1995

The Relationship Between Mind Altering Substances and Aggressive Behavior

Keith A. Leonard

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An Abstract Presented to the Faculty of the Graduate School of Lindenwood College in Partial Fulfillment of the Requirements for the Degree of Master of Arts
1995

ABSTRACT

The relationship between aggressive behaviors and substance abuse was examined using subjects placed on probation for assault in St. Louis County. These subjects were administered the Substance Abuse Questionnaire, at the probation office, within seven days of sentencing. The Substance Abuse Questionnaire, designed to assess behavior and risk for behaviors including aggressivity, has a validity scale which measures how truthful the individual was while completing the test. Those subjects whose scores on the Substance Abuse Questionnaire were determined to be valid, were condsidered in this research. The purpose of this research was to examine whether the introduction of legal or illegal substances, such as alcohol or drugs, was related to the commission of a violent act. The results of this research indicated that there was not a statistically significant relationship between substance use and aggressive behavior.

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COMMITTEE IN CHARGE OF CANDIDACY

Marilyn Patterson, Ed. D.

Associate Professor, Advisor

Pamela Nickels, Ed. D.

Assistant Professor

Program Direstor

Jesse Harris Jr., Ph. D.

Adjunct Faculty

DEDICATION

This thesis is dedicated to my loving wife, Gina, whose constant love and support were invaluable during this endeavor. Also to my three beautiful girls, Amanda, Annelise, and Susannah, who everyday bring joy to my life. I would also like to thank my parents Michael and Jacqueline Leonard and Howard and Lois Marshall, whose love and encouragement made my education possible.

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CHAPTER I

INTRODUCTION

The Relationship Between Mind Altering Substances and Aggressive Behavior

The population of the world is rapidly increasing. Cities and communities continue to expand in an effort to accommodate this increase. As large metropolitan areas continue to grow so do the problems of unemployment, poverty, and crime. As the population increases the rate of crime is expected to increase proportionally. The Federal Bureau of Investigation reported that in the United States between the years of 1960 and 1991 the population of the United States increased by 40%; however, violent crime increased by 560%, murders increased by 170% rapes by 520%, and aggravated assaults by 600% (Rogalski, 1995). Pihl and Peterson (1993) reported "violence is the leading cause of death for individuals under 45 years of age; a rape, a murder, or an assault occurs every 25 seconds and six million individuals each year are victims of violent crime" (p. 263). This research examines one existing theory identifying the cause of such drastic increases in violent behavior and crime: the relationship that

exists between the consumption of alcohol or drugs associated with aggressive behavior and violent crime. The purpose of this research was to determine how significant the existence of a mind altering substance was in the commission of a violent act. The files of forty males subjects on probation in St. Louis County for assault were analyzed, focusing on aggressivity scores obtained from the Substance Abuse Questionnaire (SAQ), and whether or not the individual had been drinking alcohol or using drugs at the time of the offense.

CHAPTER II

REVIEW OF THE LITERATURE

VIOLENCE IN SOCIETY

Violence is defined as "the intentional action by one individual or individuals that directly results in physical injury to another individual or individuals" (Parker, 1993, p. 117). Violence, however, occupies an ambiguous position in society and is perceived differently dependent upon the culture of the society. In the United States for example, there are strong normative, religious, and legal ramifications against violent behavior. Despite these inhibitors, "violence has a central and often exalted place and is portrayed in entertainment, sporting events, and even in international relations as frequently the only effective course of action" (Parker, 1993, p. 120). According to Parker (1993) "People may allow themselves to become violent around those norms that are weakest in terms of condemning violence (e.g., those prohibiting violence in marital conflicts or interpersonal contests of 'face' or honor" (p. 120).

Research has proven that environmental factors influence aggressive behavior. Despite the current

high crime rate in the United States, Scott (1992) reported that as a country industrialized, homicide rates decreased. According to Scott (1992) "tribal societies have higher homicide rates than modern industrialized societies of Western Europe and North America" (p. 8). Scott (1992) attributed this fact to three control processes. First, a solid economic system that provides full or close to full employment for the members of the society. Employment encourages and rewards members who obtain material goods through peaceful, normative means. Second, industrialized societies possess a well functioning police system that protects citizens and apprehends and punishes law breakers quickly. Last, modern industrialized societies have a cultural system that teaches orderly behavior as the norm. Breakdown in any of these controls will increase violence (Scott, 1992).

PREDICTORS OF VIOLENT BEHAVIOR

Predictors of violent behavior at the individual level include situational stress, opportunities for violent behavior, absence of a support system, and family stressors. Moffatt (1994) identified social

skills, such as interaction with others, and substance abuse as the two most important predictors of violent behavior. Moffatt (1994) further stated that "social deficits could have their roots in a deficient rearing environment" (p. 685). Research has proven that this lack of child rearing skills can lead to delinquent and violent behavior on the part of the child. "Although they comprise only 12% of the total U.S. population, youth between the ages of 13 and 18 account for 39% of all the arrests for the offenses of homicide, rape, robbery, aggravated assault, burglary, larceny, motor vehicle theft, and arson" (Larson, 1992, p. 101). A study conducted by Malinosky-Rummell and Hansen (1993) found that "physically abused adult male alcoholics demonstrated significantly more legal difficulties and more violence against authority figures than did non-abused comparison groups who were matched on age, marital status, education, employment, occupational level, and drinking pattern" (p. 70). In a separate study Nurco, Kinlock, and Balter (1993), in a survey of over 2,000 prison inmates found that those labeled violent offenders, or those who reported the highest rates of serious and violent adult crime, had the

earliest onset of both drug abuse and criminal behavior.

Moffatt's (1993) second main predictor of violent behavior is substance abuse. Yudofsky, Silver, and Hale (1993) noted that "as defined in DSM-III-R, the characteristic clinical presentations of cocaine-induced organic mental disorders include rageful affects and aggressive behaviors" (p. 218).

ILLEGAL DRUGS, VIOLENCE, AND CRIME

Boyum and Kleiman (1995) identified three models: (a) the psychopharmacological, (b) the economically compulsive and (c) the systemic as causes of drug related violence. The systemic model relates to the violence inherit in the drug trade. The violence erupts as the result of rival drug dealers attempting to gain control of geographical or economic areas. Individuals in this category resolve issues or disputes through violent means (Pihl & Peterson, 1993).

Economically compulsive individuals commit crimes, sometimes violent crimes, to gain access to drugs. The psychopharmacological model relates to either the violent side effects associated with a specific drug or

because of factors, such as antisocial behavior, that predispose violence and drug usage to exist simultaneously (Pihl & Peterson, 1993).

The relationship between substance abuse and violent behavior is often researched by examining perpetrators of crime. These studies have shown that a disproportionate number of active criminals are also substance abusers. "In Manhattan, urine tests indicate that over three-quarters of those arrested have recently taken illicit drugs" (Boyum & Kleiman, 1995, p. 295). Boyum and Kleiman (1995) noted that the criminal activity of addict-offenders seems to rise and fall relative to their drug consumption. Nurco et al. (1993) studied the relationship between drug abuse and crime and discovered that those individuals who engaged in the most serious form of drug addiction (heroine addiction) were also involved in the most serious types of crime. As the individual's drug abuse becomes progressively more severe in regards to the type and amount of the drug used, so does the severity of the crimes committed.

The association between violent behaviors and marijuana first became prominent in the 1930's when detailed accounts of violence related to marijuana use

were published in newspapers all over the country (Spunt, Goldstein, Brownstein, & Fendrich, 1994). Spunt et al. (1994) researched this topic further using interviews conducted with 268 individuals incarcerated in the New York State correctional system for homicides committed in 1984. Results of these interviews indicated that marijuana was the most commonly used illegal drug in the sample, and approximately one third of the sample had used the drug in the 24 hour period prior to the homicide.

Physiologically, smoking marijuana causes an increase in heart rate, and blood pressure, symptoms characteristic of stress (Oakley & Ksir, 1990). Psychologically, smoking marijuana may cause an increase in irritability, agitation, impulsivity, distortion of perceptions, or a reduction of inhibitions (Taylor et al., 1976). Oakley and Ksir (1990) outlined the phases involved in a "typical" marijuana high. In the initial phase the individual may experience stimulation, mild tension, anxiety, or paranoia. This is replaced by the second phase, a pleasant feeling of well being. During the last phase the individual becomes tranquil and introspective. Oakley and Ksir (1990) also noted that rapid mood

changes are common. Taylor et al. (1976) concluded that the "emotional stability" of the individual contributes to the effects elicited by the marijuana.

The relationship between cocaine and aggressive behavior is more apparent. This relationship is evident due to the pharmacological properties of cocaine, as well as the context in which the cocaine business exists. The DSM IV classification of cocaine delusional disorder states that after the use of cocaine, "rapidly developing persecutory delusions appear", and that response to these delusions include "aggressive or violent acts against enemies" (Yudofsky et al., 1993, p. 221). Boyum and Kleiman (1995) found that violence in the cocaine business (systemic model) is the highest of any illegal drug and that pharmacologically "cocaine addicts are more prone to aggression and thus, presumably, to violent crime" (p. 304).

Neuroanatomically, cocaine acts directly upon the mesolimbic and mesocortical areas of the brain, the areas that regulate and control the exhibition of aggressive and violent behaviors (Miller, Gold, & Mahler, 1991). According to animal and human studies, cocaine affects the neurons in the brain that promote

aggressiveness, impulsivity, hyperactivity, and impaired judgement. These studies have documented aggressive and violent behaviors induced by both cocaine injections and electrical stimulation of these areas of the brain (Miller, Gold, & Mahler, 1991).

The psychological symptoms of cocaine use progresses through four stages. Stage one, euphoria, is characterized by emotional instability, euphoria, and increased cognitive and hyperactive motor function. Stage two, dysphoria, is marked by sadness, apathy, and poor attention span and concentration. In stage three, labeled paranoia, suspiciousness, hallucinations and paranoia are present. The final stage, psychosis, is characterized by disorientation, hallucination, paranoid ideations, and impulsiveness (Miller et al., 1991). Clinical surveys conducted by Miller et al. (1991) have determined that violent behavior can occur during any of these stages. The explanation for the violent behaviors associated with cocaine use may be related to the drugs addictiveness. "The loss of control underlying the preoccupation, compulsive use, and relapse to cocaine use is potent and appears greater than that related to other drugs" (Miller et al., 1991, p. 1079). Pharmacologically, cocaine and

amphetamines have similar properties; and aggressive behavior has been shown to be a possible side effect of amphetamine use. (Boyum & Kleiman, 1995).

The introduction of crack cocaine further exacerbates the problem of cocaine induced violence. The drug is a less expensive form of cocaine and therefore is more available to areas that are affected by poverty and an existing high crime rate (Baumer, 1994).

A number of studies have also been conducted regarding the relationship between the effects of sedative drugs, such as diazepam or valium, and aggressive behavior. Leccese (in Taylor & Chermack, 1993) discovered "drugs that produce anxiolytic/sedative effects facilitate aggressive behavior" (p. 82). This hypothesis has been supported by research done by Pagano in 1981, Wilkinson in 1985, and Gantner and Taylor in 1988 (Taylor, & Chermack, 1993). Taylor and Chermack (1993) concluded "while depressants such as diazepam may reduce anxiety and be helpful in the treatment of insomnia, they may also result, according to our research, in impaired judgment and a propensity to behave aggressively" (p. 80). Despite the medicinal benefits of such drugs the costs

must be considered as well. Bond and Silveira (1993) noted "alprazolam is a triazolobenzodiazepine which is being used increasingly in high doses to treat panic disorder and which has been reported to increase verbal hostility and behavioral dyscontrol in a percentage of these patients and in patients with borderline personality disorder" (p. 30).

ALCOHOL, VIOLENCE, AND CRIME

Another substance that has similar behavioral and psychological effects as benzodiazepines and barbiturates is alcohol. Pihl and Peterson (1993) wrote "these drugs appear to interfere with the operation of the complex limbically based neurological system responsible for governing and integrating organismal response to cues of threat, punishment, frustrative non-reward, and novelty" (p. 272).

Alcohol consumption is a common activity for many individuals from a wide array of cultures. Alcohol is common at religious celebrations, social events, holidays, and leisure activities. Alcohol consumption is a daily activity for 6.3% of the United States population (Collins & Messerschmidt, 1993).

Parker (1993) divided cultures into two categories: wet drinking cultures and dry drinking cultures. Wet drinking cultures are characterized by daily or almost daily wine consumption. Alcohol is integrated into society and plays an important role in daily activities. Dry drinking cultures are characterized by the consumption of more "hard liquors" or spirits than either wine or beer and is consumed in much greater quantities compared to wet drinking cultures (Parker, 1993). The coexistence of wet and dry drinking cultures in a society, a "mixed" drinking culture such as the United States, may lead to an increase in violent behavior. Parker (1993) hypothesized that "the link between alcohol and violence is strengthened when a wet drinking culture coexists with a dry drinking culture, because it results in the increased social integration of binge drinking" (Parker, 1993, p. 118).

In 1957, Takala and his associates in Finland (in Gustafson, 1993) studied the relationship between alcohol consumption and aggression and reported increases in both verbal and behavioral aggression as a function of alcohol intoxication. "They also reported

that distilled spirits increased aggression more than does beer" (Gustafson, 1993, p. 20).

Research conducted by Murdoch, Pihl, and Ross (1990) as well as Boyum, and Kleiman (1995) concluded that more crimes, especially violent crimes, are committed under the influence of alcohol than under the influence of all other illegal substances combined. Boyum and Kleiman (1995) wrote "That alcohol, a legal and inexpensive drug, is implicated in so much crime suggests that substance abuse itself, and not just economic motivation or the perverse effects of illicit markets, can play a significant role in crime" (p. 297). Murdoch et al. (1990) examined 9,304 cases of violent crime from 26 studies in 11 separate countries and found that 62% of the perpetrators were intoxicated at the time of the offense. "In addition to being involved in the majority of traffic deaths, alcohol has been cited as a major factor in drownings, fires, assaults, murders, robberies, and sex related crimes" (Hull, 1981, p. 586).

PHARMACOLOGICAL EFFECTS OF ALCOHOL

The consumption of alcohol appears to affect the area of the brain referred to as the prefrontal cortex. Many of the complex cognitive abilities are controlled by this area of the brain. Individuals who suffer injury to the prefrontal cortex of the brain experience a reduced ability to think abstractly. "They plan and/or implement courses of action poorly and cannot modify such courses in accordance with their consequences" (Peterson, Pihl, & Rothfleisch, 1990, p. 114). These individuals cannot recognize the influence of their behaviors on others or themselves, synthesize information correctly, and experience decreased verbal fluency. The behaviors exhibited by those with damage to the prefrontal area of the brain are similar to the characteristics associated with alcohol intoxication (Peterson et al., 1990).

The levels of serotonin and dopamine in the brain have been linked to the expression of aggressive behavior. Dopamine, a neurotransmitter, appears to facilitate psychomotor activity motivated by reward and punishment. Serotonin appears to act as a regulator of this facilitation. "Increased dopamine activity

stimulates aggression. Increased serotonin activity suppresses dopamine induced aggression, whereas decreased serotonin activity increases such aggression" (Pihl & Peterson, 1993, p. 115). Similar to alcohol, chronic consumption of cocaine has been shown to decrease serotonin levels in the brain (Yudofsky et al., 1993). Reduced levels of serotonin in the brain have been associated with "heightened vulnerability to depression, increased risk of violent suicide, propensity to exhibit aggressive or impulsive behavior, and susceptibility to alcohol abuse both among persons with psychiatric disorders and among the general public" (Pihl and Peterson, 1993, p. 114).

Serotonin, also a neurotransmitter, is a chemical by which nerve cells communicate with one another. Serotonin helps regulate such functions as bodily rhythms, food and water intake, sexual behavior, and response to pain. Various mental disorders such as depression, alcoholism, and obsessive compulsive disorder also appear to be associated with reduced levels of serotonin in the brain (Pihl & Peterson, 1993). When an individual with low levels of serotonin begins an activity, such as drinking alcohol, that individual will have difficulty stopping the activity.

When the serotonin deficient individual consumes alcohol, the ethanol further decreases serotonin levels, resulting in the stimulation of the dopamine driven psychomotor system, resulting in increased aggression in order to obtain rewards or deter punishment (Pihl & Peterson, 1993).

Pihl, Peterson, and Lau (1993) described the four dose and time related pharmacological effects of alcohol which can increase the expression of aggression. The first of the effects reduces the threat related inhibition of behavior; the second augments psychomotor activity; the third interferes with specific aspects of higher order cognitive function; and the fourth produces increases in pain sensitivity.

Defensive behavior in response to the threat of injury or harm is a behavior common not only to humans but to every animal on the planet (Scott, 1992). Alcohol, as an anxiolytic, reduces the inhibitory effect fear normally places on the exhibition of aggressive or violent behavior and increases the probability of aggression in situations where aggression would normally be inhibited by fear. "Alcohol may facilitate the expression of aggression

when such expression is under the inhibitory control of fear" (Pihl, Peterson, Lau, 1993, p. 131). Taylor (in Gustafson, 1993) has shown that intoxicated subjects increase their aggressive response to threat more so than sober subjects. "Gamma-aminobutyric acid (GABA) is the main inhibitory neurotransmitter in the brain. The binding of certain drugs to the GABA receptor results in sedation and diminished anxiety" (Pihl & Peterson, 1993, p. 115) Alcohol and drugs such as Valium and barbiturates, reduce the protective control of anxiety, resulting in the exhibition of violent behavior by intoxicated individuals (Pihl & Peterson, 1993).

Collins and Messerschmidt (1993) observed that alcohol consumption can cause violent behavior because alcohol impairs the individual's ability to process and interpret information correctly. "Alcohol is known to impair drinkers' cognitive ability to modify their demeanor and verbal responses" (Collins & Messerschmidt, 1993, p. 95). As a result, the risk of miscommunication increases as the capacity for rational dialogue and compromise decreases. When the intoxicated individual is unable to correctly perceive the behaviors of others, the risk of violence becomes

prevalent. The cognitive effects of alcohol upon a specific individual are dependent upon dose amount, rate of consumption, time passed post-consumption, and the individual's genetic factors and drinking experience (Pihl & Peterson, 1993).

"Aggression would appear to be a function of the interaction of the pharmacological state induced by alcohol and the contextual or situational cues that impinge upon the intoxicated person" (Gantner & Taylor, 1992, p. 29). Many times situational variables exacerbate the aggressive inducing effects of alcohol. One such variable is provocation or perceived provocation. A common symptom of alcohol intoxication is suspiciousness and paranoia, as these feelings are heightened the subjective feelings of provocation are increased as well, resulting in an increase in aggression (Miller et al., 1991; Murdoch, Pihl & Ross, 1990).

REACTION TIME PARADIGM

Most experimental investigations of the effects of alcohol on aggressive and violent behavior have used variations of an approach known as the competitive

reaction time paradigm. Shuntich and Taylor were the first to investigate the effects of alcohol on aggression using the reaction time paradigm (Taylor, 1993). The reaction time paradigm allows researchers to observe, study, and compare intoxicated versus non-intoxicated subjects while competing in a series of reaction time trials. The subjects are isolated and the experimental group is administered a pre-selected amount of alcohol. Then subjects from both control and experimental groups are connected to a device that will administer shocks to the subject. Prior to each trial the subjects are instructed to select an intensity of electrical shock they wish to administer to their opponent. The opponent is in reality fictitious, however, the subject is informed that the opponent is stationed in a separate room.

The subject then competes with the fictitious opponent on a reaction time trial. The subject with a slower reaction time receives the shock that was set by the opponent. The subject with the faster reaction time does not receive a shock. The subjects are aware by means of feedback lights of the intensity of the shock set for them by their opponent. Subjects realize that either they or their opponent will receive a shock

depending on the outcome of the trial, and that each determines the intensity of shock the other will receive. The frequency of wins and losses and the amount of shock received by the subjects are programmed by the experimenter prior to the beginning of the test. The measure of aggression in this paradigm is the intensity and frequency of electrical shock subjects select for their opponent (Taylor & Chermack, 1993).

Results from these tests have repeatedly proven that intoxicated subjects set significantly higher shock intensities for their opponents then did those who consumed either a placebo or no alcoholic beverage (Taylor, 1993). Modifications of the test have also been conducted in which the subject was pressured by the experimenter to set higher shock levels, lower levels on the basis of norms, and varying amounts of alcohol. These results have shown that intoxicated individual's aggressive responses are influenced by provocation, social pressure, social norms, and amounts of alcohol consumed (Gustafson, 1993). Taylor and Gammon (Taylor, 1993) demonstrated that individuals who consumed a higher dose of alcohol (blood alcohol level of 0.10) set higher shock levels than those who consumed a lower dose (Blood alcohol level of 0.03).

In numerous studies, the intoxicated individuals set moderate shock levels on initial trials while their non-intoxicated counterparts set low levels (Taylor & Chermack, 1993).

These results have demonstrated that consumption of alcohol can instigate intense potentially harmful levels of aggression. Moreover, aggressivity levels increase proportionately with the quantity of alcohol consumed, and alcohol related aggression can be influenced, both positively and negatively, by social pressure (Taylor & Chermack, 1993).

Ethical considerations regarding the reaction time paradigm limit the extent to which this test may be used. As each individual's tolerance to alcohol varies, so does the amount required to induce violent or aggressive behaviors. Such levels may be physically dangerous to the subject (Collins & Messerschmidt, 1993). Drugs, such as cocaine and heroine, due to their illegality and propensity for addiction should not be used in the reaction time paradigm.

INDICATORS OF ALCOHOL RELATED AGGRESSION

Pihl, Peterson, and Lau (1993) identified the four characteristics that signals risk for alcohol related aggression. First the individual has exhibited a wide range of aggressive behaviors when sober. Generally, however, these exhibitions are inhibited by fear. Second, the individual is sensitive to the anxiolytic properties of alcohol. Third, the individual is sensitive to the psychomotor properties of alcohol, and is more pain free when intoxicated. Lastly, when intoxicated the individual experiences impaired ability to plan and regulate behavior.

"Antisocial personality and psychopathy have been found to be significantly correlated with substance abuse disorders" (Muntaner et al., 1990, p. 1). This combination increases the risk for criminal behavior. Crime statistics have suggested that alcohol use and abuse is directly linked to interpersonal violence (Swanson, 1993). In the general population there is a positive correlation between the quantity of alcohol consumed and both the intensity and frequency of acts of child and sexual abuse, domestic violence, and interpersonal crime such as assaults and homicides

(Kelly and Chereck, 1993). "It is also interesting to note that amounts of alcohol consumption, in general, are higher among individuals who engage in aggressive behavior than among matched groups of individuals who are less likely to engage in aggressive behaviors" (Kelly & Chereck, 1993, p. 40).

Murdoch, Pihl, and Ross (1990) concluded that 50% of all homicides and assaults are committed while the perpetrator is under the influence of alcohol. Taylor et al. (1976) discovered that 72% of persons arrested for felony offenses were intoxicated. Wright (1993) analyzed the 1979 Survey of Inmates of State Correctional Facilities and discovered that 40% of inmates guilty of property crimes and 35% of violent offenders could be classified as "very heavy drinkers" in the year prior to their incarceration. Approximately 50 percent had been drinking just prior to their current offense" (Wright, 1993, p. 157).

The 1975 and 1985 National Family Violence Surveys found that approximately one third of the nearly 2,000 couples surveyed had experienced a physical assault on the spouse in the course of the marriage. These figures, however, could be as high as two out of every three American couples having experienced domestic

violence during their marriage (Strauss, 1993). Research has concluded that frequency of drunkenness for husbands was associated with wife abuse. Coleman and Strauss (in Collins & Messerschmidt, 1993) found that rates of domestic violence was almost 15 times higher in households where husbands were described as often drunk as opposed to never drunk.

In 1990, Murdoch (in Pihl, Peterson, & Lau, 1993) studied 9,304 criminal cases drawn from 11 countries. The results determined 625 of the violent offenders to be intoxicated at the time of the offense, and 45% of the victims to be intoxicated when victimized. Murdoch et al. (1990) examined 588 Philadelphia homicides which occurred between 1948 and 1952 and discovered that both perpetrator and victim had been drinking in 44% of the cases. One half of all patients with violence related injuries reported drinking within six hours prior to the violent event, and 67% of these individuals reported having consumed the last drink less than one hour prior to the violence (Cherpitel, 1993).

SOLUTIONS

As research in the area of alcohol and drug related violence has grown and developed, so have potential solutions to this problem. One such solution that is growing in popularity is the legalization of drugs. Nadelmann (1989) argued that emphasis should be placed on prevention through treatment and education rather than prevention through criminal deterrence. Nadelmann noted that although drug use and abuse would increase, the quality of urban life would rise significantly. Homicide, robbery, and burglary rates would decline, organized crime groups would disband, law enforcement officers and courts could focus on crimes that "people cannot walk away from," and inner city residents would be forced to seek careers in the legitimate fields rather than the drug trade (Nadelmann, 1989). Boyum and Kleiman (1995) and Scott (1992) argued that changing attitudes, opinions and preferences through education is a more logical alternative. "Well educated persons seldom fight, or even engage in destructive verbal quarrels" (Scott, 1992, p. 15).

Wagoner and Piazza (1993) argued that group therapy is a viable alternative for individuals in the criminal justice system. Group therapy provides social interaction for individuals, teaches proper community norms and roles, thereby encouraging responsibility, and offers conformity through peer pressure (Wagoner & Piazza, 1993). This hypothesis is supported by Boyum and Kleiman (1995) who discovered that "those who are coerced into non-prison treatment by the criminal justice system fare as well as, if not better than those who enter such programs voluntarily" (p. 323). There is considerable evidence that substance abuse programs can reduce drug and criminal relapse among offenders. Peterson, Kearns, Murrin, Dolente, and May (1993) noted that involvement in the criminal justice system helps retain individuals in treatment while in the community, and that involvement in the TASC (Treatment Alternatives to Street Crimes) helps to extend the length of treatment.

The issue of addressing alcohol related aggression is more complex. Despite the fact that many psychological effects of alcohol are similar to those of illegal substances, such as benzodiazepine and barbiturates, alcohol is a legal substance and

therefore can be purchased by anyone who is of age. Individuals suffering from mental illness, sociopathic or psychopathic personalities, or aggressive behaviors have easy access to this mood altering chemical.

Research by economists and other public policy scientists have determined that making alcoholic beverages more expensive or less readily available can reduce the consequences of alcohol abuse, such as crime, accidental deaths and physical health problems (Cook, 1993). Approaches for assessing such changes can be illustrated by examining an event that occurred in Norway. In 1988, employees of Norway's state operated wine and spirits monopoly began a nine week long strike that temporarily stopped deliveries of this alcohol to retail outlets and licensed premises. Within four weeks sales of these types of alcohol had ceased. Although beer sales and in the home production of alcohol increased, a 20 to 30 percent decrease in alcohol consumption was observed over the period of the strike. During this time, as compared to the three weeks before and after the strike as well as the previous years statistics, incidents of domestic violence was reduced by 22% and interpersonal violence dropped by 15% (Cook, 1993). Cook (1993) has

determined that those states that have initiated an increase of beer taxes have witnessed a reduction in the amount of beer purchased. Cook (1993) theorizes that such taxes will reduce the incidents of violent crime.

Taylor (1993) wrote that alcohol related aggression can be controllable if aggression instigating cues in drinking settings can be off set by aggression inhibiting cues, if effective programs can be developed to treat individuals with aggressive personalities, and if people can be taught that they can and should control aggressive and violent behaviors when drinking.

From the existing literature and past research, the relationship between substance use and aggressive behaviors appears to be a significant one. Consumption of chemicals such as alcohol, cocaine, barbiturates, and benzodiazepines have been proven to increase the likelihood of aggressive behaviors.

CHAPTER III

METHODOLOGY

Subjects

The 40 individuals who served as subjects had been placed on probation for assault first degree, second degree, or third degree in St. Louis County. The sample was drawn from probationers residing in the Central Eastern section of St. Louis County, that being closest to the city of St. Louis. Individuals ranged in age from 19 to 32 at the time of the offense.

All records of individuals on probation for assault were reviewed, and the sample group was reduced based on Substance Abuse Questionnaire (SAQ) validity and availability of information regarding whether or not the individual was under the influence of a chemical (alcohol or drugs) at the time of the offense. Individuals convicted of assault associated with driving while intoxicated were not considered. Those cases where intoxicated versus not intoxicated could not be determined were eliminated. Subjects scoring above the 39th percentile for validity risk were also eliminated. Scores that fell below the 39th percentile for Validity indicated a valid score, while those above the 39th percentile indicated an invalid score

(Behavior Data Systems, 1992). Those tests that were scored above the 39th percentile indicated that the test taker may be answering some questions falsely and therefore the results were invalid. After this process of eliminating cases that were considered invalid, a sample size of 40 valid cases remained. Permission was obtained from the Missouri Department of Correction to conduct this research and names were kept anonymous.

Design

The two experimental variables, Under the Influence and Aggressivity, were arranged as column headings. Under each heading were two subheadings, Yes and No for Under the Influence, and High and Low for Aggressivity. Under the Influence refers to whether or not the individual was under the influence of a mind altering substance at the time the assault occurred. Aggressivity is a measure of risk for aggressive behavior as determined by the Substance Abuse Questionnaire (SAQ). The SAQ provides three ranges of risk with the medium risk range existing between 40 and 60. In order to allow for two ranges of low and high, scores between 0 and 50 were labeled low, scores between 51 and 100 were labeled high.

Materials

Information used in this research was obtained from SAQ test results and information provided by the offender during initial interviews conducted by that individual's probation officer. During this interview, conducted within seven days of sentencing, the question of intoxication at the time of the offense, by either alcohol or drugs, is addressed. This information is then placed in the individual's case file. At the same time the Substance Abuse Questionnaire (SAQ) is administered to each probationer either individually or in a group setting.

The Substance Abuse Questionnaire (SAQ) is a brief easily, administered, and automated (computer scored and interpreted) test specifically designed for adult probation and parole client risk assessment and screening. The SAQ, designed by Behavior Data Systems (1992) in Phoenix Arizona, is a 155 item test that is designed to assess offender behavior and risk for behaviors in five categories: alcohol abuse, drug abuse, aggressive behavior, resistance to authority, and stress coping skills. The SAQ, also, has a validity scale which measures how truthful the offender was while completing the test. This scale was designed

to identify self-protective, resistant, and guarded offenders who minimize or conceal information (Behavior Data Systems, 1992). The tests are computer scored on sight using computer programs provided by the manufacturer. Results are received almost immediately.

The Aggressivity Scale of the SAQ is a measure of the offenders risk taking behavior, acting out potential and aggressiveness. Individuals who score in the high risk range demonstrate a propensity to violent and aggressive behavior, have low frustration tolerance, and are physically and verbally intimidating and threatening (Behavior Data Systems, 1992). The computer generated assessment for this individual notes that stress and substance abuse would exacerbate such behaviors.

Procedure

This research involved analyzing existing data from case files of individuals convicted and placed on probation for assault. The 40 cases were compiled based upon the availability of information regarding substance use at the time of the offense and valid SAQ scores. For the first variable (X), whether the individual was under the influence at the time of the offense, the individual was assigned a 1 if under the

influence and a 0 if not under the influence. The second variable (Y), aggressivity was similarly scored. If the individual's SAQ test score for Aggressivity was located in the low range, 1 to 50, a score of 0 was assigned. If the score was located in the high range, from 51 to 100, a 1 was assigned.

After the data was compiled, arranged, and totaled, a Phi Coefficient correlation was computed. This test, similar to the Pearson Correlation Coefficient, allows determination of independence as well as the degree of the relationship.

CHAPTER IV

RESULTS

The information used in this research was taken from a sample of 40 individuals on probation for assault in St. Louis County. Measures of aggressivity, obtained from the Substance Abuse Questionnaire, were analyzed in conjunction with information regarding the presence of mind altering substances (alcohol or drugs) at the time the assault occurred.

Table 1 presents a Stem & Leaf display of the resulting Aggressivity scores, as well as measures of central tendency and variability of those scores.

Table 1 Stem & Leaf Display of Substance Abuse Questionnaire Scores, and Measures of Central Tendency and Variability

Frequency	Stem &	Leaf
1.0	0	9
3.0	1	0 6 6
6.0	2	0 2 2 7 7 7
8.0	3	3 3 3 3 7 9 9 9
7.0	4	5 5 5 5 5 5 5
1.0	5	3
5.0	6	1 7 9 9 9
2.0	7	2 9
4.0	8	0 0 1 1
3.0	9	5 5 7

Stem width: 10.0
Each leaf: 1 individual score

Mean:	48.625	Variance:	621.625
Median:	45	Standard Deviation:	24.932
Mode:	45		

Table 2 displays a summary of the data collected, as well as the results of the tabulations used in this research.

Table 2 Research Results: Phi Coefficient, t score

		Aggressivity Score: 0-50 Low=0	Aggressivity Score: 51-100 High=1	
Under the Influence	Yes=1	13	10	23
	No=0	12	5	17
		25	15	

N= 40.00	Cov XY= .035	t score= .875
Alpha= .05	Stan Dev X= .490	Phi Coef= .14
CV= 2.021	Stan Dev Y= .500	

The totals for columns X, X squared, Y, and Y squared were 15, 15, 23, and 23 respectively. The column total for XY in this sample was equal to 10. The computed Covariance of XY yielded a score of .035 with the standard deviation of X = .490 and Y = .500. The Phi Coefficient was calculated resulting in a score of .14 with degrees of freedom equal to 38. Phi squared resulted in a score of .02.

In order to test for independence, the level of significance was set at .05 with degrees of freedom equal to 38. Therefore, the critical value was 2.021. The resulting t score was equal to .875.

The null hypothesis being tested in this research was that there was no relationship between the exhibition of aggressive behavior and mind altering substances such as alcohol or drugs. The results of this study indicate acceptance of the null hypothesis. The test for independence confirmed this postulate due to resulting score of .875 being less than the critical value of 2.021.

In the range negative one to positive one, where negative one represents a strong negative correlation and positive one represents a strong positive correlation, the relationship between substance use and abuse and aggressive or violent behavior yielded a Phi Coefficient equal to .14. A score of zero indicates no relationship. The score obtained from this sample indicates independence between these two variables and that there is that there is some relationship, although small, between substance abuse and assault. The Phi squared score of .02 demonstrates that, in this sample, 2% of the exhibited variability in aggressive behavior,

the assault, can be accounted for by variability in the use of a mind altering substances. Ninety-eight percent of the variability in assessed aggressive behavior was not accounted for by variability in substance abuse.

CHAPTER V

DISCUSSION

The results of this study do not support previous research or the hypothesis that substance abuse and aggressive behaviors are related. Research in this area is problematic due to the fact that data gathering procedures are based on self-report. Collins and Messerschmidt (1993) noted that alcohol "can be (and perhaps is) both a predictor of violence and an after the fact excuse for violence" (p. 98). As a result individuals who are arrested and charged with a crime may be more likely to over emphasize the their substance abuse problem in order to deflect blame from themselves onto the chemical and thereby minimize their personal responsibility in the crime (Wright, 1993). Because the sample in this research was comprised of individuals on probation for assault, self-reported information regarding the individuals substance abuse and propensity for violent behavior may have been skewed in attempts to manipulate their supervision. The offender may have answered questions in a manner that would appear more "favorable" to individuals probation officer.

"It is very difficult to do research in this area because of the logistics involved--offenders do not generally present themselves at the researchers lab immediately after the crime for blood analysis and questioning" (Murdoch, 1990, p. 1077). This fact is particularly significant in the present study. Individuals charged and convicted of the assault in this research were interviewed and tested within seven days of being placed on probation. However, the time elapsed between the actual commission of the crime and the subsequent sentencing date could be weeks, or possibly months, in duration. Therefore, exact circumstances surrounding the crime may have been lost or forgotten during that time. The precise substance, as well as amount consumed, was unavailable for this research.

Limitations in the Substance Abuse Questionnaire could also have affected this research. The Substance Abuse Questionnaire measures five separate categories related to problem behaviors. Each category could be compromised by the fact that the instrument attempts to measure too many categories. Therefore, offenders may be confused by the variety of questions.

The crime of assault was selected for this study due to the interpersonal, explosive, and violent nature of this crime. However, variables including environmental and situational stressors were not taken into account in this study. These variables include employment status, relational status or stress, mental or physical health, and location of the crime, all of which may have influenced the commission of the assault. Hull (1981) suggested that variations in research results may be due to the large variability of locations in which alcohol and drug consumption, as well as violence, occurs. Taylor (1993) reasoned that the most direct way of studying and determining the effect of alcohol or drugs on violent and aggressive behavior is in the controlled environment of a laboratory.

Future research could be done in which the offender was given the SAQ, or other instrument measuring aggressivity, at the time of the arrest and at the time of sentencing. Interviews and urinalysis conducted at these times would determine the presence of alcohol or drugs in the system of the offender. The variance in the aggressivity scores could be measured to determine if aggression is correlated to substance

abuse. Location of the crime could also be a controlled variable. Night clubs, sporting events, and households are some of the many places a violent crime may be committed.

Future research could also be conducted to include offenders convicted of other violent crimes such as robbery, rape, or murder. Information regarding the existence of alcohol or drugs at the time of the offense could be obtained. This information could be compared to similar information from other St. Louis County probation offices, as well as offices located in Metropolitan St. Louis and surrounding rural offices.

Despite the fact that the results of this research did not support the hypothesis that aggressive behavior and the use of substances are related, past research has demonstrated that a relationship does exist. The fact that 57.5% of those individuals in this study were under the influence of a chemical at the time the assault occurred demonstrates that both aggressive behavior and substance use does coexist. Further research needs to be conducted in order to better understand this relationship. Once this is accomplished recommendations for treatment of this problem can be more thoroughly addressed.

APPENDIX

Substance Abuse Questionnaire and Answer Sheet

SAQ

Missouri
Substance Abuse Questionnaire

Instructions

It is **important that you answer each statement truthfully. Do not give false information**. Your records may be used to check the information you provide. Any dishonesty will likely be detected.

The statements in this questionnaire are numbered. Do not skip any statements. Alcohol or Drinking refers to beer, wine or other liquors. Drugs refers to prescription drugs as well as marijuana (pot), cocaine (coke), downers, crack, heroin, etc.

If you do not believe you have a substance abuse problem you should respond **false** to statements that imply you have a problem.

Complete the information at the top of your answer sheet. Then, starting with statement one, answer every statement.

Do not make any marks on this booklet.

Section 1

If a statement is True put an "X" under **T** for **True** on your answer sheet. If a statement is False, put an "X" under **F** for **False**.

1. I do not always tell the whole truth when asked about my personal life.
2. In the last year, drinking has been a problem for me.
3. I lose my temper quickly.
4. I have used drugs (marijuana, cocaine, crack, LSD, or heroin) more than I should.
5. I do not really see the need for these questions or the "help" people are giving me.
6. There are times when I am unhappy.
7. Drinking has threatened my happiness or success in life.
8. People tell me I am overly aggressive.
9. I have a drug problem.
10. I can handle my own problems and do not want or need help.
11. There have been times at work (or school) when I have not paid proper attention to what I was doing.
12. My drinking is more than just a little or minor problem.
13. I have a quick temper and need to learn how to control it.
14. My use of drugs has interfered with my happiness and success in life.
15. I wish people would leave me alone and let me deal with my own problems.
16. At times I worry about what others think or say about me.
17. I am concerned about my drinking.
18. People tell me I get angry too quickly.
19. I often minimize my use of drugs. I say I use less than I do, or hide the fact that I use drugs at all.
20. I really do not want help or advice from the staff.
21. I wish I could forget some of the things I have said or done.
22. Within the last year, I have had two or more memory losses (blackouts) after drinking or using drugs.
23. I am often too aggressive and outspoken.
24. I smoke pot (marijuana) or use coke (cocaine) at least once a month.
25. To be honest, I have problems I can not solve alone.
26. I have done things when angry or mad that I later regretted.
27. I need help to overcome my drinking problem.
28. Two or more of the following apply to me (answer True or False on your answer sheet).
    a. Daring or fearless
    b. Outspoken or disruptive
    c. Hostile or aggressive
    d. Impulsive or quick-tempered

Continued on next page

. Smoking marijuana or using cocaine helps me settle down and feel good.

. My problems are my own business. I wish others would stop invading my privacy.

1. There have been times when I have been jealous of other people's success or happiness.

2. Once I begin drinking or using drugs, it often seems like I cannot stop.

3. I get into a lot of arguments and fights.

4. I need help with my life.

5. There are times when I am really down, depressed, or discouraged.

6. I do not have a drinking problem.

7. Other people say I am a calm and quiet person.

8. I have gone to someone for help about my drug use.

9. I want help to straighten out my life.

0. It bothers me when I am overlooked or ignored by people I know.

1. I have drunk alcohol to avoid or escape from worries or problems.

2. I am often loud and disruptive.

3. Within the last year, my family has been worried about my drinking.

4. To be honest, I use illegal drugs.

5. I know I have problems, but I want to deal with them myself.

6. I have not always gotten along well with people at work (or school).

7. I have missed work because of my drinking.

8. I show my frustration or anger quickly.

9. Many of my friends use drugs to handle the stress or boredom in their lives.

0. I am tired of hearing everybody's advice about my life and problems.

1. There have been times when I have been concerned about others' approval of me.

2. Within the last year, there have been times I have enjoyed drinking alone.

3. I know I am too aggressive.

4. When I drink or use drugs, my personality changes and I seem like a different person.

5. My life is my own business and I wish others would stop bothering me about it.

6. There have been times when I have had a job but did not want to go to work.

7. I have been told I have a drinking problem.

8. I am easily annoyed or angered.

9. I have been in treatment or counseling for my drug use.

0. I want help with some of my problems.

1. There are times when I really worry about myself and my happiness.

2. I minimize my drinking. I often say I drink less than I do, or hide the fact that I drink at all.

3. I have a lot of problems getting along with other people.

4. I do not have a drug problem.

5. I do not like talking about my personal life or problems with others, even when they are trying to help.

6. I get upset when others criticize me.

7. I have asked for help to reduce or stop my drinking.

8. I have a short temper and get angry quickly.

9. There have been times when I have felt guilty about using drugs.

0. I want help and advice about how to deal with my problems.

1. There are times I worry about my success and happiness.

2. My drinking is a serious problem.

3. I am often impulsive and irresponsible.

74. I have tried to cut down or stop using drugs two or more times.

75. I do not think I have any problems I cannot handle myself.

76. I have been embarrassed or worried about mistakes I have made.

77. I have been in treatment or counseling for my drinking.

78. When frustrated or annoyed, I tend to "fly off the handle" and lash out at others.

79. Within the last five years, I have had to drink more or use more drugs to get the same affect.

80. To be honest, I do not have any problems I want to discuss with the staff.

81. There have been times when I have strongly disliked someone.

82. I often say or do things without thinking.

83. I would rather not discuss some of the things I have done.

84. I want help and assistance from the staff.

85. There are times when I get really discouraged.

86. My substance (alcohol or other drugs) use or abuse has impaired or hurt my work and occupational functioning.

87. When angry, I shout or swear a lot.

88. I cannot say it more clearly. I do not want anybody's help.

89. I am restless, loud and can be disruptive.

90. I am dependent on drugs and may be addicted to them.

91. There have been times when I have been jealous or resentful of others.

92. I am not an aggressive person.

93. Two or more of the following apply to me (answer True or False on your answer sheet).
    a. Cold and indifferent
    b. Evasive or secretive
    c. Lying and manipulative
    d. Defiant or resistant

94. I have a drinking problem.

95. People tell me I have a quick temper and a bad attitude.

96. When offered advice about my life, I usually refuse to listen.

97. When I think about some of the mistakes I have made, I get discouraged or upset.

98. I am in a chemical dependency treatment program for drug problems.

99. Sometimes I get very angry or upset with myself.

Section 2

The next series of statements consists of items which you should rate to describe yourself. Put an "X" under the number (1,2,3, or 4) on your answer sheet that describes you best. For example:

1. Rare or Never
2. Sometimes
3. Often
4. Very Often

100. Exercise/Physical Activity
101. Self Control/Composed
102. Headaches/Migraines
103. Positive Attitude/Outlook
104. Dissatisfied With Life
105. Good Sense of Humor/Laugh
106. Anxious/Worried
107. Depressed/Discouraged

108. Alcohol/Drugs
109. Manage Time Effectively
110. Insomnia/Trouble Sleeping
111. Satisfied With Self/Like Self
112. Inadequacy/Inferiority Feelings
113. Bored/Restless
114. Financially Stable/Responsible
115. Enthusiastic/Involved In Life

116. Tension/Stress
117. Fatigued/Tired
118. Directly Deal With Problems
119. Emotionally Upset/Crying
120. Share My Thoughts Comfortably
121. Angry/Hostile With Others
122. Lonely/Unhappy
123. Able to Handle Life's Problems

124. Nervous/Unable to Relax
125. Patient/Tolerant/Understanding
126. Indecisive/Can't Make Decisions
127. Work/Job Satisfaction
128. Admit My Errors/Mistakes
129. Sweating/Racing Heart
130. Accept Constructive Suggestions

Continued on next page

131. Trust My Own Judgment
132. Express Feelings Comfortably
133. Stomach Problems/Acidity
134. Difficulty with Others/Friction
135. Adaptable/Adjustable
136. Marital/Family Problems
137. Self-Reliant/Independent
138. Job or Work Problems/Concerns
139. Satisfied/Contented with life

Section 3

Answer these statements to describe yourself. Put an "X" under the number (1, 2, 3 or 4) on your answer sheet that is most accurate for you.

140. How would you describe your drinking?
    1. A serious problem
    2. A moderate problem
    3. A slight problem
    4. Not a problem

141. How would you describe your drug use?
    1. A serious problem
    2. A moderate problem
    3. A slight problem
    4. Not a problem

142. During the last six months, I have been:
    1. Dangerous to myself (suicidal)
    2. Dangerous to others (homicidal)
    3. Both 1 and 2
    4. None of the above

143. During the last six months, I have had:
    1. Serious emotional problems
    2. Mental health problems
    3. Both 1 and 2
    4. None of the above

144. How long has it been since you were a member of a gang?
    1. One to two years
    2. Three years or longer
    3. Never been a gang member
    4. I am a member of a gang

145. How many treatment programs for alcohol problems have you been in?
    1. One
    2. Two or three
    3. Four or more
    4. None

146. How many treatment programs for drug problems have you been in?
    1. One
    2. Two or three
    3. Four or more
    4. None

147. How long has it been since you were in treatment or counseling for a drinking problem?
    1. Five years or longer
    2. One to four years
    3. Less than one year
    4. Never had treatment for a drinking problem

148. How long has it been since you were in treatment or counseling for a drug problem?
    1. Five years or longer
    2. One to four years
    3. Less than one year
    4. Never had treatment for a drug problem

149. The word "Recovering" means having a substance (alcohol or other drugs) abuse problem, but not drinking or using drugs. I am a recovering:
    1. Alcoholic
    2. Drug Abuser
    3. Both 1 and 2
    4. None of the above

150. How would you describe your desire to get alcohol treatment?
    1. Highly motivated (I want help)
    2. Moderately motivated (I may need help)
    3. Slightly motivated (maybe, not sure)
    4. Not motivated (no need)

151. How would you describe your desire to get drug treatment?
    1. Highly motivated (I want help)
    2. Moderately motivated (I may need help)
    3. Slightly motivated (maybe, not sure)
    4. Not motivated (no need)

152. Select the statement that accurately describes your physical and medical condition or general health.
    1. Excellent. No physical or medical problems
    2. Good. A few minor medical problems
    3. Fair. Some physical or medical problems
    4. Poor. Have serious physical or medical problems. Very concerned about my health

153. Because of my drinking or drug use, I have gone (or am going) to:
    1. Alcoholics Anonymous or Rational Recovery
    2. Narcotics or Cocaine Anonymous
    3. Both 1 and 2
    4. None of the above

Turn in your booklet and answer sheet.

Behavior Data Systems, Ltd.
P.O. Box 32938, Phoenix, Arizona 85064-2938

MISSOURI SAQ ANSWER SHEET

TODAY'S DATE: _____ _____ _____
month day year

COMPLETE ALL INFORMATION AND ANSWER ALL STATEMENTS ON YOUR ANSWER SHEET. PLEASE PRINT.

NAME: _____ _____ _____ SOCIAL SECURITY NUMBER: ___ ___ ___ - ___ ___ - ___ ___ ___ ___
last first initial

AGE: _____ SEX: _____ DATE OF BIRTH: ____ / ____ / ____ MARITAL STATUS: _____
month day year single/married/divorced/separated/widowed

RACE: _____ HISPANIC: Yes_____ No_____ EDUCATION (HIGHEST GRADE/GED): _____

EMPLOYED: Yes_____ No_____ # OF ALCOHOL-RELATED ARRESTS: _____ # OF DRUG-RELATED ARRESTS: _____

TO BE COMPLETED BY STAFF MEMBER ONLY

Offender Number: _____

County of Arrest:	_____	Current Supervision Strategy:	_____	# of Prior Inpatient Referrals:	_____
Test Site District/Institution:	_____	# of Prior Prison Sentences:	_____	# of Prior Outpatient Referrals:	_____
Staff Position Code:	_____	# of Prior Non-Prison Sentences:	_____	# of Alcohol-related arrests:	_____
				# of Drug-related arrests:	_____

Section 1

If a statement is **True** put an "X" under T for True.
If a statement is **False** put an "X" under F for False.

	T	F		T	F		T	F
1	___	___	34.	___	___	67.	___	___
2	___	___	35.	___	___	68.	___	___
3.	___	___	36.	___	___	69.	___	___
4.	___	___	37.	___	___	70.	___	___
5.	___	___	38.	___	___	71.	___	___
6.	___	___	39.	___	___	72.	___	___
7.	___	___	40.	___	___	73.	___	___
8.	___	___	41.	___	___	74.	___	___
9.	___	___	42.	___	___	75.	___	___
10.	___	___	43.	___	___	76.	___	___
11.	___	___	44.	___	___	77.	___	___
12.	___	___	45.	___	___	78.	___	___
13.	___	___	46.	___	___	79.	___	___
14.	___	___	47.	___	___	80.	___	___
15.	___	___	48.	___	___	81.	___	___
16.	___	___	49.	___	___	82.	___	___
17.	___	___	50.	___	___	83.	___	___
18.	___	___	51.	___	___	84.	___	___
19.	___	___	52.	___	___	85.	___	___
20.	___	___	53.	___	___	86.	___	___
21.	___	___	54.	___	___	87.	___	___
22.	___	___	55.	___	___	88.	___	___
23.	___	___	56.	___	___	89.	___	___
24.	___	___	57.	___	___	90.	___	___
25.	___	___	58.	___	___	91.	___	___
26.	___	___	59.	___	___	92.	___	___
27.	___	___	60.	___	___	93.	___	___
28.	___	___	61.	___	___	94.	___	___
29.	___	___	62.	___	___	95.	___	___
30.	___	___	63.	___	___	96.	___	___
31.	___	___	64.	___	___	97.	___	___
32.	___	___	65.	___	___	98.	___	___
33.	___	___	66.	___	___	99.	___	___

Section 2

Put an "X" under the number (1, 2, 3 or 4) that describes you best.

	Rare or Never 1	Sometimes 2	Often 3	Very Often 4		Rare or Never 1	Sometimes 2	Often 3	Very Often 4
100.	___	___	___	___	120.	___	___	___	___
101.	___	___	___	___	121.	___	___	___	___
102.	___	___	___	___	122.	___	___	___	___
103.	___	___	___	___	123.	___	___	___	___
104.	___	___	___	___	124.	___	___	___	___
105.	___	___	___	___	125.	___	___	___	___
106.	___	___	___	___	126.	___	___	___	___
107.	___	___	___	___	127.	___	___	___	___
108.	___	___	___	___	128.	___	___	___	___
109.	___	___	___	___	129.	___	___	___	___
110.	___	___	___	___	130.	___	___	___	___
111.	___	___	___	___	131.	___	___	___	___
112.	___	___	___	___	132.	___	___	___	___
113.	___	___	___	___	133.	___	___	___	___
114.	___	___	___	___	134.	___	___	___	___
115.	___	___	___	___	135.	___	___	___	___
116.	___	___	___	___	136.	___	___	___	___
117.	___	___	___	___	137.	___	___	___	___
118.	___	___	___	___	138.	___	___	___	___
119.	___	___	___	___	139.	___	___	___	___

Section 3

Put an "X" under the number (1, 2, 3 or 4) that is most accurate for you.

	1	2	3	4		1	2	3	4
140.	___	___	___	___	147.	___	___	___	___
141.	___	___	___	___	148.	___	___	___	___
142.	___	___	___	___	149.	___	___	___	___
143.	___	___	___	___	150.	___	___	___	___
144.	___	___	___	___	151.	___	___	___	___
145.	___	___	___	___	152.	___	___	___	___
146.	___	___	___	___	153.	___	___	___	___

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