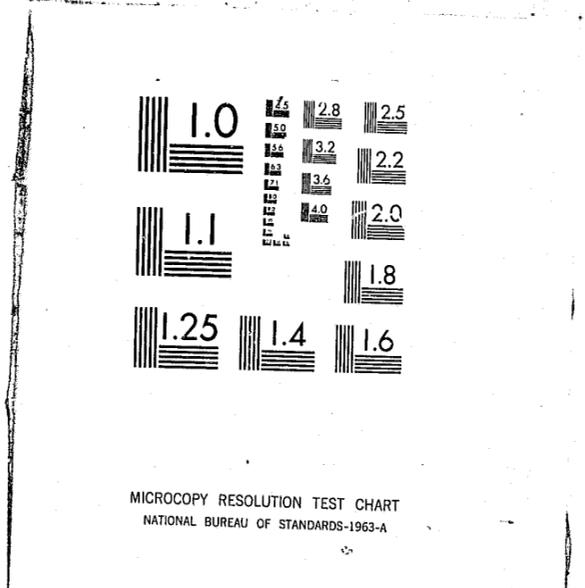


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Alcohol Use and Criminal Behavior

An Executive Summary

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Acting Director

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Alcohol Use and Criminal Behavior

An Executive Summary

James J. Collins

November 1981

U.S. Department of Justice
National Institute of Justice

National Institute of Justice
James L. Underwood
Acting Director

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CONTENTS

| | |
|---|----|
| Acknowledgments. | v |
| I. Introduction. | 1 |
| II. Explanation and the Alcohol/Crime Relationship. | 5 |
| III. Methodological Issues. | 25 |
| IV. Future Research Recommendations. | 31 |
| Bibliography. | 33 |

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The project also had the benefit of an advisory board which made an important contribution to our work. Advisory Board members were:

Samuel Guze, M.D.; Washington University
Frederick Harper, Ph.D.; Howard University
Richard Jessor, Ph.D.; University of Colorado
Robin Room, Ph.D.; University of California, Berkeley
Suzanne Steinmetz, Ph.D.; University of Delaware
Marvin E. Wolfgang, Ph.D.; University of Pennsylvania

I. INTRODUCTION

A. Background

This monograph deals with the relationship between the consumption of beverage alcohol and serious criminal behavior. The monograph summarizes the results of a project to develop an agenda for future research to improve understanding of the alcohol/crime relationship. The project was undertaken to assist the Center for the Study of Crime Correlates and Criminal Behavior of the National Institute of Justice (NIJ) in their program to develop new and better multidisciplinary knowledge about the alcohol/crime relationship. The project final report provides a detailed future research agenda toward that end (Collins, Guess, Williams and Hamilton, 1980). The research agenda, developed by the Research Triangle Institute (RTI), has resulted from a comprehensive and detailed analysis of past work in the alcohol/crime area and from consultation with a number of experts.

This monograph will first describe some of the empirical evidence for an alcohol/crime relationship. The summary will not be detailed or exhaustive. Recent efforts have provided a detailed examination of the empirical evidence (Pernanen, 1976; Roizen and Schneberk, 1978; Collins, forthcoming). The Collins citation refers to an edited volume which includes seven papers dealing with various aspects of the alcohol/crime relationship. These papers were written in support of the research agenda referred to above.

After a short overview of the empirical support for an association between alcohol use and crime, there will be a review of the theoretical aspects of the association. The consistency and strength of the alcohol/crime empirical association is sufficient to justify the inference that alcohol is sometimes causally implicated in the occurrence of serious crime. Questions of how alcohol exerts its criminogenic influence have not been satisfactorily answered. Explanatory aspects of the alcohol/crime relationship are discussed in sections II of this monograph.

Research on the alcohol/crime relationship involves complex methodological problems. Much past alcohol/crime research has fallen far short of an acceptable level of methodological rigor. In section III of this monograph methodological aspects of alcohol/crime research are discussed. In section IV there is a brief discussion of future research needs. These recommendations are both methodological and substantive.

B. Definitions and Parameters

Reference to an "alcohol/crime relationship" as used here means: the relationship between consumption of beverage alcohol and the occurrence of serious criminal behavior. Alcohol consumption is viewed as an independent variable and crime as the dependent variable even though the reverse causal order is a possibility. For example, it is possible that involvement in a criminal career would provide some impetus toward problem drinking. The emphasis on serious criminal behavior in the definition is meant to direct attention to serious personal and property crimes like homicide, assault, burglary and larceny. The definition excludes less serious offenses like disorderly conduct and gambling; the definition also excludes alcohol defined offenses like illegal sale of alcohol, public drunkenness and driving while intoxicated. The issue being considered is: to what extent and in what way does alcohol consumption, directly, indirectly or in combination with other factors, increase the likelihood of serious personal and property crime.

As consideration of the alcohol/crime relationship developed during the project, the focus on "serious personal and property crime" was further narrowed to an emphasis on assaultive crime. The emphasis on assaultive (personal) crime does not imply a judgement that alcohol is irrelevant to property offenses. As will be seen in the next section there is evidence that alcohol use is sometimes associated with property offenses. The emphasis on assaultive crime resulted from: (1) stronger evidence for an alcohol/assaultive crime relationship than for an alcohol/property crime relationship; (2) the likelihood that explanations of alcohol's causal relevance will differ for assaultive and property offenses. Point number two implies the need for interpretations and research designs developed specifically for investigating either personal or property offense classes; these offense classes involve very different kinds of behavior. Assaultive crime will tend to be expressive behavior; property crime will typically involve instrumental behavior.

C. A Summary of the Empirical Evidence

The alcohol/crime literature tends to focus either on the offense event or on the incarcerated offender. The event based literature, usually based on the use of police records, finds that alcohol is present in substantial percentages of the personal injury offenses of homicide, forcible rape, and aggravated assault.

The results of Wolfgang's (1958) research on 588 cases of homicide in Philadelphia for the years 1948-52 are typical. Using police descriptions of the homicides, Wolfgang found that alcohol was present in either victim, offender or both in 64 percent of the cases. In a similar study for homicides in Chicago, Voss and Hepburn (1968) found alcohol was present in 53 percent of 370 cases. Amir (1967) found that alcohol was present in either offender, victim or both in 34 percent of the 646 cases of rape he analyzed from Philadelphia for the years 1958-1960. In a study of rapes in Winnipeg between 1966 and 1975, Johnson, Gibson and Linden (1978) found either offender, victim or both were drinking in 72 percent of cases. Rada (1975) collected data from 77 convicted rapists and found 50 percent were drinking at the time of the offense. Mayfield (1976) interviewed 307 male inmates convicted of "assaultive" crimes and found 58 percent were drinking at the time of the crime. In a study of assaults committed against police, Meyer et al. (1978) report that 64 percent of the assailants were drinking or drunk. In a survey of California inmates Peterson and Braiker (1980: 19) found 24 percent reported they "got drunk and hurt someone" in the three years prior to their current incarceration. Pernanen (1979a), in interviews of a general population of adults from a community in Canada, found that in 52 percent of reported violent incidents someone was drinking. In a study of violent crime in Sweden, 68 percent of the offenders were found to have been drunk when committing their crime (Roslund and Larson, 1979).

Much less attention has been paid to the role of drinking in the offense of robbery and other acquisitive property offenses like burglary and larceny, although there is evidence that alcohol may be an important factor in some property crime. Data from a survey of more than 10,000 inmates in state correctional institutions, conducted by the U.S. Bureau of the Census (BOC) for the National Criminal Justice Information and Statistics Service (NCJISS) show substantial percentages of individuals serving sentences for property offenses report they were drinking at the time of the offenses.* The percentages of inmates who report they were drinking at the time of the offenses for which they are currently incarcerated are as follows for selected property offenses: robbery 39 percent, burglary 47 percent, larceny 38

* Data analyzing the drinking aspects of this survey have not been published. Descriptive data have been published through the National Criminal Justice Information and Statistics Service (1979). NCJISS is now the Bureau of Justice Statistics (BJS).

percent, motor vehicle theft 46 percent, forgery 38 percent and arson 67 percent (Roizen and Schneberk, 1978: 370). In another study of 310 imprisoned male felons, property offenders frequently reported drinking at the time of their commitment offense and a disproportionate percentage of those incarcerated property offenders were classified as heavy drinkers. Drinking at the time of their offense is reported by 35 percent of those incarcerated for property offenses; 55 percent of these offenders are heavy drinkers - this latter percentage is about double the national average for heavy drinking (Institute for Scientific Analysis, 1978: 13, 56). The two inmate surveys referred to in this paragraph also confirm that alcohol and alcohol problems are frequently associated with personal injury offenses. Thus, there is no inconsistency between the inmate survey findings and those discussed above; these inmate surveys are notable because they address the alcohol/property crime issue and suggest alcohol is a relevant factor.

In general, the research referred to above focuses on alcohol's role in behavior explicitly defined as criminal. There is also a body of research that focuses on alcohol's relationship to aggression. Typically, this research is of the experimental or quasi-experimental variety and examines the behavior of humans or animals in experimental conditions. Findings from this research are not conclusive but tend to show that, at least at some dosage levels, the ingestion of alcohol is associated with higher levels of aggression. There are disparate findings and some results indicate it is not alcohol consumption per se but type of beverage alcohol consumed or expectations about alcohol's effects that explain increased levels of aggression after drinking. Pernanen (1976, forthcoming) and Blum (forthcoming) have reviewed this research and it will not be reviewed here.

Other research in the alcohol studies area is relevant to the alcohol/crime relationship. For example, examination of the relationship between problem drinking and personality characteristics may also be pertinent to the alcohol/crime relationship. Ultimately, findings from these separate literatures ought to be integrated with the literature that deals explicitly with alcohol use and criminal behavior. We do not attempt that integration here.

II. EXPLANATION AND THE ALCOHOL/CRIME RELATIONSHIP

A. Asking and Answering the "How" Question

Asking the question: How does alcohol use cause crime? amounts to an attempt at theoretical understanding. A major weakness of most past research on the alcohol/crime relationship has been its largely atheoretical nature or its failure to be explicit about underlying theoretical positions and assumptions. The relative absence of theory in research on the relationship of drinking and crime is partly a function of disciplinary boundaries and specialization. Understanding the behavioral effects of alcohol consumption involves the need to consider physiological, psychological and sociological factors. Within each of these three substantive orientations, a variety of factors are relevant to the alcohol/crime relationship. In the physiological sphere factors like the pharmacological effects of different dosage levels, the relationship of hormonal levels to dosage level effects, and the influence of genetic makeup on the effects of alcohol are examples of questions of interest to alcohol/crime research. The relevance of stress, dependency, and personal power needs are a few of the variables related to alcohol use and crime that have been considered from the psychological point of view. In the sociological sphere diverse factors such as subcultural or reference group drinking norms, drinking context influences, and the nature of the relationships between drinking event participants have been examined for their power to explain the alcohol/crime relationship. Complexity exists within and across disciplinary boundaries. Theoretical development has been inhibited by the scope of the explanatory problem and by the difficulties of interdisciplinary cooperation.

1. An Analytic Model

Figure 1 illustrates the substantive approaches and the levels of aggregation that may be appropriate foci for analyzing the relationship between alcohol use and crime. The substantive approaches are arranged along a continuum signifying the level of aggregation at which each of the disciplinary orientations typically focuses. The substantive-aggregative foci suggested in figure 1 are not mutually exclusive. Any given research may involve the use of multiple perspectives and collection and analysis of data at more than one level of aggregation. For example, research whose major perspective is sociocultural might include psychological variables; the

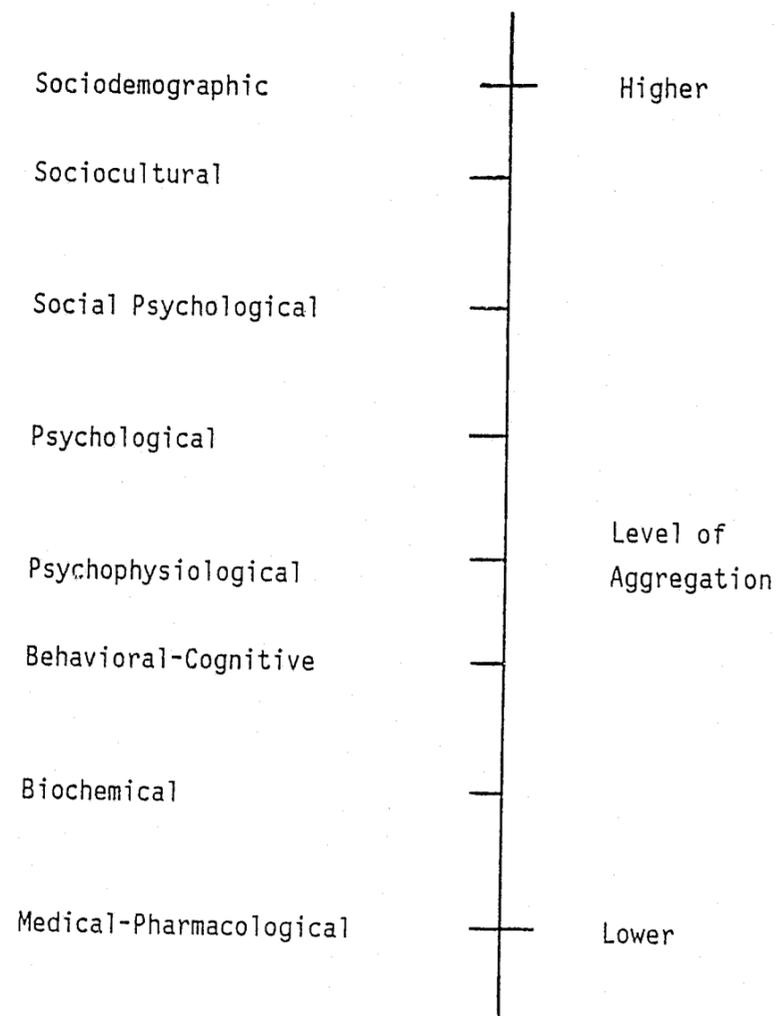


Figure 1
Substantive-Aggregative Foci for Analyzing
the Alcohol/Crime Relationship

influence of cultural attitudes on drinking behavior and violence might also attempt to understand how individual psychological makeup interacts with the cultural influence.

It is our judgment that the alcohol/crime relationship is best understood by complex theoretical models from a multidisciplinary perspective even though there is some evidence that suggests such complexity is not always appropriate. The ingestion of alcohol occasionally appears to be a simple, direct cause of violence. The term "pathological intoxication" describes such a reaction; this term has been used to refer to the occurrence of explosive outbursts of violence after and as a result of drinking (Bach-y-Rita, Lion and Ervin, 1970; Mark and Ervin, 1970: 126; Skelton, 1970). However, in spite of the appearance that alcohol's role in violence may sometimes seem to be manifested in a simple, direct manner, the limited available research suggests that factors other than alcohol are also important. Temporal lobe abnormality measured by the electroencephalogram (EEG) and personality traits are two factors that appear to be related to alcohol-induced explosive violence as described by the pathological intoxication syndrome. Thus even in the case of pathological intoxication, the need for complex explanatory models of the alcohol/crime relationship is confirmed.

Even though we argue that multidisciplinary theoretical explanations are required to answer the "how" question, we recognize that such comprehensive understanding is difficult to develop. It is unusual to find individuals capable of integrative conceptualization across multiple substantive perspectives. Furthermore, the substantively based structure of the scientific enterprise itself reinforces the tendency to focus attention on narrow substantive ranges. The range of our substantive focus here will also be limited. The focus will be on social and psychological explanation, i.e., on the substantive-aggregative foci in the upper half of the figure 1 diagram.

2. Multidisciplinary Theories

There are attempts to systematically organize explanations across the entire range suggested by the figure 1 diagram. Prescott (1980) summarizes a theory of drug and alcohol use that includes cultural, psychological and biological factors. The somatosensory affectual deprivation (SAD) theory developed by Prescott is founded on a variety of evidence. According to this theory "...the neurobiology of our behavior is not only inseparable from, but is in fact largely shaped by, culture" (Prescott, 1980: 286). The shaping of

behavior takes place as a result of the sensory and perceptual capacities and characteristics that result from early experiences which are structured by the social, physical and cultural environment. A need for "neural activation" in humans which is not satisfied by sensory stimulation may be met by the pharmacological stimulation produced by drugs and alcohol.

Prescott claims support for his theory in a variety of findings. One set of findings with relevance for our purposes is the evidence cited from an analysis of violence in 49 primitive cultures. High and low physical violence was successfully predicted in the 49 cultures on the basis of the degree of physical affection toward infants by mothers or caretakers. Prescott claims that deprivation of nurturance and affection causes the occurrence of compensatory behavior to reduce psychological tension. Two of these compensating behaviors are violence toward self and others and alcoholism and drug abuse.

The level of generality of Prescott's theory, and others of a similar range make it heuristically inappropriate to our goal of developing a research agenda in the alcohol/crime area. Theories of the "middle range" are most useful for the guidance of empirical research. Such theories involve abstractions but they are close enough to observed data to allow the derivation of propositions for empirical testing (Merton, 1968: 39).

The emphasis on social and psychological explanations in this report does not mean that other orientations do not have explanatory power. Physiological, biological, and pharmacological perspectives have important contributions to make toward understanding how drinking contributes to the occurrence of criminal behavior. Pernanen (1976, forthcoming) discusses a number of ways that alcohol may contribute to assaultive behavior through physiological processes. He reviews literatures that suggest alcohol consumption, especially if it continues over a period of many hours or days, may interfere with REM sleep patterns or may contribute to nutritional deficiencies. There is evidence that REM sleep deprivation and the nutritional problem of hypoglycemia may be related to assaultive behavior.

There is also a variety of evidence indicating there are systematic differences in the physiological effects of alcohol on the basis of age, gender and race or ethnicity. Although such systematic differences do not necessarily imply physiologically based explanation are appropriate, there is some evidence that such explanations are valid. Fenna, Mix, Schaefer and Gilbert (1976) found that native Indians and eskimos metabolize ethanol at

lower rates than do whites. The authors speculate that physiological changes which have occurred over a long period as a result of dietary habits explain the differences. Goodwin (1980) interprets the systematic differences in the human response to alcohol as arising from the interaction of genetic and experiential factors. As we will suggest below age, gender and race/ethnicity may be variables whose explanatory power comes mainly from their sociocultural roots rather than from their physiological foundations. However, our position in this regard is a judgement; alcohol use may sometimes be causally related to criminal behavior directly through physiological or genetic influences.

The perspectives listed at the lower end of figure 1 are not given emphasis in the research agenda of this report because they do not, in a wholistic sense, have a capacity to explain the alcohol/crime relationship. Crime itself is a complex social phenomenon; its definition, both formally and in practice, is a product of the social process. The scientific understanding of the alcohol/crime relationship needs to incorporate social complexity. The search for understanding of the alcohol/crime relationship that is emphasized here embodies a search for explanatory power in the social, cultural and psychological areas.

3. Theoretical Models

In two reviews of the theoretical aspects of the relationship between alcohol use and violence, Pernanen (1976, forthcoming) proposes a number of explanatory models that may be appropriate for understanding the empirical correlations found between alcohol consumption and crimes of violence. The association of alcohol and violence may be a result of the direct effects of alcohol. The association may be explained by a common cause relationship, i.e., both alcohol consumption or alcoholism and violence may be caused by the same factor or factors. Prescott's (1980) interpretation of violence in 49 primitive cultures referred to earlier in this monograph is an example of a common cause explanation. Under his SAD theory both alcoholism and violence are caused by early affectional deprivation. The alcohol/violence relationship may be explained by interactive, conditional or conjunctive explanatory models. In such explanations violence results from the consumption of alcohol in some situations, circumstances or conditions. The condition of alcoholism in an individual, the nature of an individual's socialization experience or drinking context characteristics are examples of factors that might be included in interactive, conditional, or conjunctive explanatory

models. A fourth explanatory model proposed by Pernanen is called the spuriousness model. In this model, the association of alcohol and violence is simply associational in the statistical sense, not causal; an example would be the presence of a disproportionate number of alcoholics in prison populations, not because alcoholics commit more crimes, but because they are more likely to be arrested and incarcerated when they do commit crimes.

B. Sociodemographics

The sociodemographic level of analyses for the alcohol/crime relationship attempts to describe and account for systematic variation that occurs on the basis of characteristics that are fundamental bases for human organization. Three of these fundamental organizing (sociodemographic) variables are age, gender and race/ethnicity. The sociodemographic descriptors themselves are not explanatory independent variables. Theoretical explanation must rely on variables that characterize underlying aspects of the sociodemographics. Age for example does not have explanatory power by itself; it is other factors, like the human developmental process or age-graded aspects of social norms, that may have the power to explain the alcohol/crime relationship theoretically. For this reason sociodemographic understanding of the alcohol/crime relationship must be supported by substantively based theoretical conceptions, although observed sociodemographic regularities are useful for directing attention to covariation in need of explanation. Thus the discussion of sociodemographic aspects of the alcohol/crime relationship which follows will be supported by explanation based on social and psychological variables.

1. Age, Alcohol and Crime

Alcohol consumption and problem drinking patterns as well as official crime rates differ on the basis of age, gender and race/ethnicity. Young adult males in the 18-25 or 18-30 age span are especially notable in this regard. In survey data, young adult males have been found to have disproportionately high heavy and problem drinking rates (Blane and Hewitt, 1977; Cahalan and Cisin, 1976; Cahalan and Room, 1974; Mandell and Ginzburg, 1976). It is also clear from official U.S. crime data that young adult males are responsible for a large disproportion of serious crime (Federal Bureau of Investigation, 1978, 1979). A more extensive review of the literature on the relationship between age, drinking and crime is found in Collins (forthcoming).

Very little research has focused on the combined three factor relationship of age, alcohol use and criminal behavior. Pittman and Gordon (1958)

examined the criminal career patterns of 186 offenders incarcerated for public intoxication. They found a "biphasic" pattern; serious offenses tended to occur during the younger years; offenses occurring after age 35 or 40 tended to be less serious offenses like public drunkenness. However, it is not clear that this sample of offenders with current alcohol problems, also had alcohol problems earlier in their careers when their criminal involvement tended to be more serious.

Peterson and Braiker (1980) in a survey of 624 California prison inmates found that younger men were more likely to report they "got drunk and hurt someone" than were older men; 31 percent of those under age 25 reported at least one such occurrence in the three years prior to the current incarceration; only 22 percent of those over age 25 report any such occurrence.*

It is clear that young adult males are disproportionately involved in heavy and problem drinking. It is not clear that the problem drinking is a causal factor in the occurrence of the criminal behavior. The notion of hypermasculinity has been proposed to explain both heavy or problem drinking and criminal behavior--a common cause explanation in Pernanen's terms (McCord and McCord, 1962; Zucker, 1968). "Macho" behavior frequently includes tendencies toward both heavy drinking and aggression and seems accurately descriptive of a psychological orientation of many young adult males. In the research of McCord and McCord (1962) the overemphasis on masculinity in the personalities of alcoholics in their sample is a facade. Extreme masculinity was interpreted by the McCords as a mask to cover dependent and passive inclinations.

The notion of personalized power need as conceived by McClelland (1975) and McClelland et al. (1972) to help explain drinking behavior may also be relevant to the alcohol/assault relationship among some young men. According to McClelland's view, men drink in part because alcohol enhances one's sense of personalized power, defined as the power to win personal victories over threatening adversaries (McClelland and Davis, 1972). If this is true, aggressive behavior after drinking may be related to the drinking/power interface.

The source of hypermasculine behavior may also be interpreted from another perspective. During transitional periods of the life cycle, like the

* Unpublished data provided by Mark Peterson of the Rand Corporation.

transition from adolescence to young adulthood, individuals exhibit an increased tendency toward problem behaviors. This tendency has been noted by Winick (1980) and others. Jessor and Jessor (1977) have developed a comprehensive social psychological theory of problem behavior that pays a great deal of attention to life cycle transitions and the problem behavior that often accompanies these transitions. The increased tendency toward problem behavior during life cycle transitions is not surprising; such transitions are likely to be accompanied by pressures and strains associated with altered social role expectations. The compulsive masculinity observed among young adult males may be a response to these pressures. Whatever the interpretation of the source of hypermasculinity it appears to have a relationship to deviant behavior for young adult males and may be a fruitful theoretical focus for understanding the relationship between drinking and crime during this segment of the life cycle.

Investigation of moral development also provides a conceptual framework that may be helpful for interpreting the disproportionate involvement of young adult males in problem drinking and crime. Moral development has to do with the assimilation and observation of social norms. Traditionally, moral development has been viewed as complete by late adolescence. Piaget called the final cognitive development stage "formal operations" and this stage was expected to be complete by age 15. If Piaget's stage theory is accurate, then the high rates of deviance and crime that characterize late adolescence and early adulthood are anomalous. One would expect deviance rates to be higher prior to completed moral development, not afterward. But there is some evidence moral development may not be completed until young adulthood. Kohlberg (1973) argues that contrary to the Piaget conception, there are adult stages of moral development. Further, according to Kohlberg, during the young adult years there is a retrogression or slippage of moral development during the transition to principled adult morality. If such a slippage does occur, it coincides with the age span where deviance rates are high and the slippage may have some capacity to explain the deviant behavior. The investigation of adult moral development may help define the determinants of young adult criminal behavior and describe whether alcohol use is a factor in this behavior. On the surface it seems reasonable to view deviant drinking and criminal behavior as common outcomes of a complex developmental process, perhaps as transitional problem behaviors in the Jessors' terms.

Some evidence from prison inmate surveys suggests alcohol is more likely to be present at the time of offenses committed by older rather than younger offenders. The 1974 survey of 10,000 state prison inmates showed that older offenders were more likely than younger offenders to report they were drinking at the time of the offenses for which they are incarcerated.* These reports are difficult to interpret causally; the simple presence of alcohol does not indicate it had any effect on the commission of the offense. Furthermore prison populations are not representative of offenders generally and it may be for example, that older incarcerated offenders are more likely to be drinkers than younger incarcerated offenders. On the other hand it may be that alcohol is more likely to be causally relevant to the offenses of older offenders as the inmate survey data suggest. The evidence from this inmate survey implies that alcohol use may be important to the criminal behavior of older offenders, and this would appear to contradict our later recommendation that the young adult male ought to be a focus of future alcohol/crime research. That is not the case. The volume of serious crime is much greater among younger than older ages and the magnitude of the problem itself justifies special attention. However, it may be that older incarcerated offenders are notable for alcohol involved crime or, the alcohol/crime relationship may be curvilinear according to age. Such potential complexities can only be understood by additional research.

2. Gender, Alcohol and Crime

Females have lower alcohol consumption and problem drinking rates than males. Females are also relatively unlikely to engage in assaultive crime; official data for the United States indicates more than eight of every ten arrests are of males. Furthermore, with one possible exception, there do not appear to be conceptual or empirical reasons for paying special attention to the relationship between drinking and serious crime among females. The exception may be the drinking/crime relationship among black women. Black women who do drink tend to be heavy drinkers so it may be fruitful to examine the alcohol/crime relationship among black women. However, we would argue that it is likely to be ethnic characteristics, not gender characteristics that are most relevant in this regard. Ethnicity as a factor in the

* Unpublished data. See National Criminal Justice Information and Statistics Service (1979) for a description of this survey and for demographic profiles of the sample.

alcohol/crime relationship is discussed below. Given our interest in developing a future research agenda, we find no evidence to support a focus on females. The victimization aspects of alcohol's relationship to criminal behavior are another issue. Alcohol appears to contribute to the likelihood of being victimized and may be particularly relevant in the cases of forcible rape and domestic violence, offenses where women are usually the victims. The victimogenic aspects of drinking are discussed later.

3. Ethnicity, Alcohol and Crime

There are racial/ethnic regularities in alcohol use and crime patterns. For example, research in the United States indicates that reported alcohol use at the time of an offense differs for whites and blacks. Although the evidence is not fully consistent alcohol use appears to be more often present during offenses committed by white offenders (Roizen, forthcoming). As in the case of gender, we are inclined to interpret observed empirical regularities on the basis of race from a cultural perspective.

Pernanen (1979b: 10-16) and Collins, Guess, Williams and Hamilton (1980: 31-34) summarize the limited evidence that suggests there is systematic cultural variation in the alcohol/crime relationship. Research in the U.S., Canada, Finland, Sweden, Great Britain and other countries confirms an association between drinking and crime. Methodological inadequacies and the lack of comparability of measures and sampling make it difficult to compare findings for different countries, and the strength of the alcohol/crime association appears to vary by country. This is not surprising; ethnographic research indicates that drinking norms and drinking behavior are specific to cultural context and such findings support the position that the alcohol/crime relationship will vary by culture. Overall two inferences are supported: the existence of an alcohol/crime association is generally characteristic of most modern western societies and the strength of this association is variable by culture.

C. The Sociocultural Perspective

It is clear from the literature that cultural factors influence the relationship between drinking and crime; the behavioral effects of alcohol use are shaped by cultural norms. Attitudes toward drinking and rules that govern behavior after drinking are variable across cultures, within the same culture at different times and within particular subcultural components. Blum (forthcoming) discussed a study of Cinquemani (1975) which compares two Central

Mexican Indian tribes. Both tribes drink heavily but only one engaged in violent behavior when drinking. Cinquemani attributes this difference to the cultural norms that govern drinking behavior, including the accountability under tribal rules of individuals for their behavior after drinking.

The anthropological research of MacAndrew and Edgerton (1969) also confirms the importance of cultural norms to the behavior that follows drinking. Behavioral standards are sometimes relaxed during what MacAndrew and Edgerton (1969) have called "time out" periods. Time out periods are frequently characterized by drinking; mardi gras, just before the Lenten season, is a well known example of a time out period. Individuals are not expected to follow the same rules that apply during normal times and time out periods are culturally specific.

Furthermore, in their examination of the rules that govern "drunken comportment" in several cultures, MacAndrew and Edgerton (1969) point out that the notion of disinhibition is theoretically deficient as an explanation of how alcohol causes deviant behavior. Until recent years the disinhibition perspective, explicitly or implicitly, was used as the conceptual foundation for characterizing how drinking caused criminal and deviant behavior. The drug alcohol was assumed to have a pharmacological effect on the human organism that caused the release of baser instincts or the suppression of higher intellectual function; aggression or other problematical behavior was thought to result from this release or loosening. This explanatory perspective has intuitive appeal. Drinking is frequently found to be associated with such activities as revelry, fighting and reduced control of sexual appetite. Human behavior after drinking often appears to be "disinhibited." While it is often true that different norms apply to behavior after drinking than to behavior when not drinking, MacAndrew and Edgerton show that drunken comportment norms exist and the norms are usually observed. Thus, the disinhibition concept, at least as it refers to the pharmacological power of alcohol to nullify normative mandates, does not appear to be an accurate characterization of the behavioral effects of drinking.

1. Normative Ambivalence and Ambiguity

Ahlström-Laakso (1976) discusses the varied characteristics of drinking habits in several European countries. He notes how the social control of behavior after drinking differs between countries. The Irish and Finns, for example, display a recklessness after drinking that is not charac-

teristic of other nationalities and is not explainable on the basis of amount of alcohol consumed. Ahlström-Laakso suggests that the release of aggression through drinking is explained by a cultural ambivalence toward the use of alcohol and an absence of culturally specific informal norms of control over drunken behavior. Countries which have higher rates of alcohol-related aggressive behavior rely on formal legislated mechanisms of control made necessary because of the absence of informal controls.

It is difficult to make explicit connections between norms governing alcohol use and criminal behavior. Heath discusses the universality of norms governing alcoholic beverages and notes the difficulty of extrapolating specific aspects of the normative content.

...alcohol is almost universally subject to rules and regulations unlike those that pertain to other drinks. Not only are there usually special rules about alcoholic beverages, but the rules tend to have a peculiarly emotional charge. This affective quality relates not only to drinking, but also to drunkenness and drunken comportment. Whether predominant feelings about these are positive, negative, or ambivalent varies from culture to culture, but indifference is rare, and feelings are usually much stronger in connection with alcohol than with respect to other things.

Although feeling runs high, and rules are almost universal, there is little consistency - and even considerable contradiction - among human populations with respect to what feelings and rules are appropriate with respect to drinking, drunkenness, drunken behavior, or even the drunken individual.

(Heath, 1976: 43)

It is likely that normative expectations and accountability standards are related to drinking behavior in complex ways. The mandates of the rules themselves undoubtedly channel behavior. Less directly, expectations about alcohol's behavioral effects (independent of pharmacological/physiological effects) and the application of standards of accountability to behavior while drinking, are also likely to influence behavior while drinking. Lang, Goeckner, Adesso and Marlatt (1975) showed how the behavior of individuals who believe they have consumed alcohol became more aggressive even though they have received a placebo. Similarly, it has been suggested that relaxed standards of accountability that are sometimes applied to the behavior of individuals who have been drinking have a synergistic effect on behavior. Coleman and Straus (1979) suggest that husbands who are inclined to beat their

spouses sometimes drink alcohol so that they will have an excuse to beat their wives. McCaghy (1968) has shown how convicted sex offenders sometimes use drinking as a basis for disavowing responsibility for deviant sexual activity. A contemporary example of the deviance disavowal phenomenon is the attempt of accused 1980 political figures to blame alcohol for their behavior. Abscam uncovered corruption and other illegal or scandalous behavior on the part of U.S. Congressmen has been attributed to alcohol use.

The use of alcohol to deny or deflect individual responsibility for behavior can also be interpreted from a more general social-psychological perspective. The tendency to use rationalization as a mechanism to facilitate deviant behavior in advance has been discussed by Sykes and Matza (1957). These authors developed the notion of "techniques of neutralization" to describe a number of ways that individuals justify their deviant behavior. One technique of neutralization is the "denial of responsibility." In the case of alcohol this denial entails blaming the effects of alcohol for untoward behavior. Scott and Lyman (1968) have also discussed the human tendency to use excuses or justifications, i.e. "accounts," to avoid the imputation of a deviant identity. An individual might admit that some behavior was wrong but excuse the behavior because it took place after drinking. Alcohol consumption fits well into the socially based human inclination to act as one wishes without accepting negative normative evaluations of such actions.

In summary, sociocultural interpretations have the power to account for some variation in the alcohol/crime relationship. The explanatory power is difficult to specify theoretically or to measure precisely. Norms differ across cultures and subcultures; ambivalence, contradiction and rationalization characterize the norms. Normative changes that accompany alcohol use sometimes permit or encourage criminal behavior on the part of the drinker. Such normative effects are direct. Normative influences may also be indirect or synergistic. The attribution of blame to alcohol in any ex post facto manner is an example of the indirect criminogenic influence of alcohol.

D. The Social Psychological Perspective

Social psychological explanations of the relationship between drinking and crime attempt to integrate some of the complexity that characterizes this relationship. There are a large number of such theories and theory fragments, many not meant to deal simply with the alcohol/crime relationship. Jessor and

Jessor (1975, 1977) as indicated earlier in this monograph, have developed a "problem behavior" theory which is meant to be a comprehensive conceptual scheme for explanation of a variety of adolescent or youthful problem behaviors: drinking, problem drinking, drug use, theft, and aggression. The variables of the problem behavior theory of the Jessor are conceptually organized into: 1) antecedent and background categories like family demographic characteristics and early socialization experience, 2) personality system variables like achievement values, internal-external locus of control, and tolerance of deviance, and 3) social behavior variables like problem drinking and general deviance. While this theory does not make explicit the causal relationship of drinking and crime, it is a valuable guide for systematic conceptual and empirical organization of the issues - especially for the adolescent and young adult years. Jessor and Jessor (1975: 43) have found that "...the development of drinking is positively associated with an increase in general deviant behavior."

Pernanen (1976, forthcoming) develops a social psychological explanation of alcohol's effect on violent behavior. Pernanen points to the disorganizing effect of alcohol on cognitive function. Drinking reduces one's capacity to perceive, integrate and coherently process communication cues:

"...the model posits a decrease in the perceived number of cues, a narrowing of the perceptual field. The reduction of cues leads to a more random determination of behavior by the situational (environmental and internal) cues present...this leads to a greater likelihood of affective fluctuations in behavior (and disoriented behavior on the instrumental level)...the smaller number of cues determining behavior...leads to a greater likelihood of discrepant structurings of the situation and a consequent cognition of the other person's behavior as arbitrary. Perceived arbitrariness of behavior in turn has been shown to lead to aggressive reactions."

(Pernanen, forthcoming: 38-39)

There is evidence that abstracting ability and the capacity to use a range of coping devices is reduced by the physiological effects of alcohol on individuals. Pernanen provides a theoretical model to illustrate how alcohol use, through its perceptual and conceptual effects, can increase the probability of interpersonal violence.

The social psychological perspective, especially if the focus is on aspects of interpersonal interactions that may lend to violence, is appropriate for analyzing the victimogenic effects of alcohol use. Empirical

evidence suggests that drinking increases the likelihood that one will be victimized or injured more seriously during a victimization. In his work on homicide in Philadelphia, Wolfgang (1958) examined the victim precipitation aspects of this offense and found that victims who had contributed to their own victimization were more likely to have been drinking than were victims who did not. Voss and Hepburn (1968) found similar results in Chicago. The research of Leppa (1974) on robbery in Helsinki indicates the majority of victims were intoxicated at the time they were robbed. When attempts at causal understanding focus on the offense event or the process of violent interaction, alcohol use is one of the factors which appears to have explanatory potential. However, that explanatory capacity might be manifested in the drinking behavior of the victim rather than in the effects of alcohol on the offender.

Roebuck and Johnson (1962) suggest there is an identifiable offender type for whom a relationship between drinking and assaultive crime exists that is explainable on the basis of socialization experience. Roebuck and Johnson identified 40 black offenders (about 10 percent of their sample) who had arrest histories with a pattern of drunken assaults. This group of offenders had similar backgrounds; they were reared under strong fundamentalist religious demands that emphasize strict control of behavior. Roebuck and Johnson suggest that such individuals are unable to express hostility except after drinking and that when this expression is facilitated by drinking it tends to be assaultive.

The examples of social psychological explanations included in this section are only a few of those that have potential to explain the alcohol use criminal behavior relationship. The "hypermasculinity" and "personal power" explanations discussed in an earlier section are social psychological theories and might have been included in this section. Likewise, other theories and theory fragments not discussed here can shed light on the alcohol/crime relationship. The discussion here is meant to suggest several ways that alcohol use might fit a social psychological causal scheme to explain alcohol's effect on criminal behavior.

Given the usual complexity of the relationship between drinking and crime, and given the likely relevance of both psychological and social level variables to this relationship, social psychological interpretations are appropriate explanatory schemes. In the next section psychological explanations for the drinking/crime relationship are discussed. The distinction

between social psychological explanations and psychological explanations is partly a matter of interpretation; social and psychological factors are not independent of each other. Thus the discussion of psychological explanations of the drinking/crime relationship in the next section includes factors that are not clearly and simply psychological.

E. Psychological Perspectives

Past work has shown that individual characteristics influence alcohol's effects on individuals. It is not clear whether these individual differences are physiologically or psychologically based or to what extent social and cultural factors determine the individually manifested variation. Goodwin (1980) for example notes how physiological responses to alcohol differ by race gender and age and suggests that genetic and experiential factors interact to shape the effects of alcohol in individuals.

A number of researchers have noted that the condition of alcoholism is associated with responses to the ingestion of alcohol that differ from the responses of non-alcoholics. In a review of the literature on alcohol's effect on the mood of alcoholics, van der Spuy (1972) notes that alcohol's effects on the mood of alcoholics are not as beneficial as these effects in nonalcoholics. In the light of the known empirical association between the chronic excessive alcohol user and crimes of violence (Tinklenberg, 1973: 204; Pernanen, 1976: 422-423) the finding that the acute effects of alcohol differ for alcoholics and non-alcoholics suggests the need to establish the basis of the differential effects.

Much of the discussion of alcohol use and its relationship to problematic individual behavior has centered on the issue of the "alcoholic personality." A major debate has been whether or not the psychological attributes typically manifested in individuals defined as alcoholic existed prior to the development of alcoholism. In a recent review of the literature on the alcoholic personality, Barnes (1979: 623) suggests that "...an alcoholic personality concept should be broken down into two concepts--the clinical alcoholic personality and the prealcoholic personality." Alcoholics who come to treatment display a common personality pattern but that pattern is one that has been shaped by the person's drinking history. There do appear to be prealcoholic personality characteristics but these are not a clearly definable set of features. Those who later become alcoholics tend to be impulsive, gregarious, nonconforming, aggressive, and hostile (Barnes, 1929: 580, 602;

Williams, 1976: 250-251). However, it is not clear whether and how these personality features lead to the development of alcoholism and criminal behavior.

Williams (1976) argues there are two major theories of the alcoholic personality: dependency theory and power theory. McCord and McCord (1962) have been the primary early spokespersons for dependency theory. The hyper-masculinity explanation discussed in the previous section of this monograph has roots in dependency theory. "According to the dependency theory, the picture of heightened masculinity including aggression, antisocial behavior and the like seen in prealcoholics is a reaction formation against underlying dependency needs" (Williams, 1976: 256). The McCords argue that strong dependency needs characterize alcoholics and these needs were latent in the prealcoholic personality. The dependency needs were covered up by the apparent self confidence and assertiveness displayed by the prealcoholic personality. Williams (1976: 263) prefers the power theory explanation of alcoholism because men who have a strong need for personalized power tend to drink excessively and because "the known facts appear to fit the power theory better than they do the dependency theory."

A number of researchers have also found a relationship between the psychopathic or sociopathic personality and alcoholism. This observed empirical association also amounts to an alcoholism/crime association because psychopathy or sociopathy is partially defined on the basis of repetitive antisocial behavior. In a retrospective longitudinal study of the sociopathic personality Robins (1966) studied a group of individuals who had been referred to a child guidance clinic as children and compared them to a control group. Seventy-two percent of the sociopaths used alcohol to excess as adults; only 27 percent of the control group used alcohol excessively. The sociopaths also displayed a variety of other problem behaviors to a disproportionate extent. Seventy-five percent of the sociopaths had multiple arrests compared to 18 percent of the controls. Fifty-eight percent of the sociopaths were classified as belligerent compared to 18 percent of the controls (Robins, 1966: 295). Barnes (1979: 574) also notes that a number of reports indicate that alcoholics tend to score high on the psychopathic deviate (Pd) scale of the Minnesota Multiphasic Personality Inventory (MMPI).

The relationship between alcoholism, personality, alcohol use and criminal behavior is difficult to elaborate. Two major problems are: (1) the

predominance of individuals who are in treatment in research populations; and (2) the interactive relationships between variables that confound interpretation of findings. It is difficult to know how representative treatment populations are, and attempts to separate the independent effects of alcohol use, changes that have resulted from chronic alcohol use, and personality characteristics, present complex analytic problems. It does seem clear that problem drinking and other forms of deviant behavior are associated with certain personality characteristics like hostility and aggression. Further theoretical development is required to describe how these factors are related to each other in a causal sense.

.F Summary: Social, Cultural and Psychological Theories

The review of theoretical orientations that have some potential to explain the alcohol/crime relationship is not meant to be complete or comprehensive but suggests those explanatory approaches that have the most empirical support or that offer the best potential for middle range theoretical development. As indicated earlier physiological, pharmacological and medical approaches to the issues have not been emphasized even though such explanations undoubtedly have a contribution to make to the understanding of the alcohol/crime relationship.

1. Need for a Phenomenological Perspective

We also believe that understanding the alcohol/crime relationship theoretically will require a perspective that is sensitive to the phenomenological aspects of the relationship. Human behavior cannot be understood simply in objective terms; behavior is shaped by subjective and objective reality. The processing of stimuli is a dynamic activity that is influenced by the present state and past experience of the stimulus processor. "Perceptions are seen as more than passive receptions of stimuli. They entail cognitive, expressive, and evaluative dimensions" (Singelmann, 1972: 416). Social interaction between individuals must also be described as simultaneously meaningful in objective and subjective terms (Singelmann, 1972: 423). This phenomenological view of human behavior and social interaction has important implications for research on the relationship between alcohol use and crime.

Measurement of the effects drinking has on individuals is a fundamental variable in the assessment of the alcohol/crime relationship. If one acknowledges, as the phenomenological view suggests, that alcohol's effects include subjective and interpretive aspects, the methodological posture of research is

affected. It becomes necessary to include, measure and integrate both these aspects of social reality in empirical research and theoretical explanation. Past research has confirmed the importance of subjectivity in the behavioral effects of drinking. Earlier we referred to the work of Lang, Goeckner, Adesso, and Marlatt (1975); they showed that subjects in an experiment became more aggressive when they were told they received alcohol, regardless of whether the subjects were actually given any alcohol. Apparently beliefs about alcohol's effects have an independent influence on behavior.

The interpretive-cognitive effects of alcohol use are even more relevant to the understanding of interactions between two or more individuals. Inter- and intra-individual subjectivity are both factors. Understanding the effects of alcohol on social interaction will require a capacity to understand subjective aspects of such interactions. Perspectives that focus on factors like the communications process and the situational context of social interaction will have a capacity to improve systematic understanding of how drinking contributes to the occurrence of violent encounters between individuals. Pernenen's (forthcoming) work is an example of an interactional perspective which is phenomenologically sensitive.

Social and cultural variables must also be interpreted in a phenomenological sense in the development of theoretical understanding. Alcohol use and its behavioral implications are shaped by rules and interpretations which are rooted in the normative structures of human societies. The MacAndrew and Edgerton (1969) research on drunken comportment in a number of primitive societies referred to earlier provides a good example of a phenomenologically sensitive cultural interpretation of behavior after drinking.

2. The Malevolence Assumption

An additional complicating factor in the theoretical understanding of the alcohol/crime relationship arises from a tendency to view alcohol as a degenerative moral influence. The tendency to ascribe blame to alcohol in an assumptive manner appears to be a general inclination of some societies. The Prohibition Amendment to the U.S. Constitution is a dramatic example. The orientation of the social science literature in this regard is also notable. That literature has tended to ascribe a pejorative influence to alcohol whenever it is present in undesirable events or circumstances. Elsewhere we have referred to this inclination as the "malevolence assumption" (Hamilton and Collins, forthcoming). While it is clearly established scientifically

that alcohol consumption can have undesirable effects on individual and collective life, it is also apparent that alcohol has been blamed for problems in the absence of sufficient justification. There is a tendency, for example, to assume that the alcoholism of an inmate has caused the inmate status or that the mere presence of alcohol in an assaultive encounter was responsible for the assault.

The individual and general tendencies to blame alcohol are an additional reason why future research should be clear about conceptual matters. If conceptual positions are explicit and precise, inferences are more likely to be made on scientific rather than on value grounds. In sum, a phenomenological view of human behavior and social interaction needs to be incorporated into the design of research on the alcohol/crime relationship. Perception, social interaction, and cultural interpretation are dynamic processes that require understanding of both the objective and the subjective components of reality.

III. METHODOLOGICAL ISSUES

A. Measuring the Drinking Variable

The measurement of the alcohol consumption variable in research on the relationship between drinking and crime has been seriously flawed (Greenberg, forthcoming; Roizen and Schneberk, 1978). This deficiency in the literature, by itself, is sufficient to neutralize the inferential capacity of most research findings. In research on the criminal event, alcohol use is typically measured in a "present" or "not present" manner. Information on the amount of drinking by event participants is rare. In past research, where the alcohol problems of individuals constitute the measure of alcohol as an independent variable, terms like "problem drinker" or "alcoholic" tend to be used in a descriptive way. The basis for these classifications is frequently not made explicit.

Ideally, when the acute effects of alcohol constitute the variable of interest, dosage would be experimentally controlled or blood alcohol content (BAC) would be measured through blood, breath or urine analysis. Unfortunately, only limited aspects of the drinking/crime relationship are researchable in experimental settings and research using actual offense events or offenders usually takes place a considerable length of time after the criminal event. Thus BAC will not typically be available as the measure of the drinking variable. There are exceptions in past research. Shupe (1954) examined the urine alcohol concentration of 882 persons arrested for felonies in Columbus, Ohio between 1951 and 1953. Tinklenberg (1973) used Shupe's data to show how higher levels of alcohol consumption were more likely to be linked to violent crime than lower levels, suggesting a curvilinear relationship between dosage and violent crime. Individuals who were arrested for violent crimes tended to have alcohol levels between .10 and .39 percent. Smaller percentages of these arrested individuals had no alcohol in their urine or less than .1 percent alcohol. Further, individuals with .4 percent or more alcohol in their urine were only a small percentage of these arrestees. Tinklenberg interprets this to indicate that individuals who have very high alcohol levels may be too incapacitated to be physically aggressive.

Future research on the alcohol/crime relationship needs to measure the alcohol variable in detail. Measurement of drinking, minimally, should include type and amount of beverage consumed and, preferably, should include

other information such as time spent drinking, food consumed before and during drinking, body weight, drinking history, and other drugs consumed.

1. Drinking Probability Estimates

Inferences about the alcohol/crime relationship are also limited by the absence of data on the probabilities of drinking for subpopulations and situations. Associational data for drinking and crime are difficult to interpret causally in the absence of baseline estimates of the likelihood that drinking or drunkenness will occur at all. For example, what is the probability that males (females, nonwhites, lower SES, etc.) will drink in the evening (on weekends, etc)? What is the probability that an individual will drink to intoxication if he drinks at all? What is the probability that drunkenness will follow drinking at home versus drinking in a tavern?

There already exist some data that permit baseline estimates of aspects of drinking. There are good estimates of the proportion of the population who drinks (including such estimates for subpopulations like males, nonwhites, etc.). There is also good information about some consequences of drinking and about what proportion of the population is likely to have drinking problems. But more of these kinds of data are needed so that interpretation of research findings are facilitated. To use a simple example, the finding that 25 percent of an offender population has a drinking problem is difficult to interpret in the absence of valid estimates of what proportion of a socio-demographically similar non-offender population has a drinking problem.

The collection of drinking data in a way that allows computation of conditional probability estimates requires considerable effort but is worth the investment. Such data provide a capacity for hypothesis testing and inference that is not characteristic of less detailed data. The finding of an empirical association between drinking or drunkenness and crime is difficult to interpret in the absence of an estimate of how likely given types of behavioral configurations (spousal interactions, competition between peers, parties, etc.) which may sometimes include criminal behavior, are also likely to include drinking. If offenses result from a given behavioral configuration 25 percent of the time and drinking is also present in that type of behavioral configuration 25 percent of the time, there is no apparent basis for the imputation of causality for the offense to drinking. Of course, if drinking were found to be present in the same events of a given behavioral configuration type as the offenses were, causal inference would be appropriate. However, in research conducted outside experimental conditions, the ability to observe the covariation of

particular associational details is limited. Alcohol/crime research will usually be conducted outside the laboratory in natural settings under conditions where the scope and level of research data detail will be limited. Thus it is difficult to examine events at a level of description which is detailed enough to permit the explicit connection of event ingredients. For this reason conditional probability estimates can be valuable. If the likelihood of drinking (heavy drinking, drunkenness) is known for some behavioral configurations, inferential capacity is increased.

2. Alcohol Effects

In most cases the focus of alcohol/crime research is on the acute behavioral effects of alcohol consumption, i.e., how does current BAC directly or indirectly affect current behavior. At other times research might wish to examine alcohol's long-term effects. Some past research has implicitly taken this view. Typically, when alcoholism is considered as the independent variable, it is the long-term, chronic effects of drinking that are at issue. Research needs to be explicit about what effects of alcohol are being examined, at least to the extent of specifying whether acute or chronic effects are the focus. This is no simple task, as much remains to be determined about alcohol's effects on people. As discussed in section II on the alcoholic personality, the acute and chronic effects of drinking may be confounded; the acute effects of alcohol may be shaped by physiological changes that have taken place as a result of long-term, heavy drinking.

3. Alcohol and Other Drugs

Alcohol is frequently taken with other drugs, both in the sense that alcohol and other drugs may be used in combination and in the sense that alcohol users also use other drugs. Both kinds of polydrug use can have important implications for research which is attempting to determine how alcohol contributes to criminal behavior. The effects of multiple drug usage will likely differ from the effects of alcohol by itself.

Past research which examines polydrug use patterns tends to look at the multiple use of illicit drugs - not including alcohol. A few studies have included alcohol and these show that the use of multiple drugs, including alcohol, is common. Tinklenberg, Roth, Kopell and Murphy (1976) found approximately equal use of alcohol and marijuana in a sample of adolescent delinquents. O'Donnell, Voss, Clayton, Slatin and Room (1976) found that more than 90 percent of the alcohol users in a national sample of young men also used

other drugs. Preble and Miller (1977) found the combined daily use of alcohol and methadone was a common pattern among some drug users. Research data collected for individuals entering drug treatment programs shows that weekly polydrug use is the predominant pattern, and that alcohol is an element in that pattern in a substantial percentage of cases (Research Triangle Institute, 1980). Research which specifies the particular psychopharmacologic effects of multiple drug use, including alcohol, on crime is to our knowledge nonexistent.

B. Measuring the Crime Variable

1. Use of Official Crime Data

Most research on the relationship between alcohol and crime has relied on officially recorded offenses. If official offenses and offenders were an unbiased sample of all offenses and offenders, reliance on official data for research would not be problematic. However, official data are not likely to be a representative sampling of all offenses and offenders. Offense seriousness is directly related to the tendency to report offenses to the police (Elliott, 1977). Offender characteristics such as age and race are related to the probability of arrest (Peterson and Braiker, 1980; Hindelang, 1978; Wolfgang and Collins, 1978). The presence of alcohol in an offense or an offender may further bias the probabilities of arrest, conviction and incarceration. There is some evidence, for example, that alcohol-involved offenders are more likely to be arrested for offenses committed than are offenders not so involved (Petersilia, Greenwood and Lavin, 1978).

The alcohol/crime literature also shows that prison populations are often used for research and prison populations overrepresent more serious offenders. Probably two to four percent or less of all serious crimes committed culminate in the incarceration of an offender. Most offenses are never reported; only about 20 percent of those reported result in the arrest of an offender; perhaps half of the arrests result in convictions and only a proportion of the convictions result in incarcerations of the offenders. Those who are incarcerated are those who have committed the most serious offenses and also have the more serious criminal records. Offense seriousness and offender prior record are the major determinants of who is incarcerated. Clearly, research on incarcerated samples focuses on unique individuals. In short, it should be assumed that official crime data are biased. This implies that research which relies on these sources needs to be evaluated accordingly.

2. Use of Behavioral Criteria

Behavioral rather than legal criteria should be used to define the crime variable. If causal understanding is the goal, explicit examination of drinking and subsequent behavior is required. This is especially true if the causal contribution of alcohol to the occurrence of interpersonal violence is the issue being addressed. Assaults are not discrete events that can be understood in isolation; assaults typically evolve out of personal interactions that may be quite complex. One view of violent interactions between people characterizes this outcome as the culmination of an escalation process (Shoham, Ben-Davis, and Rahav, 1974). The cognitive impoverishment model of Pernanen (1976, forthcoming) described earlier in this monograph also emphasizes the emergent quality of alcohol related interpersonal violence. If the influence of alcohol on interactional processes is to be understood, the processes must be described. Gradations of aggressiveness must be measured so the dependent variable is not simply measured in dichotomous fashion - i.e., assault - no assault.

This interactional view of alcohol's role in violence seems consistent with the evidence. It seems clear that the effect of drinking is not simple and direct (pathological intoxication may be an exception). Drinking is typically one among a number of factors that determine behavioral outcomes so that understanding the outcomes requires a detailed picture of the process.

At times the influence of alcohol use on property crime or more generally on criminal careers will be the focus of research. In such cases the strategy for measurement of the dependent variable will not emphasize detailed interactional data. However, the level of detail included in the measurement of the dependent variable will be an important determinant of the capacity of the research. For example, detailed offense histories, including offenses that did not result in arrest, will be required if the influence of alcohol use on criminal careers is the focus of research.

C. Summary: Measuring the Alcohol Use and Crime Variables

Future research on the relationship between alcohol use and crime should measure the alcohol use variable in detail. If an event-based analysis is the focus of research, a minimal requirement is the measurement of the presence of alcohol and the amount consumed. If the drinking problem status of individuals is used as the measure of the alcohol variable, the specific criteria used to classify individuals on the drinking variable need to be made

explicit. Use of an existing instrument for the measurement of problem drinking is preferred so that comparison of research results for different data sets is possible.

Research on the relationship between drinking and crime would be best served if detailed drinking history and/or detailed drinking event data were gathered. Ultimately, valid inferences about the causal relevance of alcohol consumption to criminal behavior requires conditional probability data for the drinking variable. It is difficult to interpret data that show offenders in a given percentage of criminal offenses were drinking unless an overall estimate of the likelihood that the offender or the event circumstances would involve alcohol is also available. It is not enough to know that drinking or a drinking problem is coterminous with criminal behavior. Conditional probabilities for the drinking variable are required for valid causal inference. The measurement of the drinking variable also needs to be explicit about whether the acute or chronic effects of alcohol are of interest and whether other drug use may also be a factor.

Careful measurement of the criminal behavior variable will serve future research on the drinking/crime question well. The nature of the detailed measurement will be shaped by the nature of the research questions. At times detailed interactional data will be required; at other times measurement will entail description of criminal career patterns or other aspects of criminal involvement.

IV. FUTURE RESEARCH RECOMMENDATIONS

This monograph attempts to summarize the empirical and conceptual state-of-the-art on the drinking/crime relationship. This summary was one of the major goals of an NIJ funded project to develop a future research agenda for the alcohol/crime area. Five research designs were also developed during the project; these designs address various aspects of the relationship between alcohol consumption and assaultive behavior and are detailed in Collins, Guess, Williams and Hamilton (1980). The following quote from that document summarizes four state-of-the-art judgements that formed the basis for the development of the research designs:

Past theoretical and conceptual aspects of alcohol/crime research have often been seriously deficient. Future work must improve this state by multidisciplinary work that pays close attention to middle range theory development.

Alcohol's behavioral effects at the individual level have important subjective and interpretive components. This requires that future work attend to phenomenological aspects of the alcohol/crime relationship.

Cultural and scientific attitudes toward alcohol themselves affect interpretations of alcohol's behavioral effects and thus need to be considered in research designs. Cultural factors are also pertinent to the alcohol/crime relationship because norms toward drinking and what behavior is acceptable after drinking are variable across cultures.

Measurement of the alcohol variable and the crime variable needs to be detailed. The alcohol/crime relationship needs to be examined in detail at the micro level of analysis.

(Collins, Guess, Williams and Hamilton, 1980: 26).

The substantive foci of the five detailed research designs were developed in the light of the above points and were also based on additional judgements about what particular research questions were most important to address. These judgements led us to recommend future research that: 1) compares national and U.S. state rates of alcohol consumption and violent crime at the aggregate level; 2) investigates differences in cultural norms about alcohol use and crime in one or a few communities; 3) investigates the relationship between drinking and marital violence in a survey of couples; 4) focuses on the young adult male to examine the relationship between drinking and assaultive behavior; 5) explores the effects of setting and context on the

alcohol/crime nexus. Details of research designs for these five recommendations are provided in the above document.

The recommended research approaches and issues are framed in a social psychological perspective. Emphasis on this perspective does not imply a judgement that other perspectives like the physiological and pharmacological do not have a contribution to make to understanding the alcohol/crime relationship. The social psychological emphasis does imply a judgement that other perspectives do not have a comprehensive capacity for dealing with the complex relationships at issue. Crime itself is a complex social phenomenon; its definition, both formally and in practice, is a product of the social process. At this stage in the scientific understanding of the alcohol/crime relationship it is necessary that future research incorporate this social complexity. The recommended research designs focus on social and psychological factors because this focus is scientifically and heuristically appropriate.

It is our judgement that alcohol use is an important factor in the occurrence of some crime. If we begin to understand how alcohol use exerts its causal influence, the relative importance of alcohol use to the occurrence of criminal behavior can be estimated.

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