielhman, Campanelli, Shope & Butchart, 1987; Horan & Williams, 1982; Newcomb & Harlow, 1986; Perry & Murray, 1985;

Segal, 1986).

Finally, behavioral factors that may affect drug use include early sexual activity, poor academic performance, the use of other legal or illegal drugs and delinquent behaviors. Several studies have indicated that the use of cigarettes and illegal drugs are interrelated (Coomb, Fawzy & Gerber, 1984; Jessor, Jessor & Finney, 1973; Kandel & Logan, 1984; Yamaguchi & Kandel, 1984a, 1984b). Research has suggested that many of these behaviors precede drug use as well as follow it. Some researchers have shown that it can be constructive to think of the variables in the demographic, social, environmental, interpersonal and behavioral categories as risk factors in an epidemiological model (Newcomb, Maddahian & Bentler, 1986; Bry, McKeon & Pandrina, 1982). These studies have supported the idea the number of risk factors is positively and linearly associated with drug use.

Thus, even though individual factors related to the etiology of substance use have been identified, there is no single exogenous factor that accounts for drug use. In the words of one review,

> This view supports previous reviews of the substance

> abuse literature which have found a variety of etiological or predisposing factors to substance abuse that elude parsimonious conceptual integration. (Newcomb, Maddhian & Bentler, 1986, p. 529)

In a previous paper (K. Volkan & Fetro, 1990), I have attempted to clarify this confusion by elucidating the psychological and social underpinnings of drug use in order to identify the components necessary for the creation of successful drug use prevention programs. My review suggests that most research on drug use has focused more on exogenous environmental factors than on endogenous internal psychodynamic factors. Notwithstanding the usefulness of the demographic and epidemiological research into the exogenous factors related to drug use, it is my opinion (along with others) that this research is theoretically vacant with regards to the intrapsychic developmental factors leading to the compulsive use of drugs (Wurmser, 1974). More importantly, it could be misleading with regard to the prevention and treatment of pathological drug use (Shedler & Block, 1990). Although exogenous factors obviously play an important role in the explanation of drug use, I believe that this role cannot be fully

understood until the endogenous factors related to drug use are elucidated.

Notes

1 More comprehensive psychologies such as psychoanalysis, do not, of course, believe in such a drive. The apparent observation of a human drive to alter one's consciousness may be due to the widespread use of mind-altering substances in human cultures. Nevertheless, it is my belief that drug use is not due to an underlying conscious-altering drive, but to the nature of human development, whicn has universal features.

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