Association Is Not Causation

Alcohol and Other Drugs Do Not Cause Violence

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The "demon rum" explanation for violence and abuse in the home is one of the most pervasive and widely believed explanations for family violence in the professional and popular literature. Addictive and illicit drugs, such as cocaine, crack, heroin, marijuana, and LSD, are also considered causal agents in child abuse, wife abuse, and other forms of family violence.

That alcohol and substance abuse may be related to, or may directly cause, family violence is not a new idea. William Hogarth's etching *Gin Lane*, done in the early 1700s, presents a graphic visual portrayal of the abuses and neglect that befall children whose parents abuse alcohol (for a copy of this etching, see Radbill, 1974). Not surprisingly, Hogarth's etching also implies that only certain types of alcohol, in this case gin, which was used primarily by the lower classes, are related to abuse and neglect. Social workers in the United States in the 1800s believed alcohol was the cause of child maltreatment, and the prohibition movement in the United States in the 1920s was partially based on the assumption that drinking led to the mistreatment of children (Gordon, 1988).

Both conventional wisdom and scholarly presentations,… by Jerry Flanzer… argue not only that there is a substantial association between alcohol and drug use and violence in the home, but that the substances themselves are direct causal agents. The key to the argument that alcohol causes violent behavior is the proposition that alcohol acts as a *disinhibitor* to release violent tendencies. The proposition is based on a causal link between alcohol and the human brain. Alcohol is viewed by many as a "superego solvent" that reduces inhibitions and allows violent behavior to emerge. Crack, cocaine, heroin, LSD, and marijuana have also been postulated as direct causal agents that reduce inhibitions, unleash violent tendencies, and/or directly elicit violent behavior.

There is substantial support for the notion that alcohol and drug use is related to violence in general, and to family violence in particular. Research on homicide, assault, child abuse, and wife abuse all find substantial associations between alcohol use and abuse and violence (for example, Bennett, 1995; Boles & Miotto, 2003; Coleman & Straus, 1983; Gelles, 1974; Kaufman Kantor & Straus, 1989).… Flanzer reviews a number of studies that demonstrate an association between alcohol use and misuse and family violence. Research on drug use and abuse is much more suggestive and anecdotal than is the research on alcohol and violence. In our own survey of violence in American families, we found that parents who reported "getting high on marijuana or some other drug" at least once a year also reported higher rates of violence and abusive violence toward their children (Wolfner & Gelles, 1993).

ALCOHOL AND VIOLENCE: ARGUMENTS AND EVIDENCE AGAINST THE THEORY OF DISINHIBITION

It is our contention that, with the exception of the data we discuss in the following section on amphetamines and violence, there is little empirical evidence to support the claim that alcohol and drugs act as disinhibitors and are of primary importance in explaining family violence. Stated another way, there is little scientific evidence to support the theory that alcohol and drugs such as cocaine and crack have chemical and pharmacological properties that

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directly produce violent and abusive behavior. Evidence from cross-cultural research, laboratory studies, blood tests of men arrested for wife beating, and survey research all indicates that although alcohol use may be *associated* with intimate violence, alcohol is not a primary *cause* of the violence. Indeed, as Bennett (1995) suggests, the majority of men who use alcohol and drugs are not violent toward their female partners, and most episodes of violence do not involve substance abuse.

Evidence From Cross-Cultural Research

The best evidence against the disinhibitor theory of alcohol comes from cross-cultural studies of drinking behavior. Craig MacAndrew and Robert Edgerton (1969) reviewed the cross-cultural evidence on how individuals react to drinking. If the pharmacological properties of alcohol are the direct causes of behavior after drinking, then there should be very little variation in drinking behavior across cultures; if alcohol acts chemically on the human brain, then it should have the same general behavioral consequences across societies. Contrary to what one would expect using a pharmacological explanation, MacAndrew and Edgerton found that drinking behavior varies greatly from culture to culture. In some cultures, individuals drink and become passive; in others, individuals drink and become aggressive. What explains the cross-cultural variation? The differences in drinking behavior appear to be related to what people in each society believe about alcohol. If the cultural belief is that alcohol is a disinhibitor, then people who drink tend to become disinhibited. If the cultural belief is that alcohol is a depressant, drinkers become passive and depressed.

Because in our society the belief is widespread that alcohol and drugs release violent tendencies, according to MacAndrew and Edgerton (1969) people are given a "time out" from the normal rules of social behavior. They assert that alcohol and drug use occur in a cultural context in which an individual's behavior can be attributed to the admission of being "loaded." Because family violence is widely considered deviant and inappropriate behavior, there is a desire to "hush up" or rationalize abusive behavior in families. The desire of both offenders and victims to cover up family violence and the belief that alcohol is a disinhibitor combine to provide a socially acceptable explanation for violence. "I didn't know what I was doing, I was drunk" is a frequent explanation for wife beating and sometimes child beating. Victims of family violence often explain the perpetrator's actions by noting, "My husband is a Dr. Jekyll and Mr. Hyde—when he drinks he is violent, but when he is sober, he is no problem." In the end, the social expectations about drinking and drinking behavior in our society teach people that if they want to avoid being held responsible for their violence, they can either drink before they are violent or at least say they were drunk.

Evidence From Laboratory Experiments

MacAndrew and Edgerton's (1969) cross-cultural findings about alcohol, disinhibition, and violence have been put to an experimental test. If drinking behavior is learned, then it follows that a researcher could manipulate a situation to produce "drunken behavior" even if the people involved were not actually drinking alcohol. Lang and his colleagues performed an experiment in which college student subjects were assigned randomly to one of four groups (Lang, Goeckner, Adesso, & Marlatt, 1975). Two groups received tonic water, and the other two groups received tonic water and vodka. Vodka was selected as the alcoholic beverage because the taste of vodka could not be differentiated from "decarbonated" tonic water. Subjects in two groups—one receiving tonic water only and one receiving vodka and tonic—were accurately told what they were drinking. Subjects in the other two groups were misled—the tonic water-only drinkers believed they were drinking vodka and tonic, and the vodka and tonic drinkers believed they were drinking only tonic water that had been decarbonated. Aggression was measured by assessing the intensity and duration of shocks subjects believed they were administering to Lang's associates. Subjects were told they were going to be in a learning experiment and they were "teachers" responsible for teaching "students." Experimental confederates acted as if they were shocked, but no actual shock was administered. Fine motor skills were measured by having subjects try to place shaped objects into shaped holes.

The researchers found that although drinking (whether the subjects correctly knew they were drinking alcohol or not) was related to fine motor skills, drinking was related to aggression only as a function of expectancy. In other words, the most aggressive subjects—the ones who gave the most

and strongest shocks—were those who *thought* they were drinking alcohol, regardless of whether their glasses actually contained alcohol. It is *expectancy* that determines how people behave when they are, or even believe they are, drinking.

Evidence From Blood Tests of Men Arrested for Wife Beating

A third type of evidence disputing the association between alcohol and violence comes from the work of Morton Bard and Joseph Zacker (1974), who trained police officers to observe, record, and intervene in cases of domestic assault. In 1,388 cases of domestic assault, one or both partners were drinking in 56 percent of the incidents. Drinking was as common in cases of verbal disputes as in physical assaults. However, although nearly half of the assaultive men *said* they were drinking at the time of the assaults, blood alcohol tests found that fewer than 20 percent of the men were legally intoxicated (Bard, personal communication, 1974). Thus, although alcohol was *associated* with the violence, there is less than compelling evidence that the men were actually physically affected by alcohol they had consumed. One drink can affect motivation and coordination, but it usually takes two drinks in an hour to bring about a blood level of .10—the general legal limit of intoxication.

Evidence From Survey Research

Additional evidence disputing the link between drinking and violent behavior comes from survey research. Murray Straus and his colleagues examined data from two national surveys of family violence. The first survey found that there was a strong relationship between alcohol use and family violence (Coleman & Straus, 1983). However, extreme levels of alcohol use were *not* related to high levels of violence. In fact, that analysis found that men who never drank alcohol were violent more often than were men who drank infrequently. Physical violence in families actually declined for those who reported the highest incidence of being drunk.

Glenda Kaufman Kantor and Murray Straus (1987) examined data from the second National Family Violence Survey and found that, contrary to the earlier study, excessive drinking was associated with higher levels of wife abuse. The rate of husband-to-wife violence was highest among binge drinkers; next highest among those reporting they drank alcohol from three times a week up to daily and who had three or more drinks each time they drank; and lowest among those who reported that they abstained from drinking alcohol. While these data seem to provide support for at least the theory that drinking is associated with violence, Kaufman Kantor and Straus also examined drinking behavior *at the time of the violent incident*. Their analysis of the data clearly demonstrates that alcohol was not used immediately prior to the violent conflict in the majority (76 percent) of the cases. One or both partners were drinking at the time of the violent episode in 24 percent of the cases. The violent male was drinking at the time of the incident in 14 percent of the cases, the victimized female in 2 percent of the cases, and both were drinking in 8 percent of the cases.

Thus, although the survey research demonstrates a substantial association between drinking and violence, alcohol use per se is not a necessary or sufficient cause of family violence.

Drugs and Violence

Drugs other than alcohol also have been implicated as direct causes of violent behavior. The issue of a possible link between drug use and abuse and violence is emotion laden, and fact often is mixed with myth, The majority of studies examining relationships between illicit drugs and violence tend to group all illicit drugs together; therefore it is difficult to make an empirical or theoretical distinction between the association of a particular illicit drug and violent behavior (Parker & Auerhahn, 1998). With regard to family violence, research on child or wife abuse rarely includes information on the use of drugs, other than alcohol (Kaufman Kantor & Straus, 1989). Another problem is that there are many different drugs that have been implicated in acts of violence, and each of these has a different physiological effect. The drugs implicated include marijuana, phencyclidine (PCP), cocaine, opiates, hallucinogens such as LSD, stimulants, and sedative-hypnotics (Miller & Potter-Efron, 1990). The available research on the different types of drugs and their possible effects on violent behavior has found some consistent evidence.

Cannabis or marijuana use is frequent among juvenile offenders and violent juvenile offenders,

and some investigators attribute fearfulness, panic, and intense aggressive impulses to marijuana use (Nicholi, 1983). On the other hand, marijuana is generally classified as a drug producing a euphoric effect, and it may actually reduce rather than increase the potential for violent behavior. Some researchers have found that the higher the dose of marijuana, the lower the likelihood of violent behavior (Taylor & Leonard, 1983). Reiss and Roth (1993) suggest that marijuana in moderate doses inhibits violent behavior in both animals and humans.

Research studies provide evidence that hallucinogen use, particularly LSD, does not actually trigger violent behavior, but may aggravate the effects of preexisting psychopathology, including violent episodes (Reiss & Roth, 1993).

Opiates such as heroin also have been linked to criminal and violent acts. Crime rates for opiate users are unusually high, and violence may often be part of the criminal act. In fact, Roth (1994) asserts that the withdrawal from opiates tends to heighten aggressive responses to provocation. In some cases, individuals addicted to opiates may commit crimes to pay for its use rather than experience the severe withdrawal symptoms associated with this drug (Senay, 1999).

Cocaine is an extremely volatile drug with a short and intense effect. Although the intensity of the cocaine or crack rush is substantial and the effects varying, there appears to be little evidence that cocaine or crack is actually causally related to aggressive behavior (Johnson, 1972; Miller & Potter-Efron, 1990). However, cocaine use is associated with the perpetration of violent crimes (Kosten & Singha, 1999).

One drug does stand out as a possible cause of violent behavior: amphetamines. Amphetamine use has been associated with increased crime and violence. In fact, if used frequently, it is more closely related to violent behavior than any other psychoactive drugs (Kosten & Singha, 1999). Amphetamines raise excitability and muscle tension, and this may lead to impulsive behavior. The behavior following amphetamine use is related to both the dosage and the pre-use personality of the user. High-dosage users who already have aggressive personalities are likely to become more aggressive when using this drug (Johnson, 1972). Interestingly, studies of nonhuman primates, in this case stump-tailed macaques, have found that monkeys do become more aggressive when they receive dosages of *d*-amphetamine (Smith & Byrd, 1987). Based on research with monkeys, as many as 5 percent of instances of physical child abuse may be related to amphetamine use and abuse (Smith & Byrd, 1987).

Methodological Issues

Despite the evidence to the contrary, some researchers and clinicians, such as Flanzer,… continue to assert that alcohol and drugs cause violence. Although the literature linking alcohol and drug use and abuse to various forms of family violence appears abundant and consistent, there are a number of important methodological limitations that both undermine the claim for a strong and consistent association between alcohol and drug use and violence and, more important, limit the ability to make causal inferences about the link between alcohol and other drug use and violent behavior.

Definitions

The main concepts in studies linking alcohol and drug use to family violence are often inadequately defined. The majority of investigators who study the relationship between substance use and abuse and family violence fail to appreciate the problems that arise in defining *family violence*, *child abuse*, *child maltreatment*, *wife abuse*, *spouse abuse*, and *elder abuse*.

Abuse and Violence. The terms *violence*, *abuse*, *domestic violence*, *intimate violence*, and *family violence* are often used interchangeably in research on alcohol or drugs and violence. In many cases, the terms are used without definitions at all. In addition, investigators examining the association between drinking and/or drug use and child abuse often examine more than one form of maltreatment—physical abuse, sexual abuse, and/or neglect. Because each specific form of maltreatment has a relatively low base rate, and because the forms of abuse overlap—some children are both physically and sexually abused—many researchers use *child abuse* or *child maltreatment* as a global construct and include various forms of maltreatment under the general term. When physical abuse and neglect are combined under the same term, it is impossible to know whether an association between alcohol

and/or drug use and maltreatment is the result of alcohol and drugs producing disinhibition and thus violent behavior, whether the alcohol and drug abuse is itself considered a sign of neglect, or whether the alcohol and drug use led to neglect because of the debilitating effects of chronic or excessive alcohol and/or drug use.

Most studies of alcohol use and child maltreatment cannot be compared with one another because of the wide variation of nominal definitions of *maltreatment* employed by investigators. Some researchers study violence toward children, others focus on sexual abuse, and still others examine the full range of acts of commission and omission under the concept of child maltreatment. The varying definitions of abuse and neglect result in wide variations in the associations reported between drinking and drug use and child abuse and neglect. To a lesser extent, the same definitional problems affect the study of spouse abuse, woman abuse, and domestic violence. Definitions of *woman abuse* typically focus on acts of damaging physical violence directed toward women by their spouses or partners. Some investigators broaden the definition to include sexual abuse, marital rape, and even pornography.

Violence, the core concept in studies that attempt to test the hypothesis of a causal relation between alcohol and violence, has also proven to be difficult to define. The word *violence* is frequently used interchangeably with *aggression*, although *violence* refers to a physical act, while *aggression* refers to any malevolent act intended to hurt another person. The hurt may be emotional injury or material deprivation. Second, because of the negative connotation of the term *violence*, some investigators try to differentiate between hurtful violence and acts that may be evaluated as legitimate. Thus, William Goode (1971) tries to distinguish between legitimate acts of force and illegitimate acts of violence. Spanking a child who runs into the street might be considered "force," whereas beating the same child would be "violence." Attempts to clarify the concept of violence have demonstrated the difficulty of distinguishing between legitimate and illegitimate acts. Offenders, victims, bystanders, and agents of social control often accept and tolerate many acts between family members that would be considered illegitimate if committed by strangers.

Measuring Abuse and Violence. Although there is considerable variation in the nominal definitions of *abuse* and *violence*, there is quite a bit of similarity in the way researchers operationally define these terms. Abuse and violence are typically seen as taking place in those instances in which the victim becomes known and labeled by a professional or official agency. Thus, studies examining the relationship between alcohol and child abuse typically obtain a sample of abused children or abusive parents from clinical caseloads or official reports of child maltreatment. Studies focusing on wife assault most often obtain samples from clinical caseloads, programs for battered men, or shelters for battered women.

The major problem with operationally defining *violence* and *abuse* through the use of clinical cases or official report data is that the operational definitions overlook the systematic biases in the process by which cases of abuse are either officially labeled or come to clinical attention. For example, Newberger and his colleagues (1977) argue that poor and minority children with injuries seen in public hospitals are more likely to be labeled "abused" than are middle- or upper-class children seen in physicians' private practice.

A significant limitation of using clinical cases or official reports of abuse as the means of operationalizing the variables *maltreatment*, *abuse*, or *violence* is that the strength of the association between alcohol or other drug use and violence may be artificially increased by a selective labeling process. Physicians, social workers, police officers, and other social service and criminal justice personnel who believe that alcohol and drug abuse *cause* family violence may be susceptible to labeling an incident "child abuse" or "woman abuse" if alcohol or another substance is involved. If alcohol or substance use is absent, the same incident or injury may well be labeled an "accident." Sarah Fenstermaker Berk and Donileen Loseke (1980) found that police were more likely to make arrests in cases of domestic violence when the offender was drinking than when he was not drinking. Thus, studies using police records, court cases, social service records, and official registry data of child abuse and domestic violence probably overrepresent incidents in which alcohol and drugs were involved. These are the types of samples used in the majority of research studies cited by Flanzer.… As noted earlier, if the study is examining child neglect and cases are drawn from official registries, the alcohol and drug use may have been the defining factor that led the caretaker to be reported for neglecting his or her child.

Alcohol and Drug Use. There are similar problems with the nominal and operational definitions of *alcohol* and *drug use* and *abuse*. The terms *alcohol use*, *alcohol abuse*, *alcoholism*, *drug use*, *drug dependency*, and *excessive use* are often used interchangeably, and the terms are often either not precisely defined or not defined at all. Flanzer… himself uses these terms interchangeably and never actually defines what he means by *alcoholism*, *substance abuse*, or *alcohol intake*. Paul Roman (1991) points out that an overarching problem with all research on alcohol use and abuse is that the jargon of *alcoholism*, *alcohol abuse*, *responsible drinking*, *problem drinking*, and all other such concepts are not effectively and consensually defined and measured. Just as some studies use the general term *child maltreatment*, some studies use the general term *substance abuse* to encompass use and abuse of a range of substances—alcohol, cocaine, marijuana, heroin, and so on. The use of a general construct for substance use and abuse ignores the differing pharmacological properties of the substances.

Furthermore, when studies actually do attempt to define and measure alcohol or drug use and abuse, they tend to use a single-item measure. Some studies use a single self-report measure of drinking, drug use, drinking problems, or drug problems—for instance, an item that asks whether the respondent has an alcohol problem. In other studies, it is not at all clear how the diagnoses of alcoholism or alcohol problems were made. Kenneth Leonard and Theodore Jacob (1988) note that it appears that someone—the offender, his or her spouse, or some social agency—simply categorizes the offender with respect to drinking habits.

Few studies attempt to distinguish between the amount of alcohol or a drug that is consumed and the frequency of consumption. Very few studies actually collect direct data on alcohol or drug use, such as using blood or saliva tests to assess the presence of alcohol or drugs in the body. Thus, because self-reports or classifications of alcohol or drug use are not validated against an objective measure, the validity of these classifications in many studies is questionable.

An additional measurement dilemma is that some studies assess history of alcohol and drug use and correlate this with violence; other studies measure alcohol or drug use for a specific period of time, for instance, the past six months or year; still other studies measure alcohol or substance use at the time of a violent incident.

When data are obtained on drinking or drug use at the time of the violent incident, researchers rarely obtain a measure of whether the perpetrator has a pattern of drinking or substance use. Conversely, some studies focus on the alcohol or drug problem, but do not measure whether the offender actually was using the substance at the time of the violent incident. This latter shortcoming is especially important, because such studies can shed no light on the disinhibition hypothesis about alcohol, drugs, and violence.

Research Designs

Flanzer… explains that there are three criteria that must be satisfied in order to demonstrate a causal relationship. He also argues that the research linking alcohol, drugs, and violence satisfies the criteria of causality. We believe that research not only fails to satisfy the three criteria, it fails to satisfy the fourth criteria of "theoretical rationale" as well.

1. *Association.* Research design problems in many of the studies examining drinking, drugs, and family violence limit the ability to determine whether significant associations exist. The main limitation of many studies is that the investigators fail to use a control or comparison group, or, if a comparison group is employed, it is not appropriate. Numerous studies simply collect data on the alcohol or drug use of a clinical population of abusers or abused. These studies identify the proportion of offenders who have alcohol problems or drug problems. Even if the proportions are quite high—greater than 50 percent—it is impossible to know whether these proportions are higher than would be found among other individuals in the clinical population who do not use violence against family members. When comparison groups are employed, investigators often fail to establish baseline measures of family violence. Thus, a study comparing alcohol use in a sample of individuals seen in therapy for domestic violence to a sample of individuals seen in therapy for marital distress cannot establish a valid association unless there is a baseline measure of domestic violence obtained from the presumed nonviolent distressed couples. Even when baseline data on violence are collected from a comparison group, the group itself may be inappropriate for comparison

because of variations in significant social, demographic, or psychological variables.

Even when the studies employ control or comparison groups, the actual associations between alcohol and family violence are quite variable. Flanzer… asserts that estimates of the association of alcoholism and incest range from 20 percent to 50 percent. The relationship between alcohol use and domestic violence is similarly variable, depending on the study methodology. Thus, although the available evidence does demonstrate an association, it does not demonstrate a uniformly strong association between substance use and family violence.

2. *Time Order*. Because the vast majority of studies of drinking, drugs, and family violence are cross-sectional, where data are collected at only one point in time, investigators have difficulty in meeting the time order condition of causality. In brief, this means that the investigators cannot demonstrate that the alcohol or drug use preceded the violent or abusive behavior. It is at least plausible that the drinking or drug use that is correlated with violence commenced *after* the onset of the violent behavior. Unless investigators examine the pattern of drinking and drug use over time, they cannot determine whether or not the drinking or drug use preceded the violent or abusive behavior.

3. *Intervening Variables or Spuriousness*. Few studies attempt to rule out spuriousness in the relationship between drinking or other drug use and family violence. As noted previously, one plausible spurious variable is that drinking may be the determining factor in whether a case is identified as child maltreatment or whether an arrest is made in the case of wife abuse. Another plausible source of spuriousness is that a social factor, such as poverty or marital conflict, may be simultaneously related to the likelihood of both substance abuse and violent and abusive behavior. Finally, the relationship between drinking and drug use and family violence may be spurious; it may be simply a function of expectancy effects. Because individuals in our culture assume that alcohol and drugs reduce inhibitions and increase the likelihood of violent or untoward sexual behavior, the cultural expectancy, rather than the chemical properties of the substances, may explain the association between drinking or drug use and family violence.

4. *Theoretical Rationale*. The final threat to the validity of the claim for a causal relationship between alcohol or other drug use and family violence is the inadequacy of the theoretical rationale. The key theoretical link used to explain the purported relationship is that alcohol and some drugs chemically affect the brain and break down or reduce inhibitions, and thus cause violent behavior. Yet the body of research just reviewed undermines this claim.

Conclusion

It is clear that there is no simple link between substance use and family violence. The relationship cannot be explained simply by stating that alcohol or certain drugs "release inhibitions" and cause violent behavior. Even in the case of amphetamines, which have the most direct psychopharmacological relationship to violence, the effect depends on dosage and pre-use personality (Goldstein, 1985). The use of alcohol and/or drugs is not the sole determinant of whether or not an individual exhibits violent behavior. The influence of substances on the likelihood of violence is mediated by social factors, such as income, education, and occupation; cultural factors, such as attitudes about violence, drugs, alcohol, and the effects of alcohol; and personality factors.

Except for the evidence that appears to link amphetamine use to family violence, the portrait of the alcohol-and-drug-crazed partner or parent who impulsively and violently abuses a family member is a distortion. There is no conclusive, empirical evidence to support a causal relationship between abuse and alcohol or other drug use or abuse. The relationship between substance abuse and violence is complex and mediated by a myriad of individual, situational, and social factors.

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