

# THE EFFECTS OF ALCOHOL INTOXICATION ON VIOLENT VERSUS OTHER OFFENDING

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The role of alcohol intoxication in different types of criminal behavior was examined using data from a nationally representative sample of inmates ( $N = 16,698$ ). An attempt was made to isolate the effects of intoxication on violent criminal behavior by controlling for chronic alcohol use and prior offending. The results suggested that intoxication plays its strongest role in homicide and physical and sexual assault but that it also plays a role in robbery and burglary. Dosage effects also provided supporting evidence: The more intoxicated the offender, the greater the effect. However, alcohol played a role in homicide and physical assault even when offenders drank in moderation. The evidence was most consistent with the idea that alcohol has stronger effects on offenses that involve personal confrontation and are therefore more risky. Evidence also suggested that alcohol effects are stronger for dispute-related violence in part because victims are also likely to be intoxicated.

**Keywords:** alcohol intoxication; crime; violence; victims; dosage effects

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Alcohol is one of the strongest correlates of violent criminal behavior (Greenfeld, 1998). Evidence suggests that violent offenders are often intoxicated at the time of their offense (Boles & Miotto, 2003; Fagan, 1990; Miczek et al., 1994; Pernanen, 1991; Roizen, 1997). In addition, research on chronic drinking shows that individuals who drink more frequently are more likely to engage in violence (J. J. Collins & Messerschmidt, 1993; J. J. Collins & Schlenger, 1988; Wells & Graham, 1998). The literature is not clear, however, regarding whether intoxication is more important for some types of violence than other types and whether it also affects nonviolent criminal behavior. That is the focus of this research. Using data from a nationally representative sample of inmates, we attempted to isolate the effect of alcohol intoxication on different types of criminal offenses by controlling for chronic alcohol use and prior offending.

## THE CAUSALITY ISSUE

Various arguments have been given to explain why alcohol intoxication might have an effect on violence. Many of these arguments focus on its tendency to impair performance and intellectual functioning and to alter perceptions of risk (e.g., Bushman, 1997). For example, it is argued that alcohol decreases cognitive capacity so that the drinker's attention is focused on the most salient cues in a situation (Steele & Josephs, 1990). This cognitive "myopia" leads intoxicated individuals to use violence because they fail to consider the costs. It has also been argued that the pharmacological effects of alcohol interfere with self-awareness and increase psychological and physiological arousal (Critchlow, 1986;

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Dermen & George, 1989; Hull, 1981; Steele & Josephs, 1990). These effects may also lead indirectly to violence if they lead to behavior that offends others and creates interpersonal conflict (R. B. Felson & Burchfield, 2004). Finally, social beliefs about alcohol may contribute to its effect. Drinking can provide an excuse for offenders to commit the crime if it allows them to avoid responsibility. There may also be expectations about the alcohol-violence relationship that may result in a self-fulfilling prophecy (Goldman, Brown, & Christiansen, 1987).

There are also strong reasons to believe that at least some of the relationship between drinking and violence is spurious. For example, low self-control and other individual factors may lead to both heavy alcohol use and violence and produce a spurious relationship (e.g., Gottfredson & Hirschi, 1990; Klostermann & Fals-Stewart, 2006; White, Brick, & Hansell, 1993; White, Hansell, & Brick, 1993; White, Loeber, Stouthamer-Loeber, & Farrington, 1999; Zhang, Wieczorek, & Welte, 1997). Individual variation in routine activities and differential associations may also produce a spurious alcohol-violence relationship. Frequent drinkers may be more likely to go to bars, go out at night, associate with other heavy drinkers, and otherwise live a "fast-lane" lifestyle that increases their risk of offending (M. Felson, 1998).

Experimental studies have shown that intoxication has a causal effect on violent behavior in the laboratory (e.g., Lipsey, Wilson, Cohen, & Derzon, 1997). Experimental evidence has also documented expectancy effects but suggests that they tend to be weak, at least in the laboratory context (Hull & Bond, 1986; see Graham et al., 1998, for a review). The causality issue has also been examined outside the laboratory. Research on men's violent behavior against their intimate partners has used within-subject designs to rule out the spurious effects of preexisting individual differences (see Leonard, 2005, for a review). Research shows, for example, that men in treatment for alcoholism were much more likely to engage in violence toward their intimate partners on days they had consumed alcohol than on days in which they were sober (Fals-Stewart, 2003; Leonard & Quigley, 1999; Murphy, Winters, O'Farrell, Fals-Stewart, & Murphy, 2005). Other studies report that drinking is more likely during violent events than during nonviolent conflicts (e.g., Phillips, Matusko, & Tomasovic, 2007; Wieczorek, Welte, & Abel, 1990). It is possible, however, that time-varying circumstances increased the likelihood of both drinking and violence, creating a spurious relationship.

More recently, R. B. Felson, Teasdale, and Burchfield (2008) attempted to isolate the spurious portion of the relationship between alcohol and youth violence using the Add Health data set. The problem of spuriousness should be particularly important for youth, given that drinking is illegal. R. B. Felson et al. compared the relationship between drinking and violent behavior while sober to the total relationship between drinking and violent behavior (sober or not). The former is a spurious relationship, whereas the latter includes both causal and spurious effects. They attributed the difference to a causal effect. Their findings suggest that although a considerable portion of the relationship between drinking and violence among youth is spurious, alcohol intoxication does have a causal effect.

#### ALCOHOL AND DIFFERENT TYPES OF OFFENSES

The evidence is inconsistent as to whether offenders are more likely to be drinking during violent crime than during property crime (Bureau of Justice Statistics, 1998; J. J. Collins &

Schlenger, 1988; Murdoch, Pihl, & Ross, 1990; Roizen & Schneberk, 1977; Welte & Miller, 1987). An observational study of police-citizen encounters found that those who were suspected of committing violent offenses were more likely to be intoxicated than those who were suspected of committing nonviolent offenses (McClelland & Teplin, 2001). This relationship was observed with controls for demographic factors. In addition, a government document based on an earlier version of the survey we used in the present study reported the percentage of offenders who were drinking at the time of their offense (Greenfeld, 1998; see also Greenfeld & Henneberg, 2001). The approximate percentage drinking for different offenses, listed in terms of likelihood of intoxication, were homicide and physical assault (41%), sexual assault (36%), robbery (33%), burglary (32%), larceny (29%), and drug offenses (18%). Finally, research has compared drinking during sexual assault and physical assault. Roizen (1997), summarizing data from published studies, estimates that 60% of sexual offenders are drinking during the offense, compared to 37% of physical assault offenders.

It is not clear from these studies whether intoxication is a causal factor in violent offenses. As suggested above, there are likely to be individual difference factors and activity patterns that lead to both drinking and the propensity to commit particular types of offenses. This is the basis for Phillips et al.'s (2007) criticism of research comparing the prevalence of drinking during violent and property crimes. Their argument implies that violent offenders may be more likely to be chronic drinkers than property offenders and therefore would be more likely to be intoxicated during any activity. It is necessary to control for prior drinking to address this problem.

We are aware of only one study of intoxication and different types of crimes that has attempted to address the issue of spuriousness (R. B. Felson, Savolainen, Aaltonen, & Moustgaard, 2008). That study compared the relationship between drinking and sober delinquency among Finnish adolescents to the relationship between drinking and delinquency (sober or not). For each type of offense examined, R. B. Felson et al. found a substantial relationship between drinking and sober delinquency, suggesting a good deal of spuriousness. For crimes of petty theft, the relationship between drinking and sober delinquency was just as strong as the total relationship, suggesting the relationship was almost completely spurious. For violence and vandalism, the alcohol-sober delinquency relationship was much weaker, suggesting the possibility that alcohol had a substantial causal effect on these offenses. For car theft and graffiti writing, the alcohol-sober delinquency relationship was slightly weaker than the total relationship, suggesting the possibility that alcohol had a weak effect.

The discussion of causal mechanisms above suggests that alcohol intoxication should lead to all forms of crime, not just crimes of violence. Individuals who are cognitively impaired, "myopic," disinhibited, or low in self-awareness should be more likely to engage in anti-normative behavior whether that behavior involves intentionally doing harm or not. In other words, alcohol may lead to deviant behavior rather than doing harm. On the other hand, there are also theoretical reasons to expect alcohol to have stronger effects on the tendency to commit some offenses than others. One might hypothesize that alcohol has stronger effects on offenses (a) that are more serious, (b) that stem from disputes, or (c) that involve personal confrontation and therefore greater risk.

Alcohol may play a greater role in serious crime than minor crime because the penalties and moral inhibitions are greater. In other words, there may be heinous acts that most offenders

will not commit unless they are intoxicated. Alcohol may, therefore, play a more important role in violent crime because violent crime is generally considered more serious. Thus one might expect that offenders who commit homicide and sexual assault are more likely to be intoxicated than offenders who commit physical assault. Opinion surveys and the sentences convicted offenders receive both suggest that these offenses are considered more serious (Rossi & Berk, 1997).

Relevant to this issue is research on the relationship between the offender's use of alcohol and the seriousness of violent incidents. Research on couples has found evidence that alcohol is associated with more serious violence and aggression (Leonard & Quigley, 1999; Stets, 1990; Testa, Quigley, & Leonard, 2003; but see Fals-Stewart, Leonard, & Birchler, 2005). On the other hand, research generally does not find a relationship between whether offenders are drinking and whether victims are injured during assaults (e.g., Abbey, Clinton, McAuslan, Zawacki, & Buck, 2002; Martin & Bachman, 1998; Pernanen, 1991; Ullman, 2003). However, alcohol may interfere with the offender's ability to successfully carry out the crime (Brecklin & Ullman, 2001). Although intoxicated offenders may be less inhibited, they are also likely to be less competent. In a violent incident, they might become a victim rather than an offender.

Another possibility is that alcohol intoxication plays a stronger role in offenses that stem from disputes. Disputes may be more likely to develop because either the offender or victim or both are drinking. Intoxicated offenders and victims may engage in provocations or behave in ways that contribute to escalation (R. B. Felson & Burchfield, 2004). Experimental evidence suggests that alcohol has a larger impact on aggressive behavior when participants are provoked than when they are unprovoked (e.g., Lipsey et al., 1997). Thus one might expect alcohol to be a more important contributing factor in homicides and assaults than other crimes. These offenses are much more likely than other offenses to stem from disputes, and they often occur during social occasions when people are drinking (Luckenbill, 1977).

Finally, one might expect that alcohol plays a greater role in offenses that involve more risk (e.g., Weisman & Taylor, 1994). Violent crimes pose more risk to offenders than non-violent crimes because they usually involve personal confrontation and greater danger. Alcohol alleviates the offenders' fear by enabling them to discount costs, and fear is more important in crimes that involve personal confrontation with adversaries who may retaliate. In other words, alcohol gives the offender "courage." Violent crimes are also more risky because the offender is more likely to be apprehended. Victims and third parties are more likely to witness the crime. These factors may help explain why clearance rates are much higher for violent crimes than property crimes (Pare, Felson, & Ouimet, 2007).

#### CURRENT STUDY

We used data from a nationally representative sample of inmates in an attempt to determine the prevalence of alcohol intoxication during different types of offenses. Because all our respondents were offenders, we could not directly examine the question of whether intoxication affects the tendency to commit crime. However, we could examine whether intoxication is more strongly related to some offenses than others. In addition, we could examine which of the theoretical arguments presented above are consistent with the patterns we observed.

We examined the presence of alcohol intoxication during the crime for the following offense categories: homicide, assault, robbery, sexual assault, burglary, theft (larceny), and drug offenses. We used drug offenses as the reference category because it is the crime in which offenders were least likely to be drinking. In addition, we suspected that the offenders' drinking when they were engaged in activities related to the drug business reflected their drinking during noncriminal activities. If this were the case, then our results could address the issue of whether intoxication is associated with crime, at least among an offender population.

According to *the seriousness hypothesis*, alcohol should play a more important role in more serious offenses. Using median sentence length as an indicator of seriousness, we would expect the following order in terms of likelihood of intoxication: homicide, sexual assault and robbery, physical assault, drug offenses, burglary, theft. According to *the dispute hypothesis*, alcohol should play a more important role in homicide and assault than in other offenses, given that these offenses typically stem from disputes. According to *the confrontation hypothesis*, alcohol should play a more important role in violent offenses than in nonviolent offenses because they typically involve personal confrontation with a victim who might retaliate or serve as a witness. Thus, alcohol effects should be relatively strong for robbery and sexual assault as well as for homicide and assault. Alcohol should also play a stronger role in burglary than in other nonviolent offenses, given that entering a residence or business poses a risk of confrontation with victims.

The argument that intoxication plays a more important role in dispute-related offenses also implies that the victim's drinking plays a role. These offenses sometimes occur because both offender and victim are intoxicated. According to this line of thinking, victims should be more likely to be drinking during dispute-related violence than during predatory offenses. In addition, the effects of offender's alcohol intoxication should be reduced if victim drinking is controlled.

Our design involved correlational data, so any causal inference about the relationship between alcohol and crime must be tentative. However, five characteristics of our design help us isolate the effects of alcohol intoxication. First, we controlled for the offender's prior arrest record and prior convictions for violence. Second, we controlled for the offender's frequency of alcohol use in the year prior to the offense. This variable provided an additional control for third variables that might be associated with intoxication and offending. Third, we controlled for the location of the incident in a commercial setting and, in some analyses, the victim's intoxication. These controls helped to rule out the possibility that some crimes are more difficult to commit in bars and other commercial locations. Fourth, in supplementary analyses, we examined dosage effects (see Ito, Miller, & Pollock, 1996). A finding that the more alcohol the offender consumed, the more likely he or she was to commit the predicted offenses would provide additional evidence that alcohol is a causal agent. It would help rule out the possibility that some situational factor was producing the relationship. Finally, our use of an inmate sample helped us rule out spurious factors that might lead to offending and drinking. With an inmate sample, individual characteristics that lead to crime generally cannot account for the relationships observed. We assumed that almost all of our respondents had some propensity to commit crime.

Note that the domain of behavior tapped in inmate data is different from the domain of behaviors examined in work based on self-report and victimization surveys. The offenses reported by inmates in state and federal prisons are likely to be much more serious. Understanding

the role of alcohol in serious offenses is important from a policy standpoint—they have the most negative consequences for victims and for society.

## METHOD

We used a nationally representative sample of inmates from the 1997 Survey of Inmates of State and Federal Correctional Facilities (U.S. Department of Justice, Bureau of Justice Statistics, and Federal Bureau of Prisons, 2000). The data were gathered from approximately 14,000 inmates in state prisons and 4,000 in federal prisons. Data collection involved computer-assisted personal interviews where respondents entered their answers into a computer in the presence of staff from the U.S. Bureau of the Census. Each inmate was assured that all responses during the interview were voluntary and strictly confidential. The surveys had high response rates: 92.8% and 90.2% for state and federal inmates, respectively. Note that the U.S. Department of Justice provides sample weights to correct for design effects and survey nonresponse. These survey weights are based on demographic and offense information obtained from official records for inmates who did not participate in the survey.

## MEASURES

*Offense type.* Respondents were asked, “For what offense(s) are you being held?” For this question, we created a series of dummy variables representing whether the offense was a homicide (including murder and voluntary manslaughter), an assault, a sexual assault, a robbery, a burglary, a theft, a drug offense, or other offense. Offense data were missing for fewer than 1% of the respondents. For those offenders who committed multiple offenses (25% of the sample), the survey provided information on the offense with the longest sentence, which typically was the most serious offense (identified as the controlling offense). Note that if offenders committed offenses that fall into multiple categories of our dependent variable, it would lead to an underestimation of effects. In fact, when we reestimated our equations omitting respondents who committed multiple offenses, the coefficients were slightly larger.

*Alcohol intoxication.* The inmates were asked, “Had you been drinking any alcohol at the time of the offense?” Respondents could answer “yes”, “no”, or “don’t know.” Approximately 36% of respondents had been drinking alcohol. Relatively few offenders (fewer than 2%) could not recall whether they were drinking at the time.

In a supplementary analysis, we examined the degree of intoxication using a measure of blood alcohol concentration (BAC) developed by Greenfeld (1998) based on this data set. His measure was based on the amount and type of alcohol consumed, the number of hours the inmate spent drinking prior to the offense, and the inmate’s gender and body weight. Inmates who reported drinking at the time of the offense were asked a long series of questions about whether they consumed beer, wine, or liquor; the type of container they used; and the amount they consumed. For example, inmates who reported drinking beer were asked about the number of cans, bottles, and mugs of different sizes; the number of pitchers; and the number of six-packs. Respondents were instructed not to double count (i.e., report both six-packs and cans of beer).

We recognize the limitations of BAC measure based on self-report data from incidents that could have occurred long ago. Some respondents cannot accurately recall the amount that they drank or the number of hours they were drinking. This is presumably why approximately 6% of the inmates had missing data on the BAC score. In addition, the measure of body weight is based on current weight and not weight at the time of the offense, and the level of intoxication is likely to be influenced by the inmate's chronic drinking and food consumption prior to the offense (Abbey et al., 2002).

Although we view the measure as a rough estimate of the level of intoxication, we think it is accurate enough to use it to create dummy variables representing the offender's approximate degree of intoxication. Our dummy variables are based on whether the inmate (a) had not been drinking alcohol (approximately 64% of offenders), (b) had been under the legal limit for driving a motor vehicle (BAC < .08%) at the time of the offense (5% of offenders), (c) had a BAC from .08% to just under twice the legal limit (BAC = .159%; 5% of offenders), (d) had a BAC from .16% to just under 4 times the legal limit (BAC = .319%; 7% of offenders), (e) had a BAC from 4 times the legal limit (BAC = .32%) to .399% (2% of offenders), and (f) was missing data on the BAC (6% of offenders) or had a BAC level that was .4% or greater (10% of offenders). When BAC levels are at .4% or greater, human activity is usually impossible, so we assume some aspect of the information reported is not reliable. We also created a dummy variable of drug intoxication. The measure of drug intoxication is based on the question, "Were you under the influence of drugs at the time of the offense?" Fewer than 2% of respondents had missing data on the drug measures.

*Prior offenses.* The offender's history of criminal behavior includes self-reported information on the number of prior arrests and whether the offender had a prior conviction for a violent crime. Offenders were asked how many times they had ever been arrested, as an adult or a juvenile, before the arrest for their current offense. To minimize the effects of outliers, number of arrests was logged in our analyses.

*Prior alcohol use.* The inmates were asked whether they drank any alcohol in the year prior to the offense and during that year, "how often did you usually drink alcohol?" Responses to this question ranged on a 5-point scale from *less than once a month* to *daily or almost daily*. We created a series of dummy variables to represent frequency of alcohol use.

*Victim intoxication.* This variable is available only for violent offenders because the survey does not ask about the victim for nonviolent offenses. Violent offenders were asked, "In your opinion, was the victim under the influence of alcohol or drugs at the time of the offense?" We created four dummy variables based on offender's responses to this question: (a) victim sober; (b) victim intoxicated on alcohol only; (c) victim intoxicated on drugs only, victim intoxicated on both alcohol and drugs, or victim intoxicated but the offender could not determine whether the victim was using drugs or alcohol; and (d) offender could not tell or remember whether victim was intoxicated.

*Location of offense.* Respondents were asked where the offense took place. We were able to distinguish whether it took place in a commercial place (e.g., in a bar, restaurant, gas station, store, office, or factory) or not (e.g., at a home or apartment or in a public space, such as at school, on the street, in a parking lot, etc.).

**TABLE 1: Descriptive Statistics**

<i>Variable</i>	<i>%</i>	<i>N</i>
Controlling offense		
Homicide	13	18,105
Assault	7	18,105
Rape	6	18,105
Robbery	14	18,105
Burglary	10	18,105
Theft	9	18,105
Drug	24	18,105
Other offenses	17	18,105
Intoxication at time of offense		
Alcohol	36	18,016
Drug	32	17,957
Prior alcohol use		
Never	35	18,100
Less than once a month	4	18,100
About once a month	5	18,100
Less than once a week	5	18,100
At least once a week	23	18,100
Daily or almost daily	28	18,100
Background characteristics		
Male	94	18,326
Black	46	18,326
Hispanic	18	18,326
White	33	18,326
Other	3	18,326
Mean age at time of arrest ( <i>SD</i> )	29.69 (9.41)	18,135
Mean years of education ( <i>SD</i> )	10.74 (2.45)	18,192
Mean number of prior arrests ( <i>SD</i> )	5.27 (8.63)	17,651
Convicted of prior violent offense	28	18,237
Offense occurred at commercial establishment	22	17,887

*Sociodemographic measures.* The sociodemographic variables include the gender, race-ethnicity, age, and educational attainment of the offender. Race-ethnicity is a series of dummy variables coded as White, Black, Hispanic, and Other. The education measure is based on the offender's highest year of school he or she had attended prior to the offense.

## RESULTS

Table 1 provides weighted means, standard deviations, and number of cases for each of our variables. In Table 2, we present our multivariate analysis. Because our outcome, type of offense, is a nominal variable involving multiple categories, we estimated our equations using multinomial logistic regression. The results show that intoxicated offenders were much more likely to commit homicide, physical assault, and sexual assault than drug offenses. For example, the odds of an intoxicated offender's committing a homicide or assault were almost 4 times greater than the odds of committing a drug offense. We observed moderate effects of intoxication on robbery and burglary and a slight effect for crimes of theft. To test for the statistical significance of other crime comparisons, we changed the reference category (analyses not shown). These comparisons revealed that offenders were significantly

**TABLE 2: Multinomial Regression Estimates: Effects of Intoxication on Different Types of Criminal Offending**

Variable	Homicide vs. Drug			Assault vs. Drug			Rape vs. Drug		
	B	SE	Odds Ratio	B	SE	Odds Ratio	B	SE	Odds Ratio
Alcohol intoxication (vs. sober)	1.280**	(.07)	3.60	1.308**	(.09)	3.70	1.174***	(.09)	3.23
Drug intoxication (vs. sober)	-0.880***	(.07)	0.41	-1.145***	(.08)	0.32	-0.826***	(.09)	0.44
Less than once a month drinking (vs. never)	0.126	(.15)		0.496**	(.17)	1.64	0.045	(.18)	
Once a month drinking (vs. never)	-0.004	(.13)		-0.029	(.17)		-0.073	(.17)	
Less than once a week drinking (vs. never)	-0.173	(.13)		-0.089	(.17)		-0.334	(.17)	
Once a week drinking (vs. never)	-0.177*	(.08)	0.84	0.063	(.10)		-0.303**	(.11)	0.74
Daily or almost daily drinking (vs. never)	-0.156	(.09)		-0.270*	(.11)	0.76	-0.417***	(.12)	0.66
Offense at commercial establishment (vs. other)	0.528***	(.08)	1.70	0.214*	(.11)	1.24	-1.247***	(.19)	0.29
Male (vs. female)	0.668***	(.12)	1.95	0.379*	(.15)	1.46	2.394***	(.31)	10.96
Black (vs. White)	-0.745***	(.07)	0.47	-0.921***	(.08)	0.40	-1.601***	(.08)	0.20
Hispanic (vs. White)	-1.156***	(.09)	0.31	-0.967***	(.10)	0.38	-2.080***	(.12)	0.12
Other (vs. White)	-0.495**	(.18)	0.61	0.136	(.18)		-0.335	(.19)	
Age at arrest	-0.221***	(.02)	0.80	-0.164***	(.02)	0.85	-0.033	(.02)	
Age at arrest squared	0.002***	(.00)	1.00	0.002***	(.00)	1.00	0.000	(.00)	
Number of prior arrests (log)	-0.434***	(.04)	0.65	0.029	(.04)		-0.581	(.05)	0.56
Prior violent conviction	0.701***	(.07)	2.02	1.092***	(.08)	2.98	0.793***	(.09)	2.21
Years of education	-0.046***	(.01)	0.96	-0.031*	(.01)	0.97	-0.039**	(.01)	0.96

  

Variable	Robbery vs. Drug			Burglary vs. Drug			Theft vs. Drug		
	B	SE	Odds Ratio	B	SE	Odds Ratio	B	SE	Odds Ratio
Alcohol intoxication (vs. sober)	0.705***	(.08)	2.02	0.582***	(.08)	1.79	0.240**	(.08)	1.27
Drug intoxication (vs. sober)	-0.203***	(.06)	0.82	-0.361***	(.07)	0.70	-0.447***	(.07)	0.64
Less than once a month drinking (vs. never)	-0.077	(.16)		-0.315	(.18)		0.087	(.16)	
Once a month drinking (vs. never)	-0.332*	(.14)	0.72	-0.233	(.15)		-0.020	(.15)	
Less than once a week drinking (vs. never)	-0.277*	(.14)	0.76	-0.140	(.14)		-0.058	(.15)	
Once a week drinking (vs. never)	-0.235**	(.08)	0.79	-0.209*	(.09)	0.81	-0.102	(.09)	
Daily or almost daily drinking (vs. never)	-0.244***	(.09)	0.78	-0.186*	(.09)	0.83	-0.057	(.10)	
Offense at commercial establishment (vs. other)	2.245***	(.07)	9.44	1.241***	(.08)	3.46	1.987***	(.07)	7.29
Male (vs. female)	0.995***	(.14)	2.71	1.109***	(.15)	3.03	-0.342***	(.10)	0.71
Black (vs. White)	-0.298***	(.09)	0.74	-1.189***	(.07)	0.30	-1.191***	(.07)	0.30
Hispanic (vs. White)	-0.890***	(.09)	0.41	-1.435***	(.09)	0.24	-1.328***	(.10)	0.27
Other (vs. White)	-0.264	(.19)		-0.697***	(.19)	0.50	-0.700***	(.20)	0.50
Age at arrest	-0.198***	(.02)	0.82	-0.037	(.02)		-0.078***	(.02)	0.92
Age at arrest squared	0.002***	(.00)	1.00	0.000	(.00)		0.001**	(.00)	1.00
Number of prior arrests (log)	-0.107**	(.04)	0.90	0.311***	(.03)	1.36	0.367***	(.04)	1.44
Prior violent conviction	1.114***	(.07)	3.05	0.191**	(.07)	1.21	0.081	(.08)	
Years of education	-0.039**	(.01)	0.96	-0.026*	(.01)	0.97	0.045***	(.01)	1.05

Note. Sample size = 16,698. Coefficients for comparison of "other" versus drug offenses not shown. \*\*\**p* < .001. \*\**p* < .01. \**p* < .05.

more likely to commit homicide, assault, and sexual assault than robbery, burglary, and theft ( $p < .001$  for all comparisons). Intoxicated offenders were also more likely to commit robbery and burglary than theft ( $p < .001$  for both comparisons). Finally, intoxication was not significantly related to whether offenders committed a homicide, assault, or sexual assault ( $p > .10$  for all comparisons).

Table 2 also shows that the coefficients for chronic drinking are almost all negative, and some are statistically significant. In general, drug offenders were slightly more likely than other offenders to be frequent drinkers. However, offenders who committed theft were similar to the drug offenders in the frequency of their drinking. Note that many frequent drinkers were not intoxicated at the time of the offense, and many infrequent drinkers were high at the time of the offense. We do not have a multicollinearity problem.

Table 2 also shows effects of the other control variables. The main patterns include the following: (a) Offenders with prior convictions for violence were more likely to commit violent offenses, indicating some degree of specialization in violence; (b) drug-related offenses were much more likely to be committed under the influence of drugs than both violent and property crime; (c) women were more likely to be incarcerated for drug offenses than men; (d) Blacks were most likely to be incarcerated for drug offenses and robbery and least likely to be incarcerated for burglary and sexual assault; (e) Hispanics were particularly likely to be incarcerated for drug offenses; and (f) educated offenders were more likely to be incarcerated for drug offenses and theft.

In Table 3, we examine whether the effects of intoxication on dispute-related violence change when one controls for the effects of victim's drinking and drug use. Approximately 39% of these inmates stated that the victim was drinking alcohol or using drugs. Recall that only inmates who were convicted of a violent offense were included in this sample.

In Model 1, we omit victim drinking (and other intoxication), whereas in Model 2, we include it. To avoid redundancy, we do not present the coefficients for the control variables. The results show that victims were much more likely to be drinking during homicide and assault than during robbery. In addition, the effect of the offender's intoxication on homicide and assault (vs. robbery) decreases substantially when victim drinking is controlled. The effect for homicide is reduced by 25%, and the effect for assault is reduced by 24%. On the other hand, victims of sexual assault are not significantly more likely to be drinking than robbery victims, and controls for victim drinking are associated with a slight increase in the effects of offender intoxication on sexual assault. Our results suggest that drinking is more strongly associated with dispute-related violence than predatory violence in part because these offenses also tend to involve intoxicated victims.

In analyses not presented, we added an interaction term (Male  $\times$  Intoxication) to determine whether the effects of alcohol intoxication on crime varied by gender. In two of the six comparisons, we observed a statistically significant interaction between gender and intoxication. The results suggested that the intoxication effect on homicide was stronger for males, whereas the intoxication effect for robbery was stronger for females. However, substantial intoxication effects were observed for both genders for both crimes.

In other analyses not presented, we examined whether problems of recall were attenuating the relationships we observed. If memory problems were influencing our results, we should find weaker effects for offenses that occurred long ago. To examine this issue, we added an interaction term between intoxication and number of years since the incident occurred. These terms were statistically nonsignificant for all six comparisons.

**TABLE 3: Multinomial Regression Estimates: Effects of Offender and Victim Intoxication on Different Types of Violent Offending**

Variable	<i>Homicide vs. Robbery</i>		<i>Assault vs. Robbery</i>		<i>Rape vs. Robbery</i>	
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 1</i>	<i>Model 2</i>
Offender intoxication (vs. sober)						
Alcohol intoxication	.570*** (.11)	0.426*** (0.11)	.471*** (.13)	.359** (.13)	.417*** (.14)	.509*** (.15)
Victim Intoxication (vs. sober)						
Alcohol intoxication		1.154*** (0.14)		.782*** (.16)		-.083 (.20)
Other intoxication		1.309*** (0.11)		.849*** (.13)		-.273 (.16)
Unknown intoxication		0.774*** (0.11)		-.110 (.14)		-.380* (.16)

Note. Sample size = 4,765. Standard errors in parentheses; coefficients for background variables not shown.  
 \*\*\* $p < .001$ . \*\* $p < .01$ . \* $p < .05$ .

#### DOSAGE EFFECTS

In our supplementary analysis, we substituted the BAC dummy variables for our dichotomous measure of drinking during the offense. The results for the intoxication variable are presented in Table 4. They reveal strong evidence for dosage effects for homicide, assault, robbery, rape, and burglary. Generally, the more intoxicated the offender, the more likely he or she committed one of these offenses versus a drug offense. The results also show that alcohol plays a strong role in homicide and physical assault even when offenders are drinking in moderation. For example, an offender who is under the legal limit for driving was almost 3 times more likely to commit a physical assault than a drug offense.

## DISCUSSION

We addressed an issue that has received limited attention in the literature: what specific offenses are associated with alcohol intoxication. Knowing the consequences of drinking is important for descriptive purpose, but it also provides information about why alcohol might affect behavior. It helps us understand whether alcohol is associated with deviant behavior, risky behavior, or behavior that generates grievances and disputes. These issues have not received much attention in the literature.

We proposed three hypotheses about the effects of alcohol intoxication based on whether it played a more important role in more serious offenses, dispute-related offenses, or offenses that involved confrontation. Our approach was to test the hypotheses by examining the overall pattern of relationships between intoxication and different crimes. Our hypothesis testing, however, is limited by the fact that offenses cannot be uniquely classified along these dimensions.

The results do not provide much support for the seriousness hypothesis. Offenders were slightly more likely to be intoxicated during physical assault than during homicide and sexual assault, even though physical assault is a less serious offense. In addition, offenders were less likely to be intoxicated during drug offenses than during burglary and theft, even

**TABLE 4: Multinomial Regression Estimates: Effects of Alcohol Dosage on Different Types of Criminal Offending**

<i>Blood Alcohol Concentration (BAC) vs. Sober</i>	<i>Homicide vs. Drug</i>			<i>Assault vs. Drug</i>			<i>Rape vs. Drug</i>		
	<i>B</i>	<i>SE</i>	<i>Odds Ratio</i>	<i>B</i>	<i>SE</i>	<i>Odds Ratio</i>	<i>B</i>	<i>SE</i>	<i>Odds Ratio</i>
Under legal limit for driving (BAC < .08%)	0.840***	(.13)	2.32	1.027***	(.14)	2.79	0.290	(.18)	1.34
Twice the legal limit (BAC .08% to .159%)	0.819***	(.14)	2.27	1.132***	(.16)	3.10	0.962***	(.17)	2.62
Four times the legal limit (BAC .16% to .319%)	1.364***	(.13)	3.91	1.430***	(.15)	4.18	1.240***	(.16)	3.45
Four or more times the legal limit (BAC .32% to .399%)	2.001***	(.21)	7.40	1.863***	(.25)	6.44	2.101***	(.25)	8.17
BAC ≥ .4% or missing	1.527***	(.09)	4.61	1.402***	(.11)	4.07	1.471***	(.12)	4.35
	<i>Robbery vs. Drug</i>			<i>Burglary vs. Drug</i>			<i>Theft vs. Drug</i>		
Under legal limit for driving (BAC < .08%)	0.283*	(.14)	1.33	-0.226	(.16)	.80	-0.490**	(.17)	0.61
Twice the legal limit (BAC .08% to .159%)	0.458**	(.14)	1.58	0.396**	(.15)	1.49	0.047	(.17)	1.05
Four times the legal limit (BAC .16% to .319%)	0.839***	(.13)	2.31	0.906***	(.13)	2.47	0.555***	(.14)	1.74
Four or more times the legal limit (BAC .32% to .399%)	1.562***	(.22)	4.77	1.093***	(.24)	2.98	0.240	(.31)	1.27
BAC ≥ .4% or missing	0.828***	(.10)	2.29	0.758***	(.10)	2.13	0.462***	(.11)	1.59

*Note.* Sample size = 16,698. Coefficients for comparison of “other” versus drug offenses and effects of background variables not shown.  
 \*\*\**p* < .001. \*\**p* < .01. \**p* < .05.

though information on sentence length implies that drug offenses are considered more serious. On the other hand, the fact that intoxication does play a greater role in violent crime than in property crime and that it plays a more important role in robbery and burglary than in theft is consistent with the seriousness hypothesis. However, these patterns are also consistent with the other hypotheses (see below).

The results provided mixed support for the dispute hypothesis. Although intoxicated offenders were more likely to engage in homicide and assault than robbery, they were not significantly more likely to engage in homicide and assault than in sexual assault. Our evidence regarding victim's intoxication suggests that it plays a greater role in dispute-related violence than in predatory violence. Victims were more likely to be intoxicated during homicide and assault than during robbery and sexual assault. The effects of intoxication on the dispute-related offenses were weaker when we introduced controls for the victim's intoxication. The results suggest that one of the reasons offender intoxication is more strongly associated with dispute-related violence than predatory violence is that the victims are intoxicated as well.

The results provide the most consistent support for the confrontation hypothesis. Intoxication was more strongly related to offenses that involve personal confrontation. Thus, homicide, physical assault, sexual assault, and robbery were more likely to be committed by an intoxicated offender than the other offenses. Burglars, who risk confrontation with victims, were also more likely than drug offenders to be intoxicated. Alcohol played the least important role in crimes of theft and drug offenses, which do not involve personal confrontation.

We suggested that the reason alcohol is associated with offenses involving confrontation is that it helps offenders handle the greater risk. They have less fear because they discount the potential costs. However, there are other explanations for why intoxication might make it easier to commit crimes involving personal confrontation. Alcohol intoxication may help offenders overcome any tendencies toward empathy (see Schmutte & Taylor, 1980). Evidence suggests that empathy is an innate response in human beings (Preston & de Waal, 2002). It could also be that when people are drinking, they are more willing to violate the rules of "cooperative face-work" or politeness, described by Erving Goffman (1955). The alcohol may reduce their reluctance to offend others in face-to-face interaction. In fact, one of the main reasons people drink is to facilitate social interaction and reduce social anxiety (e.g., Presley, Leichliter, & Meilman, 1998). R. Collins (2008) makes a similar argument, suggesting that people experience "confrontational tension"—an inhibition about disturbing face-to-face social interaction—in potentially violent situations. In sum, alcohol may help people overcome inhibitions about offending others in polite interaction or using violence in any face-to-face encounter.

Our analyses of dosage effects showed that the more intoxicated the offenders, the more likely they are to commit violent crimes and burglary. In addition, our analyses suggest that alcohol plays a role in homicide and physical assault even when offenders are drinking moderate amounts that would not prevent them from legally operating a motor vehicle. We believe that ours is the first study to suggest that even limited drinking is a risk factor for dispute-related violence.

We cannot say whether alcohol intoxication helped explain why our respondents committed a crime, given that they all committed a crime. However, one could make the argument that offenders' drinking behavior during drug activity, our reference group, is similar

to their drinking during most of their noncriminal activities. Using this line of thinking, one could argue that our results indicate the extent to which intoxication influences people with a criminal propensity to commit a crime. Such a conclusion must be tentative, however.

#### THE CAUSALITY ISSUE

We controlled for prior violence and frequency of drinking in all of our models and thus reduced the likelihood that the relationship between intoxication and crime could be attributed to differences in the characteristics of offenders who commit different crimes. Our finding of strong dosage effects also increases confidence that intoxication has causal effects. Our finding that chronic drinking was either unrelated or negatively related to offenses committed while drinking is additional evidence that our relationships cannot be attributed to individual differences between drinkers and nondrinkers. Furthermore, our use of an inmate sample helped control for spurious factors that lead to offending and drinking. Finally, the fact that experimental research has shown that alcohol has causal effects on violent behavior in the laboratory increases confidence in causal inferences.

Nonetheless, our controls for prior violence and drinking do not allow us to rule out the possibility that some situational factor correlated with both offender intoxication and particular types of offenses produced a spurious relationship. Note that this is a potential problem with all nonexperimental designs. The third variable would have to be some situational factor that would lead to intoxication and to homicide, assault, and sexual assault but not the other offenses. It would be necessary for it to have strong effects on both drinking and specific crimes, given the strong effects we observe. Its effect on drinking would have to occur close to the time of the offense, because we controlled for drinking in the year prior to the offense. It would have to be associated with quantity of drinking, given that we found dosage effects.

Perhaps the location of the offense affected the offense committed as well as the tendency to drink large quantities of alcohol. We controlled for location, but perhaps our measure was not sensitive enough. We did some additional analyses (not presented) to further examine the possibility that location could be producing spurious relationships. First, we included a more detailed measure of location with dummy variables for private places, commercial establishments, public places, and other locations. Some of these locations were associated with type of crime, but their inclusion did not alter the effects of intoxication. Whether we include the location variables or leave them out of the equation, the coefficients for intoxication are approximately the same. Second, our measure of location did not include whether the offense occurred in a bar. One could argue that bars provide greater opportunity to commit homicides and assaults than the other crimes, and people may drink greater quantities in bars than in other locations. On the other hand, one could argue that people drink smaller quantities in bars because alcohol is more expensive when purchased in a bar. At any rate, we observed the same effects of intoxication outside of commercial establishments (which included bars) as we did in other locations.

#### LIMITATIONS

Two important issues are whether results from our inmate sample can be generalized to the general population and whether they apply to less serious offenses. Some scholars have

suggested that alcohol has different effects on minor offenses and different effects on those with antisocial personalities (Fals-Stewart et al., 2005). Most of the inmates in state and federal prisons are presumably antisocial, and most of the offenses they have committed are serious. We have no way of determining whether our findings generalize to less serious offenses committed by nonoffenders.

Another issue is whether results from our inmate sample can be generalized to the general population of *offenders*. Many crimes, particularly those of a more minor nature, are not reported to the police and do not lead to incarceration. In addition, because clearance rates are higher for violent offenses than for property offenses, property offenses are under-sampled. It may also be that inmate samples were more likely to include intoxicated, care-less, opportunistic, or frequent offenders (Chaiken & Chaiken, 1990). Finally, evidence suggests there are somewhat lower rates of reporting sexual assaults than physical assaults and lower rates of reporting physical assaults involving people who know each other than physical assaults involving strangers (e.g., R. B. Felson & Pare, 2005). Thus, inmate data are likely to undersample sexual assaults and nonstranger violence.

Still, there is no reason to expect alcohol effects to differ for incarcerated offenders and those who avoid prison. Our goal was to study the relationships between alcohol and particular crimes, and we have no reason to expect that our sampling biases should affect the relationships we are investigating. In addition, research shows that key predictors of crime (e.g., marriage and employment) are similar for inmate samples and samples of nonincarcerated individuals and other high-risk groups (e.g., high school dropouts, drug addicts) (Horney, Osgood, & Marshall, 1995; Sampson & Laub, 1993; Uggen, 2000). In addition, research based on official statistics and research based on general population surveys tend to yield similar results when one takes into account that official statistics focus on more serious offenses (e.g., Hindelang, Hirschi, & Weis, 1979). These studies suggest that findings from inmate samples have some external validity. Nevertheless, we must acknowledge that the generalizability of our results to offenders outside of prison is unknown.

Another important methodological issue relates to our reliance on self-reports. Self-reports are generally used in the study of alcohol use, and their reliability and validity are generally accepted (e.g., Abbey, Clinton-Sherrod, McAuslan, Zawacki, & Buck, 2003; Del Boca & Darkes, 2003; Midanik, 1982, 1988). Note that the cases of the offenders who participated in our study had already been decided. Respondents were being asked about alcohol use before coming to prison. The alcohol use they report on the survey had no implication for their current situation. The fact that our data were obtained from *convicted* offenders may be an advantage. In addition, the survey's use of computer-assisted personal interviews may be an advantage. According to Dawson (1998), the technique is useful for eliciting information on the frequency with which respondents drink different combinations of alcoholic beverages and can help overcome reporting errors in drink size. At any rate, we assume that any problems related to memory or biased response resulted in random measurement error rather than systematic measurement error. Although offenders may under- or overreport their alcohol use, or the alcohol use of their victims, there is no strong reason to think that the bias varies by the type of offense they committed.

In sum, the literature shows that alcohol intoxication is a contributing factor for some criminal behavior, but it is not clear about which ones. Our evidence suggests that its impact is strongest for crimes involving personal confrontation and possibly disputes.

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