Alcohol Use and Intimate Partner Violence in the City of Omaha, Nebraska

Paula Kautt
William Wakefield
University of Nebraska at Omaha

Introduction

Alcohol is a common factor in incidents of interpersonal violence. According to the World Health Organization and research in the United States, alcohol is involved in a significant portion of rapes, assaults, and homicides (Fagan, 1990: 243). However, such findings are mixed, with studies indicating ranges from 40 to 87 percent of domestic assaults involving alcohol (Murphy and O'Farrell, 1997: 83; Gorney, 1989: 230). While those who abuse alcohol are more likely to be physically abusive to their domestic partners — and vice versa — (Gondolf, 1995: 275), it is commonly assumed that alcohol causes violence, a conclusion that is unsubstantiated (Gorney, 1989: 229). In fact, current empirical studies have difficulty in distinguishing whether alcohol is a contributing, resulting, or a spurious factor in relation to violence. This problem is especially true of domestic violence.

Some studies focus on alcohol use by the abusive partner while others examine victim intoxication. However, there is little research concerning how alcohol use by either affects the intensity of the incident (Miller and Downs, 1993: 138). This investigation examines alcohol consumption by victims and perpetrators and how such use affects physical injury and levels of violence. In addition, the effects of alcohol use by both parties together will be assessed as well as the general presence of alcohol.

effects of alcohol use by both parties together will be assessed as well as the general presence of alcohol. Apart from demonstrating any effect of alcohol on the severity of violence, this exploration may serve to illuminate the shadowy nature of the link between violence and alcohol.

The association between domestic violence and alcohol consumption is generally considered inconclusive (Kantor and Straus, 1987: 215-216). Although the phrase "precipitated homicide" was coined by Wolfgang to explain the prevalence of intoxicated victims, several other works demonstrate contradictory findings regarding the specific effect of either victim or assailant intoxication. Still, alcohol is considered an important correlate of domestic violence. Stout (1993), in her examination of males who had murdered their female intimate partners, revealed that 48 percent of the offenders had been drinking prior to the homicide. Additionally, 21 percent of these males believed that their victim had been intoxicated at the time she was killed (Stout, 1993: 89). Clearly, such a potentially volatile and lethal relationship merits further examination. The purpose of this investigation is to determine if the presence of alcohol affects the severity of attack or injury in domestic violence incidents.

Related Research

Fagan (1990) examines and criticizes many hypotheses linking alcohol to violence, contending that its presence does not directly or consistently lead to violence. He divides the various theories into four categories: biological/physiological, psychopharmacological, psychological, and sociological/cultural (Fagan, 1990: 248).

The Biological/Physiological Perspective. The first perspective rests on the premise that brain and glandular functions are temporarily altered by alcohol consumption. While this concept is widely accepted, the process by which these alterations take place is relatively unknown, making theory testing difficult. Additionally, as Fagan points out, when subjects are tested, they are generally not representative of the population (mainly college students), and are given only minimal doses of alcohol, which produces mixed results (Fagan, 1990). Thus, the existing physiological research provides little

conclusive evidence demonstrating that alcohol affects aggression in either a positive or negative manner.

The Psychological Perspective. The psychological perspective, conversely, contends that alcohol consumption causes personality changes that result in violence. This perspective holds two distinct and opposing viewpoints: (1) that alcohol produces temporary personality changes that facilitate violence and (2) that the changes produced inhibit violence. The first assumption is one of disinhibition, that the emotional or moral controls of individuals are relaxed with intoxication. Conversely, the second implies increased inhibition is brought about by the "numbing" of aggression. Each viewpoint, by itself, has been widely discredited (Fagan, 1990: 260). However, when taken in combination with other stimulus such as sexual arousal, external pressures (economic, interpersonal, et cetera) or depression, they gain somewhat more credence. Several studies in this area support a positive relationship between aggression and alcohol consumption. Unfortunately, these studies were conducted mainly in controlled settings with a homogenous group (college students) unlikely to be exposed frequently to the majority of variable external pressures (Fagan, 1990: 260).

Another popular psychological perspective is that alcohol merely reduces the threshold of threat perception. Thus, a situation that a sober person would find innocuous would be perceived as threatening by an intoxicated individual. Here, alcohol consumption is seen as reducing one's ability to perceive the consequences of his/her actions. While this theory has the most empirical support of all the psychological explanations, it does not take into account cross-cultural and sub-culture variation in alcohol consumption and the expectations thereof.

The Societal Perspective. Examination of the interrelationship between culture, alcohol consumption, and violence is the realm of the sociological/cultural perspective. Here, social influences and expectations affect the behavior and allow for the disavowal of undesirable social behaviors, such as violence. However, in other cultures, such as the Camba of Bolivia (Fagan, 1990: 271), there is no association between aggression and alcohol.

As another example, Parker (1993) puts forth three societal types in relation to alcohol. These are dry, wet, and mixed drinking

cultures.[1] Through analysis of national female homicide rates, he reports a significant relationship between female violent victimization and alcohol use for mixed drinking cultures (Parker, 1993:120). Since the United States is considered a mixed drinking culture, Parker contends that female victimization in the United States is directly affected by alcohol consumption.

Often alcohol is used as a justification for socially inappropriate or unacceptable behavior. This is based mainly on the violator's expectancy that the infraction will be excused because he/she has been drinking. Surprisingly, alcohol consumption by victims is found to have an inverse effect. More responsibility for a violent incident is attributed to the drinking victim than the non-drinking victim. The perception that alcohol use leads to aggressive and provocative behavior is one proposed explanation for this artifact (Dent and Arias, 1990: 186).

Specifically in the case of domestic abuse, intoxication provides the means for excusing or "normalizing" the relationship between victim and offender. The partners' image of themselves and their relationship as "healthy" is preserved by blaming the violence on alcohol (Gorney, 1989: 231). This facade extends to others' perception of the abusive relationship as well.

Other social influences affect the perception of alcohol and violence. For example, prior research indicates that alcohol use by either party serves as a legitimizing factor for violence. Responsibility attributed to violence male intimate partner is reduced when alcohol is present. Conversely, when the female victim is intoxicated, she is deemed more responsible for the situation than when the victim is sober (Dent and Arias, 1990: 186).

To test for the presence of a gender effect, Dent and Arias (1990) conducted a study of how alcohol presence affects observer evaluations of domestic violence incidents. All violence perpetrators were rated more negatively than all victims. However, alcohol use by the victim was viewed as more of a legitimizing factor for violence than perpetrator use. In other words, a drinking perpetrator was attributed less responsibility for the violent incident than

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[1]Dry drinking cultures highoy regulate the consumptionof alcohol. Wet drinking cultures socially integrate alcohol use into daily life. Mixed crinking cultures, as the name suggests, have aspects of both.

sober counterparts while a drinking victim bore more responsibility than sober counterparts. This effect appears to be situational rather than gender specific.

However, the Dent and Arias study did reveal some gender effect. Male victims of violence were considered to be more responsible for the incident when they had been drinking than female victims. In addition, the gender of the evaluator made a difference in how the scenarios were evaluated. Male evaluators were less approving of drinking women — independent of her role as the perpetrator or victim — while female evaluators were less approving of violent women independent of whether alcohol was present (Dent and Arias, 1990: 189).

The Psychopharmacological Perspective. Similar to the first perspective, psychopharmalogical theories of the relationship between violence and alcohol use the biological perspective as a partial explanation. It is paired with the psychological perspective so that the main thesis is that the interaction of both theories produces violence when alcohol is present. Thus, all of the factors of each perspective merge, suggesting that it is their combination that produces alcohol-related violence. Yet again, there is little support of a linkage between physical of psychological responses to alcohol consumption and violence.

Domestic Violence Power Theory. Additional to the theories outlined by Fagan, Gondolf (1995) proposes domestic violence power theory, which specifically addresses the link between alcohol and violence. A domestic violence specific theory, power theory explains the relationship between alcohol and domestic violence as symptomatic of a greater problem. Here, both alcohol use and abuse reflect the perpetrator's need for power. The abuser fulfills this need by exhibiting behaviors he perceives as "manly" and demonstrative of power and control — alcohol use and violence for example — thereby reinforcing the perpetrator's fragile masculinity. In this instance, violence and alcohol are not causally linked (Gondolf, 1995: 276). The findings of Kantor and Straus (1987: 224) support this theory, demonstrating that a combination of alcohol use, financial status, and approval of violence is the best predictor of domestic assault.

Conceptual Assessment

None of the empirical studies demonstrate a causal relation of alcohol to violence. While it is clear that aggression can increase with the presence of alcohol, it can also decrease. Additionally, there is no tangible link to biological, psychological, psycho-pharmacological, or cultural factors to explain either. Moreover, none of these proposed linkages address the competing explanations for the apparent relationship, such as reverse causation[2] or that the relationship is simply spurious (Cook and Moore, 1993: 154).

Part of the problem is measurement. Capturing the effects of alcohol is inherently difficult since they differ from person to person. Factors such as body weight, genetic predisposition, tolerance levels, et cetera, all influence how alcohol will effect the individual. As alcohol can also be considered a situational characteristic, one must additionally take into account the situational factors that coincide with the alcohol consumption (Weis, 1989: 147)., further adding to the complexity of its link to violence. This makes the establishment of any type of causation difficult. One purpose of the present examination is to shed some light on the nature of this relationship.

Definitions of Domestic Violence

A major problem with intimate partner violence research is defining exactly what constitutes domestic violence. One common scheme requires physically violent acts that occur more than once.[3] Conversely, others define domestic abuse as any physical victimization suffered by an adult female at the hands of her male intimate partner. Still others describe it as deliberate, serious, and repeated physical injury from a woman's spouse or as a woman being "repeatedly subject to any forceful or psychological abuse by a man in order to coerce her to do something he wants her do to without any concern for her rights' (Johnson, 1987: 20-21).[4] Thus, some definitions require repeat victimization while others do not. Some require physical victimization or injury while others allow for verbal or psychological abuse. Additionally, some are gender specific regarding per-

[2] The decision to commit violent acts causes alcohol use.

[3] Straus' scheme entails any or all of the following repetitive acts: throwing things at one's spouse; pushing, shoving, grabbing, alapping; kicking, biting, or hitting with a fist; hitting or trying to hit with something; beating up; threatening with a knife or gun; using knife or gun (Straus, 1978: 445).

petrator and victim. As a result of this definitional variety, the findings of the existing domestic violence studies are varied and mixed (Johnson, 1987: 22).

The data sets used for this investigation avoid the gender and relationship specifications as well as the multiple incident requirement. However, because of the sources and method of data collection, they are necessarily limited in the nature of incidents included.

The Data Sets

The data sets used here comprise non-aggravated misdemeanor domestic assaults for Omaha, Nebraska. The focus of this investigation is the Morehouse Research Institute data set. Following this, the Dunford et al. Data set provides for a supplementary comparison. The background of the city and each data set are described below.

The City: Omaha Nebraska.

According to the 1990 census, the city of Omaha, Nebraska, had a population of 335,795. With regard to race, 83.9 percent of the population were Caucasian, 13.1 percent were African American, and 2.9 percent were Hispanic. Additionally, 1.1 percentwere Asian and .7 percent were Native American.

82 percent of the population were high school graduates, and 23.1 percent hae a bachelor's degree or higher. Omaha hae a 4.7 percent unemployment rate. 76.3 percent of the general population were employed for 35 or more hours per week. When disaggregated by gender, 82.6 percent of males were employed for 35 hours or more per week as were 69.6 percent of females. The median annual income for males was $25,908 and for females is $17,710.

The Morehouse Data Set

Background. The Morehouse Omaha data set was gathered as part of a large, ongoing study conducted by the Morehouse Research Institute (MRI) in order to evaluate the Atlanta Police Department's Domestic Violence Intervention Unit. Omaha was selected as the

[4]Notice that these definitions are gender specific in regard to victim and perpetrator. While ommonly reported victims of intimate partner violence are female, there are substantial numbers of male victims as well. There is no real way to estimate these numbers as male domestic victimization is vastly underreported.

major city for comparison in this study. To date, this project is still in progress.

To facilitate this comparison, police reports of domestic violence were manually coded in order to compile a data set comprising the entire Omaha non-aggravated misdemeanor intimate partner violence population. This entailed manual review of the paper police files from 1990 to 1995. Previous years were unavailable in hard copy format. Rather, they were obtainable only as microfilm. Due to this and other practical constraints, data collection was terminated at 1990. The Morehouse Omaha data, however, lists the complete population of police reported, non-aggravated misdemeanor domestic violence incidents from 1990 to 1995. This completeness of data has several benefits. Primarily, there will be no sampling error associated with the data set as it is the entire population. Additionally, any year-to-year variations or fluctuations should be smoothed out by the five-year period covered. Finally, each case in this set comes from a complete police report, minimizing problems with missing data.[5]

Limitations. One primary limitation is the omission of the non-aggravated misdemeanor incidences. As noted by the researchers who gathered this data, while such an exclusion was necessary to maintain the operational definition of domestic violence, the sometimes subjective nature of the distinction between aggravated and non-aggravated boiled down to a "judgment call" by the responding officer. As a result, there often appeared to be little actual difference, at least in the reports, between cases categorized as aggravated and those slated as non-aggravated.

Another limitation springs from the source of the data itself. One problem is the quality of the police reports. The researchers indicated that report quality was at its best for 1995 and degraded steadily in years prior to that. Additionally, as the information was gathered retroactively from police reports, there was no opportunity to obtain offender or victim-specific demographic data that was not present in the police report. While it would be possible to glean some patterns by merging census data with offense locations, for the purposes of this study it would result in the "ecological fallacy" of apply-

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[5]The exception to this is in weapon type. Often, the type of weapon/force used could not be substantiated as the offender was not present and/or the victim was unsure.

ing macro-level data to micro-level analysis. Thus, there is no way to measure victim or offender education, employment status, or income for example.

The Current Investigation

Hypothesis. In cases where alcohol is present, we predict that violence will be more severe than in cases where no alcohol is present. We expect this to hold true regardless of which party — or if both parties — is using alcohol. This hypothesis assumes that alcohol has a causal relationship with physical violence and its severity.

While there is no conclusive evidence that alcohol has a causal effect on violence, there are studies that support this contention. For example, there is evidence that interventions decreasing alcohol use reduce violent crime. One documented example of this is Norway's nine-week strike by alcoholic beverage distributors, which temporarily shut down the alcohol trade. A decrease in violent incidents coincided with this that could not be explained as a general downward trend (Cook and Moore, 1993: 151-153). In addition, a recent study by Cook and Moore (1993) suggests that interventions, such as an increased alcohol tax, could reduce violent crimes. The authors saw this as conclusive proof that alcohol use causes violence (Cook and Moore, 1993: 156-157).

If alcohol is a causal factor, one would expect violence levels to be more severe with its presence. For example, one causal linking hypothesis portends a disinhibition effect of alcohol which enables individuals to violate societal norms. It logically follows that this should also extend to the type and severity of violence. For instance, if an offender is incensed yet sober, he/she may attack the victim, quickly realize the damage, causing the anger to dissipate, and discontinue the violence. However, if the perpetrator is intoxicated, the associated disinhibition could impair his/her ability to realize the consequences of the attack. Thus, the violence continues until the anger is exhausted. Therefore, levels of violence intensity are expected to increase with perpetrator intoxication.

Additionally, we expect that victim alcohol use will have a significant effect on the level of violence. In a recent study, Miller and Downs (1993) discovered that women with alcohol problems[6] expe-

[6]These are defined as being enrolled in alcohol treatment programs or in court-ordered alcohol abuse programs as a penalty for drunk driving.

rienced higher violence levels perpetrated by their intimate partner than women without such alcohol problems.[7] This is strong evidence justifying the inclusion and test of the effects of victim intoxication on domestic violence.

Given the above reasons for expecting relationships between alcohol use by the offender and victim individually, it naturally follows that the same should hold true when both are intoxicated. Additionally, Saunders (1992) contends that alcohol consumption by both the victim and the perpetrator will facilitate violence through mutual hostilities and reduced inhibitions. This state would therefore enhance the likelihood of the eruption of violence.

The Data

The focus of this research is intimate partner violence and the effects alcohol may have on its severity. Thus, while the Morehouse data set contains information on family violence,[8] this information is excluded from the analyses since it is not relevant to the investigation at hand.

The Morehouse data comprises all police-reported, non-aggravated misdemeanor domestic violence cases from 1990 to 1995. For this data set, anything that was not categorized by the police as domestic violence was excluded from the analysis.[9] This leaves a total of 2,253 viable cases in the Morehouse data, out of 2,895.

Dependent Variable. For the Morehouse data set, there are three dependent variables that capture various aspects of violence severity. The first is a simple yes/no dichotomy addressing whether or not the victim was injured. This demonstrates the prevalence of physical versus verbal abuse as well as some inferences of severity. The second variable is an ordered listing of the type of physical injury sustained by the victim.[10] This gives a specific indication of the severity of abuse suffered. A third measure is the type of weapon/vio-

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[7] These women were drawn from women's shelters and random households.

[8] This is categorized as child abuse and neglect, parental abuse, elder abuse, and/or sibling conflict.

[9] For this set specifically, this includes family violence and "other" violence.

[10] These are: 1=none, 2=bruises and/or contusions, 3=cuts, abrasions, and/or lacerations, 4=stab wounds, 5=gunshot wounds, and 6=other. As several of the cases were missing this information (34 percent), these cases were excluded in the analyses with this measure as the dependent variable. Thus, the total number of cases used in those analyses is 1,464.

lence used by the perpetrator.[11] This allows for detection of changes in offenders' decisions in relation to alcohol presence.

Independent Variables. These are the four measures concerning alcohol in the Morehouse data set. These are use by the victim, use by the perpetrator, use by both participants, and a situational variable accounting for the general presence of alcohol. These variables are mutually exclusive. The four alcohol variables are formatted in a simple yes/no dichotomy and will be utilized as dummy variables. The alcohol presence will be excluded to serve as the reference category, while the other three will be entered into the regression.

Control Variables. Several factors are considered basic to research on intimate partner violence. These include age, income, employment, and education level of both the victim and the perpetrator as well as the type of relationship that exists between them (Johnson, 1987: 38). For example, studies from Gelles (1972) onward have found an inverse relationship between the perpetrator's level of education and the incidence of abuse (Johnson, 1987: 41). Nunes-Dinis and Weisner (1992) found that of people arrested for violent offenses, males had a higher proportion of alcohol presence than females. The authors conclude that drinking and violence interactions appear to be gender related, thereby justifying inclusion of a gender measure. Additionally, married offenders were likely to have both alcohol present and violent arrest offenses. This effect disappeared when domestic violence cases were removed from the sample. This further demonstrates the importance of controlling for victim/offender relationship (Numes-Dinis and Weisner, 1997: 129-142). Thus, in order to meaningfully evaluate the impact of alcohol on domestic violence, these factors will be controlled for.[12]

Results

Frequencies

The Morehouse Data. For the first dependent variable, the physically abused dichotomy, the frequencies indicate that the vic-

[11]These are: 1=physical force, 2=blunt instrument, 3=sharp/piercing, 4=handgun, 5=other, and 6=unknown.

[12]As it was gathered from the actual police reports themselves, the Morehouse data does not contain measures of education, income or employment status. However, as this is the complete population rather than a sample, this drawback is counteracted and complemented by the use of Dunford et al. set.

tim was physically abused in 1970 (87.4 percent) of the cases. For this variable the missing data was negligible at 51 (2.3 percent) cases. The second dependent variable, type of victim injury, the most common was bruises and contusions (38.0 percent) followed by cuts, abrasions, and lacerations (26.0 percent) and other (16.2 percent). Again, missing data was not a major obstacle as few cases did not have injury data (3.2 percent).

The frequencies for the final dependent variable, type of weapon/force, reveal that the most common attack is physical force (22.0 percent) followed by stabbing (16.4 percent) and blunt instrument attack (10.4 percent). Weapon/force type used is missing from 34 percent of this data set. Therefore, when this is analyzed as the dependent variable, the cases missing the weapon/force information are excluded from the analysis.

The distributions of the main independent variable, alcohol, indicate that its presence was relatively common. Both victim and offender were intoxicated in 331 (15.8 percent) cases. The offender alone had been using alcohol in 415 (19.9 percent) of the violent incidences. Conversely, the victim only had been drinking in 109 (5.1 percent) cases. Thus, alcohol. was presen in 40.8 percent of the cases of police-reported intimate partner violence.

The majority of the offenders fell between the ages of twenty and forty with age data missing for 139 (6.2 percent). The majority of the victims were between the ages of 19 and 38. Unlike the offender age information, there was minimal missing age data for victims (21 cases or .9 percent).

In regard to race, the majority of the offenders were African American (51.4 percent), followed by white (41.4 percent). Offender race data were missing in 74 cases (3.3 percent). Oddly, the majority of the victims were white (48.5 percent), followed by African-American (44.0 percent), confounding the principle that violent crime is intra-racial. Race data was missing in 87 cases (3.9 percent). African Americans are vastly over-represented in the domestic violence population as compared to the 1990 Census population for Omaha (13.1 percent).

In 67.4 percent (1518) of the cases, the victim and the perpetrator were living together. There was minimal missing data for this variable (1.7 percent). The offenders were overwhelmingly male (81

percent) while the victims were mainly female (79.8 percent)[13] Most of the victim-offender relationships fell into either dating (41.7 percent) or spousal (35.0 percent). The balance were ex-dating (12.7 percent), ex-spouse (4.8 percent) and house-mate (3.5 percent).[14]

The frequency distribution among police shifts[15] reveals that, indeed, of the three shifts, more incidents occurred during "C" (47.3 percent) than any other. However, "A" and "B" shifts combined comprise 51.3 percent of the total cases. The presence of these cases enables the capture of incidents neglected by the Dunford data. This is particularly relevant as it is possible that alcohol may have varied effects on violence depending upon the time of day

Regression

The variance Inflation Factor tests indicated severe multicollinearity problems among the race, gender, and relationship variables. As a result, these variables were collapsed in a variety of ways. Specifically, spouse and ex-spouse as well as dating and ex-dating again produced extreme collinearity. Additionally, one gender variable, gender of the victim was used in the regression,[16] and the racial variables were collapsed into a simple white/non-white variable. Once these modifications were made, both the Condition Index and Variance Inflation Fact tests revealed no further collinearity.

The baseline regression on the presence of injury was significant (.01) and explains 1.52 percent of the variance.[17] Victim/offender cohabitation was significant as were the relationship variable offender age and the police shift during which the incident

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13 The slight discrepancy between the victim and perpetrator numbers is explained by missing data. there was one variable measuring victim gender and one measuring offender gender. The victim data was missing in only twelve cases while the offender data was missing in thirty cases.

14 When these variables were later collapsed into dating/ex-dating and spouse/ex-spouse because of multicollinearity problems, the frequencies were: dating/ex-dating 55.2 percent and spouse/ex-spouse 39.9 percent.

15 The Omaha police shifts are "A"=Midnight to 8 a.m.; "B"=8 a.m. to 4 p.m., and "C"=4 p.m. to Midnight.

16 Since the overwhelming majority of the offenders were the opposite gender of the victim, it is understandable that this produced collinearity and thus it is also reasonable to exclude one of the measures.

17 Here, while neither the dating/ex-dating nor the spouse/ex-spouse variables were significant, the regression containing the dating/ex-dating variable had a slight better R square (.025) than the one containing the spouse/ex-spouse (.024).

occurred. Of the significant variables, all but cohabitation had a negative relationship with the presence of injury. The Betas indicate that of these three, cohabitation had the most influence on the variance.

Here, the baseline regression contain only the control variables on type of injury was also significant (.01), but revealed a disappointingly low R square of .038. However, the measure of victim/offender cohabitation, the gender of the victim and the relationship variables were all significant (.05)[18] Of these significant variables, only the spouse/ex-spouse yes/no dichotomy had a positive relationship with the type of injury. The Beta weights indicate that of these significant variables, the relationship variables are the most influential.

The final baseline regression was significant (.01) and concerned the effects of the control variables on the type of force/weapon used in the violent incident. The R square indicates that these variables explain 5.5 percent of the variance. Here, only victim/offender cohabitation and gender of the victim were statistically significant. The cohabitation variable had a negative relationship and the gender variable had a positive association with the type of force used. Of these two, the Betas indicate victim gender to be the more influential variable.

For the significant regression including alcohol presence on injury presence as the dependent variable, the same results as the chi-square were reflected. With demographic variables controlled, alcohol use by both (.01) was statistically significant. This had a positive relationship with the presence of abuse and the Betas indicate this to be the second most important significant variable. This indicates that alcohol use by both parties increases the likelihood of the presence of injury. The R square reveals that only 3.3 percent of the variance is explained by these variables. This is a modest improvement over the control variables alone.

In regard to the type of injury, the pattern of influence revealed by the statistically significant multivariate regression was the same as indicated by the chi-square. Alcohol use by the victim and by

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18Here both dating/ex-dating and spouse/ex-spouse were statistically significant (.01). The regression containing the spouse/ex-spouse variable explained slightly more of the variance (3.0 percent) than did the regression containing the dating/ex-dating variable (2.8 percent).

both parties was statistically significant (.05). Here, both significant alcohol variables had a negative relationship with extent of injury. The Betas indicate alcohol use by both to be the second most important significant variable and alcohol use by the victim to be the least important. Additionally, with the inclusion of the alcohol variables, offender race becomes significant (.05). The R square remained disappointingly low, explaining only 4.0 percent of the variance. However, this is improvement over the R square of the control model.

The regression, including the alcohol variables on the type of force/weapon used was statistically significant, but revealed that none of the additional variables had significance. However, their inclusion did improve the R-square from .051 to .056.

Table 1
Multivariate Regression on Presence of Abuse

Variable	Unstandardized Coefficient	Standard Error	T Score	Variance Inflation Factor
alcohol use by victim	.0565	.0328	1.722	1.061
alcohol use by offender	.0327	.0182	1.72	1.110
alcohol use by both	.0826	.0206	4.007*	1.152
victim white/non-white	-.0154	.0216	-.715	2.401
offender white/non/whie	.0032	.0221	-1.409	1.044
victim age	.0000	.0011	.024	1.981
offender age	-.0021	.0010	-2.034*	1.947
gender victim	-.0307	.0189	-1.625	1.092
police shift	-.0113	.0080	-1.409	1.044
vicetime offender cohabitation	.0743	.0156	4.744	1.060
spouse/ex-spouse	-.0134	.0148	-.904*	1.089
dating/ex-dating	.0209	.0146	1.427	1.089

*Significant at .05 or better F=5.674 RSquare=.03305

Logistical Regression

The appropriate follow-up statistical tool to measure the influence of alcohol on the type of injury and type of force would be

ordinal Logit since these dependent variables are ordered rather than continuous — violating the continuous dependent variable assumption of OLS regression. However, due to practical limitations, we were unable to perform these analyses.

This was not the case for the presence of injury. As this dependent variable is dichotomous, the most appropriate statistical tool to use in its evaluation is Logistical Regression. The baseline Logit indicated that victim/offender cohabitation, offender age, and police shift[19] were all significant influences on the presence of injury. When the alcohol variables were entered into the Logit equation, alcohol use by both parties was found to be a statistically significant (.01) influence on the presence of injury.

Table 2
Multivariate Regression on Severity of Abuse

Variable	Unstandardized Coefficient	Standard Error	T Score	Variance Inflation Factor
alcohol use by victim	-.3962	.1808	-2.191*	1.059
alcohol use by offender	.0065	.1000	-.065	1.108
alcohol use by both	-.3009	.1129	-2.664	1.149
victim white/non-white	-.0017	.1194	-.015	2.431
offender white/non/whie	.2460	.1221	2.015*	2.474
victim age	-.0089	.0062	-1.433	1.992
offender age	-.0050	.0058	-.861	1.954
gender victim	-.1831	.1033	-1.772	1.090
police shift	.0233	.0442	.529	1.042
victim offender cohabitation	-.2882	.8555	-3.370*	1.061
spouse/ex-spouse	.4048	.0810	4.995*	1.098
dating/ex-dating	-.3649	.0803	-4.545*	1.088

*Significant at .05 or better F=6.8429 RSquare=.03874

[19] Specifically, if an offense occured during shift "A" it had a positive, statistically significant effect on the presence of injury.

Table 3
Multivariate Regression on Type of Weapon/Force

Variable	Unstandardized Coefficient	Standard Error	T Score	Variance Inflation Factor
alcohol use by victim	-.0988	.2019	-.490	1.059
alcohol use by offender	-.1301	.1116	-1.166	1.153
alcohol use by both	-.2053	.1180	-1.740	1.172
victim white/non-white	-.1422	.1310	-1.085	2.361
offender white/non/white	-.0971	.1346	-.722	2.401
victim age	-.0036	.0068	.531	1.961
offender age	-.0100	.0063	1.583	1.923
gender victim	.6506	.1054	6.172*	1.151
police shift	-.0296	.0491	-.603	1.054
victim offender cohabitation	-.1919	.0949	-1.021*	1.065
spouse/ex-spouse	.0903	.0899	1.004	1.084
dating/ex-dating	-.1197	.0886	-1.352	1.079

*Significant at .05 or better F=6.373 RSquare=.0563

Comparison

The purpose of using the two data sets in tandem is to overcome the limitations of each. We feel that the strengths of each data set complement and counteract the weaknesses of the other. In addition, since both data sets use the Omaha Police Department's operational definition of domestic violence, there should be minimal variation between the two sources in regard to what is classified as an incident of intimate partner violence. This avoids the definitional problems of previous research. Moreover, this pseudo-time series comparison can discern any temporal patterns or changes in the Omaha domestic violence population of incidents in regard to the relationship between alcohol and domestic violence over the past decade. Additionally, any discovered relationships present in both populations would be indicative of a stable association between alcohol and domestic violence rather than a spurious one.

The Dunford *et al.* Data

Background. From 1981 to 1982, Lawrence Sherman and Richard Berk conducted what came to known as the Minneapolis Domestic Violence Experiment. Its principle objective was to determine how police intervention affected domestic violence incidence and recidivism — finding that arrest was best for preventing domestic violence recidivism. With the release of this conclusion and pressure from feminist and women's groups, several jurisdictions adopted mandatory arrest policies for all domestic violence cases (Gelles, 1996: 30, 32). However, as this was only a single investigation, the study required further exploration and subsequent replication before it could be widely accepted in the academic community.

As a result, the National Institute of Justice funded six replications of the Minneapolis experiment, one of which was conducted in Omaha, Nebraska. It is this replication that provides the comparison data. Conducted from 1987 to 1987 by Franklyn W. Dunford, David Huizinga, and Delbert S. Elliott, this sample comprises 577 misdemeanor domestic assault cases. In order to be included in the study, these incidents had to occur between 4:00 p.m. and midnight ("C" Shift) and meet specific eligibility requirements.[20] Additionally the researchers conducted victim interviews one week, six months, and one year following the reported incident.

Limitations

While the investigators were very thorough in designing a comprehensive post-incident interview instrument, their final results were plagued with missing data. This stemmed mainly from follow-up interview problems. Like the study it replicated, The Dunford study was beset with lack of victim participation in follow-up interviews. Only eighty percent of the victims completed the initial one-week follow-up interview (Dunford *et al*, 1990: 189).

Additionally, by limiting its sample to only offenses that occurred during "C" shift, the Dunford data leaves untouched a substantial portion of the domestic violence population. Thus, any possible differences between domestic violence events that occur at different times of the day would remain undiscovered.

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[20]These were (1) established probably cause for an arrest for misdemeanor assault, (2) at least two people involved (an offender and a victim), (3) both parties of the assault were 18 years old or older, (4) the participants had lived together at some time during the year preceding the assault, (5) the suspect had no outstanding warrants.

Procedures for Constructing Variables

The Dunford *et al.* data were not initially in a format that allowed for each analysis or comparison to the Morehouse data set. For both data sets, race and victim/offender relationship needed to be broken down into simple dichotomies to be interpreted.[21]

As the actual time of offense was listed in the Morehouse data, there were as many possible values for this variable as there are minutes in the day. Subsequently, since the Dunford data included only those offenses occurring during police shift "C," it was necessary to isolate the police shifts of the Morehouse data incidents. This also allowed for evaluation of the importance of time of day to the alcohol/violence nexus.

To make the Dunford *et al.* data more comparable to the Morehouse data, the victim/offender relationships were collapsed from fourteen variables to nine. Measures such as father, mother, stepfather, and stepmother were collapsed into a measure of parent. Similarly, brother and sister were merged into one measure of sibling.

Similarly, the original variables in the Dunford et al. data set for violence severity required recoding into an ordinal scale before they could be used as a dependent variable. Inversely, the original measures of race and ethnicity as well as victim offender relationship required conversion from a categorical variable into a series of dichotomous dummy variables indicating the racial category of the offender and the victim.

The Data

As with the Morehouse data set, for the Dunford data set non-intimate partner violence was excluded from the analysis. Thus the number of cases drops from 577 to 552. Moreover, since only the first of the three interviews comprising the Dunford data concerns the actual reported offense, we use only the one-week subset of the Dunford data in order to capture the characteristics of the police-

[21]Since these measures are simply categorical, they msut be entered into the regression as dummy variables. Thus, instead of two measures for victim/offender relationship, there became eighteen yes/no dichotomies. These are: house-mate, spouse, dating, ex-spouse, parent, sibling, acquaintance, and child. There are two of each — one for the victim and one for the perpetrator. Similarly, for victim and offender race/ethnicity, instead of two categorical variables, there became either dichotomous dummy variables. These are: white,black, Hispanic, and Asian. Again, there are two of each — one for the victim and one for the perpetrator.

reported violence incident.[22] Additionally, as one-week follow-up interviews were conducted for only eighty percent of the cases in the Dunford data set, pertinent data for a substantial portion of the cases is missing. As a result, the cases with the missing data were dropped from the analysis. This further reduces the number of usable cases in that data set to 448.

For the Dunford data, there are two dependent variables measuring the severity of abuse. The first is a simple physical injury/non-injury dichotomy. Again, this gives a rough estimate of the prevalence of physical injury versus mere threats of injury or verbal abuse.[23] The second is an ordered listing of the possible forms of offender action against the victim recorded in the Dunford study.[24] Additionally, the Dunford data contains the same four measures of alcohol presence for use as the main independent variable. Again, these variables are mutually exclusive.[25]

Frequency Distributions

The frequency distribution of injury reveals that a majority of the cases in the sample (79.9 percent) resulted in physical injury to the victim. This is somewhat lower than that found in the Morehouse data. The dispersion by type of injury indicates that the victim being "beaten up" was most common (30.6 percent) followed by "pushed/shoved/grabbed' (17/4 percent), "tried to kill" (16.5 percent, and "hit with something" (15.2 percent).

There are noticeable differences in the distributions of the main independent variables between the two data sets. Here, the frequencies indicate higher incidence of offender alcohol use (32.6 percent in the Dunford Data as compared to 18.4 percent in the Morehouse data), but lower instances of use by both parties (5.8 percent as com-

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[22]As mentioned previously, there are also six month and one year data sets that correspond to the follow-up interviews. We use the data from the interview closest to the reported incident since it is this session that directly addresses the incident.

[23]As these incidents are police-reported, it is not expected that the data will capture psychological abuse.

[24]These are: 1=threat, 2=throw something at victim, 3=push/shove/grab, 4=hit with hand, 5=bite/kick, 6=hit with something, 7=beat up, 8=stab or cut, 9=shoot, 20=tried to kill.

[25]It is important for the variable to be mutually exclusive so that they can be used together in the regression analysis. Were these measures notmutually exclusive, not only would it confound the result through duplication, but it would also produce severe probelms with multicollinearity.

pared to 14.7 percent). Yet, alcohol use by the victim was relatively comparable for both data sets (3.8 percent and 4.7 respectively). Overall, however, the presence of alcohol in any form is roughly equivalent between the two sources (42.2 percent and 37.8 percent respectively).

The most common offender to victim relationship was husband (42.9 percent) followed by lover/boyfriend (33.9 percent). Distantly behind that was ex-lover/boyfriend (13.7 percent). These percentages are nearly identical to those found in the Morehouse data. However, this variable demonstrated a problem with skewness. Again, victims were overwhelmingly female (95.8 percent) with the majority of the offenders as non-white (52.2 percent) and the majority of victims being white (54.1 percent). Most perpetrators and victims were between the ages of 18 and 37. All of these distributions are highly similar to those found in the Morehouse data.

In regard to the control variables, some useful variables are included in the Dunford data that are not present in the Morehouse data. For example, the most common offender education level was that of high school graduate (44.6 percent) followed by some high school (11.6 percent for eleventh grade and 10.0 percent for tenth grade). This is substantially lower than the Census estimate of 82.6 percent of the population having a high school diploma. Thus, for the Dunford data set, the educational level was substantially lower for those involved in domestic assault than it was for the general population of Omaha. Additionally, victim education demonstrated a problem with skewness.

The majority of offenders were employed (65.2 percent). Conversely, slightly more victims were unemployed (50.4 percent) than were employed (49.6 percent). These employment figures are substantially lower for both groups than those indicated by the 1990 Census data for Omaha.

The missing data problem occurred on a large scale for offender income. This measure was missing for 43.1 percent — a significant portion of the sample. The most common income level was $900 to $1500 per month (20.3 percent), followed by $600 to $900 (14.7 percent) and $300 to $600 (12.7 percent). Not surprisingly, the victim income information had the same problem with missing data (50.4 percent). Of the cases with data, most victims had income

from $300 to $600 (18.3 percent), followed by $600 to $900 (13.2 percent).

Statistical Analyses

Unlike the Morehouse data, Dunford data showed none of the alcohol variables had a significant relationship with the dichotomous injury variable. In regard to the severity of injury dependent variable, the chi-square indicated that at the .05 level it had a significant positive relationship with alcohol use by both participants (.016) and a nearly significant positive relationship with alcohol use by the victim (.071). Alcohol presence in general and alcohol use by the perpetrator did not have significant relationship with severity of injury.

None of the linear Ordinary Least Squares (OLS) regressions for this data set were significant. This indicates one of several possibilities. First, it could mean that the variables simply do not explain a significant portion of the variance. This explanation is unlikely for two reasons. First, the chi-square revealed a statistically significant correlation between alcohol use by both parties and the severity of injury. Second, and most important, the Morehouse regression using similar variables was strongly significant, indicative of the strong influence of such variables on domestic violence.

Another, more plausible explanation is that the model is misspecified. A linear model could be an incorrect functional form. For example, the relationship here could be parabolic or perhaps any of the independent variables, the dependent variable, or a combination may need to be logged. The previously mentioned skewness problems with victim education and victim offender relationships indicate that these variables may require logging. However, the regressions conducted with the logarithm of these variables were not significant either. Thus, further examination of the specified model is necessary.

Conclusions

Analyses of the Morehouse data revealed that alcohol use by both parties increases the likelihood of injury presence. However, contrary to expectations, intoxication by the victim and by both parties decreases the severity of the violence. Also, different from our

expectations, weapon/force type demonstrated no significant relationship with any measure of the presence of alcohol. Disappointingly, there can be no meaningful parallel interpretation of the Dunford data set regressions since they were not statistically significant. However, the chi-square for the use of alcohol by both parties on severity of injury did indicate statistical significance.

In regard to the character of the domestic assault victim and assailant, the data analyses of both sets reveal that African-Americans are disproportionately represented in the domestic violence victim and offender population. Additionally, the average victim and offender have lower education and employment levels than demonstrated by the 1990 Census data. The alcohol was relatively common in both data sets, being present in over a third of the cases of each. These differences between this and the average population may hold the key to explaining the present of domestic violence or they may simply be indicative of varies police response and patrol patterns. This is, of course, an area for future exploration.

The Morehouse data additionally indicates that the police shift during which an incident occurred was significant for both the presence of injury and type of injury. There may be several reasons for this. It is possible that both change with simply the time of day, type of police personnel on duty, the presence of neighbors who might report the incident, a combination of these, or any of a myriad other factors. Therefore, the results suggest that future research in this area must take care not to limit itself to only one police shift.

Discussion

Despite efforts at overcoming the limitations of past studies, the present study produces mixed results. The strongly significant associations found in the Morehouse data set are counterbalanced by the total lack of significance of the comparable Dunford regressions. However, the fact that the use of alcohol by both incident participants is significant in the chi-square between both party intoxication and violence is intriguing. This indicates that there may actually be some effect of alcohol use by both parties on the severity of violence present in the Dunford data.

The findings of the Morehouse data are somewhat contradictory and further cloud the already murky relationship between alco-

hol and violence. On the one hand, it increases the incidence of violence. Yet on the other hand, alcohol presence decreases the intensity. Thus, it would appear that a combination of the theoretical explanations between violence and alcohol would best explain this complex relaitonship.

Naturally, it is prudent to be cautious in our interpretations. It is possible that the statistical significance found in the Morehouse data could merely be an artifact of the large sample size. Yet, because of the results of the Dunford chi-square, we believe that there is no reason to doubt the validity of the Morehouse results.

Most importantly, one must keep in mind the limitations of both data sets in measuring violence severity. Since both are comprised of only misdemeanor assaults, they necessarily will not capture the most severe instances of domestic violence. If alcohol does indeed have an exacerbating effect on the level of violence, it is possible that such an influence will not be found simply because the violence level requires felony categorization. Thus, both data sets would miss such incidents.

Additionally, both data sets depend upon police-reported incidences. The under-reporting of crime — especially within the family — is well documented. There my be intervening variables that cause some cases to be reported and others not to be. For example, the disproportionate representation of African Americans relative to their actual population in Omaha may be indicate of socioeconomic or racial factors that interact with police notification and/or response.

Moreover, we found it disturbing that both data sets registered the presence of stab and gunshot wounds under non-aggravated misdemeanor assault. Clearly, the use of such weapons should not constitute a misdemeanor offense. However, as the specific circumstances of such incidents were unavailable, we can merely question the police categorization of the event.

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