THE PREDICTION AND PREVENTION OF VIOLENCE IN PUBS AND CLUBS

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Abstract; *Although there Is much research that suggests that alcohol is a causal factor in criminal violence, relatively little is known about the sltuationalfactors and management practices that Increase the risk of violence in and around licensed premises. The aim of the present study was to use quantitative methods to clarify the situational and managementfactors most predictive of violence, and, in particular, to examine the role of intoxication. Visits (N=147) of two hours duration were made to 45 sites within 36 premises In Sydney, AUS in the winter of 1991. A total of 102 Incidents of aggression were observed, 29 (28.4%) involving physical violence. These incidents were concentrated In a small number of premises. A major predictor of physical violence was staff Intervention with intoxicated patrons, particularly, refusal of service. Male drunkenness and "drinks In rounds" shouting predicted non-physical aggression more strongly than physical violence, controlling for staff intervention. Prevention strategies should Include serious enforcement of legislation prohibiting the sale of alcohol to Intoxicated persons, and the use of responsible serving practices In all licensed premises, not just high-risk establishments. Experience from a community Intervention program tn southeast Queensland highlights the value of a local code of practice for licensed premises, supported by a monitoring committee to encourage: responsible serving and pricing practices; better quality entertainment; and the training of bouncers, bar staff and management In non-violent crowd control techniques.*

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Violent crime has become a topic of major public concern in Australia in recent years, as it has in most other Western countries. This is despite the fact that Australian crime victim surveys suggest a static or declining rate of victimization for serious assault since 1975 (Walker, 1094). However, as Shepherd and Farrington (1993) observe, those most at risk of violence, such as inner-city, poor, young, black males, are the demographic groups least likely to be included in victim surveys, and their numbers have been growing in recent years. Whatever the true underlying trends in criminal violence, injuries, including those arising from assaults, remain the second major cause of inpatient episodes and of years of potential life lost before age 65 (National Injury Surveillance Unit, 1993). Moreover, official databases probably understate the importance of injuries arising from intentional violence, since surveys of accident and emergency centers in major hospitals indicate that cases of self-inflicted injury and assault are overrepresented in the cases being missed by self-reporting procedures (Vimpani, 1991). Young, intoxicated males figure prominently among these cases.

Alcohol and Pubs in Australian Culture

Since the European conquest beginning in 1788, alcohol has played a central role in Australian culture. As historian A. E. Dingle puts it:

> ...the blessings of civilisation came to Australia in the form of a flag, gunfire and alcohol' [from F. M. Freeland, author *of The Australian Pub],* Aborigines had no knowledge of alcoholic formentation and so by 1788 Australia had long been the world's only 'dry' continent. All the evidence on the first 30 years of settlement indicates that white Australians were intent on making up for lost time as rapidly as possible [Dingle. 1980:2281.

Australia's reputation for heavy drinking has its roots partly in the militarized and mostly male society of the initial British colonization, partly in the gold rush era of the mid- 1850s. and partly in the (again mostly malė) tradition of itinerant bushworkers of the late nineteenth century (Room. 1988). The tradition of male mateship that developed at this time led to the formation of at least two drinking practices which persist to this day: the practice of "shouting"— "the obligation to share in drinking as a group activity, with each man taking his turn buying a round of drinks for all"—and the tradition of binge drinking, or "work and bust." "the

drunken blowout, often in town, at the end and on the proceeds of a hard spell of work in the bush" (Room, 1988:415).

Toward the end of the nineteenth century spirits gave way to beer as the preferred beverage, resulting in a halving of per capita absolute alcohol consumption. But in the decades after World War II, per capita consumption increased to levels comparable to those of the gold rush era. Since the 1960s, with the final, decisive defeat of the forces of moral uplift centered around the temperance movement, there has been an enormous increase in the availability of alcohol and in the penetration of drinking into all parts of daily life. In recent years total consumption has again started to decline, with beer giving way in its turn to wine. But Australia is still best characterized as a "wet" drinking culture, in the sense that drinking is socially integrated into daily life and alcohol consumption is accorded an important place in popular culture (Parker, 1993). By contrast, "dry" drinking cultures (mainly, the Scandinavian countries) are characterized by heavy consumption of spirits, high levels of total abstinence combined with extreme forms of binge drinking, and heavy controls on alcohol availability. Britain and the U.S. are characterized by Parker (1993) as "mixed" drinking cultures, displaying some features of both wet and dry societies. Parker argues that the differences between drinking cultures are large in scope, affecting nearly everyone, and that the relationship between alcohol use and violence might be strongly moderated by cultural factors. This suggests that readers from other countries should as far as possible avoid reading Australian research on alcohol use through their own cultural filters.

Historically, most drinking in Australia took place outdoors or in hotels (perhaps closest to "taverns" in American parlance). Until World War I, when the 6 p.m. closing was introduced after 30 years of agitation by the temperance movement, most hotel bars were small and catered to the needs of working men wanting to socialize away from their families. The "six o'clock swill" changed all that:

> The first arrivals crowded against the counter, the less fortunate ones called over their heads, late comers jostled and shouted and swore in an attempt to be served before closing time. It was a revolting sight and one it took a long time for me to take for granted...The shouting for service, the crash of falling glasses, the grunting and shoving crowd, and that loud, indistinguishable clamour of conversation found nowhere but in a crowded bar beat upon my brain until all my actions became mechanical [Phillips, as quoted in Room, 1988:425].

The brutalization of the drinking environment engendered by temperance agitation has left permanent scars, despite the gentrification in recent years of many traditional pubs and the proliferation of licensed clubs with sophisticated entertainment and dining facilities. Extreme crowding that is nevertheless within legal limits is still common, as is binge drinking promoted by the serving practices of management (Homel et al., 1992). An almost complete lack of effective external regulation with respect to the harmful consequences of drinking can be viewed as a direct legacy of the temperance movement, with its focus on prohibition rather than on the creation of less harmful, more pleasant drinking environments (Homel and Tomsen. 1991).

What has changed in recent years is the centrality of pubs and clubs as entertainment venues for vast numbers of young people, male and female, from all areas of a city. In the past, respectable women and many middle-class men would never have been seen drinking in public, but since the 1960s hotels and licensed clubs have been extremely successful in attracting women and patrons from all social classes. The great majority of patrons in hotels, clubs and discotheques are under 30 years of age. especially on weekends, and are often accompanied by groups of friends. Public drinking is legal at age 18, and even neighborhood pubs provide good quality entertainment sufficiently often to attract large crowds on Friday nights and weekends. Many well-known rock bands get their first start in hotels, and the larger hotels provide quite sophisticated dance and discotheque facilities, as well as restaurants and (in recent years) gaming machines. In New South Wales, poker machines and other gambling devices have been legal for many years in licensed clubs, which has provided them with the capital base to expand and modernize their facilities. Hotels have been at something of a disadvantage in this respect, and have had to compete through such means as offering live entertainment, discount drinks, "happy hours." and cheap, reasonable-quality meals.

Thus, the entertainment needs of young people in Australia are served primarily through licensed premises, the three major types of which are hotels, nightclubs, and large suburban clubs financed through poker machines and run by sporting associations (such as the Rugby League) or by organizations such as the Returned Servicemen's League. Apart from drinking, activities engaged in by young people include playing games such as pool, dancing, listening to bands, eating, and gambling on poker machines. Socializing between the sexes is, not surprisingly, a common

pastime, and it is not unusual, especially later at night inside and around discotheques, to see couples engaging quite openly in various forms of physical intimacy.

Many hotels and clubs are extremely large, with several separate bars and entertainment areas within the one building. In fact, the provision of physically distinct drinking and entertainment sites is one way that licensed venues have catered to the needs of diverse groups of patrons, from traditional working-class men to businessmen or middle-class teenagers. Other hotels have been renovated and marketed in such a way as to attract patrons from a very narrow age range. For example, one well-run hotel on Sydney's northern beaches runs a disco designed, it seems, for persons aged 18 to 22. Discotheques and some other forms of entertainment generally have a charge for entry, which at $10 or $15 may be a significant component of the cost of an evening out. If drinks are then offered at discount prices for periods during the evening, or if there is promotion of high-alcohol beverages with special prizes, there is obvious pressure for binge drinking. These types of irresponsible serving practices are still common, despite the promulgation in 1990 of the *National Guidelines JOT the Responsible Serving of Alcohol* (National Alcohol Beverage Council and National Campaign Against Drug Abuse, 1990).

Nearly everyone drives to clubs and hotels, and owners have accommodated demand by building enormous car parks. This makes drinking and driving a particular problem, which is combated by police random breath testing of motorists rather than by making management responsible for their serving practices (Homel, 1988). The concentration of large numbers of young people in crowded bars and discotheques creates other problems as well. Most large venues employ security firms or in-house crowd controllers, known popularly as "bouncers," to manage rowdy behavior, disorder and fights. Unfortunately, bouncers are frequently employed straight off the gym floor and have minimal skills in communication and nonviolent conflict resolution, making them a major part of the problem of violence (Homel and Tomsen, 1991). Although some states, including New South Wales, have legislation requiring the registration and identification of bouncers, police rarely check credentials and take little interest in how premises manage their affairs unless too many complaints come their way.

Alcohol, Licensed Premises and Violence

Alcohol has frequently been noted as a factor in assaults. Evidence comes mainly from three major kinds of enquires: studies of populations (trend studies in populations and natural experiments); studies of individuals (individual coincidence estimates and experimental studies); and studies of drinking contexts (conducted indirectly from surveys of drinkers or pub managers, and directly by observation of drinking in natural settings).

In trend studies, analysis is based on a correlation (over time) between aggregate levels of per capita alcohol consumption and crime rates in a jurisdiction. All the limited work in this area seems to have been conducted by Scandinavians, and it all points to a positive association between consumption and crime (e.g. Lenke. 1989; Skog. 1986). In natural experiments, sudden changes in alcohol availability or in the enforcement of laws related to alcohol consumption are studied for their impact on crime. Collins (1989) cites a number of studies which examined the effects of temporary reductions in alcohol supplies due to strikes, government experiments (in Sweden), school bans or other factors, most of which found a reduction in the level of violence when the supply of alcohol was interrupted.

Studies examining "individual coincidence estimates" use crime events as the units of analysis, and look at the use of alcohol by the offender, the victim, or both, preceding the crime. There are three main ways in which this has been done:

(a) *Studies of Individuals and groups who have been under some form of surveillance, treatment, Incarceration, or punishment from state agencies.* Most of these studies have found a positive association between high alcohol use or "alcohol problems" and a personal history of involvement in arguments, fights, and criminal assaults (Collins, 1989). For example, in Western Australia, Indermaur and Upton (1988) found that alcohol abuse among prisoners, particularly those with a history of violence, is a major problem.

(b) *Studies of violent Incidents recorded by state agencies, Including police records of criminal assaults.* These studies look at reported incidents of violent crime, and consistently suggest that alcohol is involved in between 40 and 70% of cases, being present in the assailant and frequently the victim as well. For example, in Wolfgang's (1958) Philadelphia homicide

study, alcohol was found to be present in either the offender, victim, or both in 64% of cases. The variability of estimates is due partly to differences in what is considered a violent crime, and partly to the frequent subjectivity involved in judging the presence of alcohol. A recent, unusually thorough Australian police study (Ireland and Thommeny, in press) concluded that 77% of "public-order" offenders (arrested for assault, offensive behavior and offensive language) had been drinking shortly before the offense, and that 60% of these occurred in or around licensed premises.

(c) *Studies of injured persons treated at casualty or outpatients departments of hospitals.* In a review of the literature comparing injured and non-injured patients, Cherpitel (1903) notes that the majority of studies find significantly higher levels of alcohol consumption and patterns of alcohol dependence among those with injuries.

Despite the evidence of individual coincidence studies, it is difficult to claim a direct role for alcohol in these violent behavior patterns or criminal incidents. The problem of "deviance disavowal"—the denial of responsibility for one's actions by citing alcohol as a determining cause or facilitating factor—remains as a confounding variable (Collins, 1080). Studies of officially recorded crime incidents are possibly unreliable, for a variety of reasons. Not only do police records of violent crimes represent only a small proportion of all such crimes occurring in the community (National Committee on Violence, 1990), it is possible that alcohol-related incidents are less likely to be recorded by police than non-alcohol-related incidents. In addition, leaving aside these sampling problems, it is quite plausible that since violent crimes frequently arise from interactive disputes, the increased number of such incidents in pubs and clubs on weekends and around closing time could simply reflect intensified social interaction.

These kinds of difficulties have led to a considerable amount of laboratory research into the effects of alcohol on aggression. Experiments on both humans and animals provide convincing evidence that alcohol enhances aggression, with Bushman and Cooper (1990) concluding on the basis of a meta-analysis of 30 human studies that the magnitude of the effect is similar to other variables such as gender. However, the relationship is not simple (White and Humeniuk, 1993). Aggression increases with alcohol dose up to a point, but high alcohol doses appear to suppress aggression. Moreover, the relationship depends on testosterone levels and, in humans, on the presence of frustration and threat (Gustafson, 1986).

The complexity of the alcohol-violence link, and the importance in nearly all studies of socially and cognitively mediated rules (Pernanen, 1991), led us in a previous paper to emphasize that a focus on the causal status of alcohol as a single "variable" is self-defeating from a prevention perspective:

> A key assumption was that there is a complex (but nevertheless real) relation between violence and public drinking (not the mere ingestion of ethanol) which is imbedded in Australian history and culture and reproduced in institutional arrangements and regulatory and police practices regarding drinking. In our research we aimed to transcend the narrow debate about the effects of ethanol *the substance* by focusing on the *total environment* of drinking and its regulation (or lack of regulation) by management, police, and other public officials. Thus we considered features of the external regulation of licensed premises as well as more directly observable characteristics such as physical layout, patron mix, and social atmosphere [Homel et al.. 1992:681].

There is surprisingly little research of this kind in the literature. Even "the more directly observable characteristics" of licensed premises have usually been studied from a purely ethnographic or alcohol-studies perspective, with the emphasis being on the anthropology of the pub as a working-class institution (Fairweather and Campbell, 1990; Mass Observation, 1943) or on the contextual aspects of alcohol consumption and abuse (Cutler and Storm, 1975; Plant et al., 1977). However, there is a developing theoretical literature on the contexts of alcohol and violence (Parker, 1993; Pernanen, 1991), as well as a growth in the use of surveys to probe the antecedents of violence.

MCM *research* (1990) interviewed managers of 300 licensed premises in England, and carried out some supplementary observational work on management styles and patterns of staff-customer interaction. This research is full of practical suggestions to reduce violence, although there is a clear sampling bias toward incidents involving or known to management. Perhaps the most useful aspect of this work was the development of a theoretical model (derived from Pernanen's research), which links alcohol use with violence via its influence on intellectual functioning and perceptual abilities. However, as Stockwell (1993a) observes, none of the recommendations of this alcohol-industry-sponsored research (see also Marsh and Kibby, 1992) relate to ways in which drunkenness per se might be discouraged.

The work of Stockwell et al. (1993) illustrates both the potential of population surveys to shed light on the contexts of alcohol and violence and the importance of intoxication as a predictor of alcohol-related harm. This study found that in a survey of 1.160 Western Australian adults, 7.9% of 873 drinkers had experienced some form of acute alcohol-related harm in the previous three months, that the most common problem was a violent argument or fight, and that 72% of problems followed drinking on licensed premises. Bar-staff continuing to serve "obviously intoxicated" customers was the most powerful predictor of harm after controlling for demographic variables, with crowding and price discounting having indirect effects on harm via their correlations with this variable.

Despite the ability of surveys to shed some light on contexts, it is clear that direct observation, supplemented by surveys of staff or patrons, is the best way of studying violence in the natural setting of licensed premises. Apart from the 1989 Sydney study (Homel et al.. 1992), and some detailed descriptions in Pernanen's (1991) community study of interactional sequences in bars that alternate between positive and aggressive acts, the only major observational study of aggression in licensed premises is by Graham and her colleagues (1980) in Vancouver, CAN. Four observers (working in male-female pairs) noted 160 incidents of aggression (47 involving physical violence) during 633 hours of observation in 185 drinking establishments. Many variables were positively correlated with aggression, including the percentage of drunk patrons, the percentage of American Indians, poor ventilation, the amount of sexual bodily contact, lack of cleanliness, and a hostile atmosphere. The authors stressed, however, that the bar-room environment is best viewed as "an ecological system," and implied that the overall influence of this ecology on aggression may be greater than the sum of the effects of individual variables.

Although Graham et al. (1980) used quantitative methods and Homel et al. (1992) used a qualitative approach, the findings of the two studies are in many respects consistent. Our research confirmed that d great deal of violence occurs in and around licensed premises, and that intoxication, especially mass intoxication encouraged by the irresponsible promotion of drinking, is one factor leading to violence. However, we emphasized that violent incidents in public drinking locations do not occur simply because of the presence of young or rough patrons or because of rock bands or any other single variable. Violent occasions are characterized by subtle *interactions* of several variables. Chief among these are groups of male strang-

ers, low comfort, high boredom, high drunkenness, as well as aggressive and unreasonable bouncers and floor-staff.

The major aim of the present study was to replicate the 1089 Sydney study (Homel et al., 1092), this time using mainly quantitative rather than qualitative methods, and building on the insights of the pioneering Vancouver research. More precisely, the aim was to quantify through structured observation methods the relationship between, on the one hand, physical and non-physical aggression occurring in and around a sample of licensed premises in Sydney, and, on the other hand, a range of management, patron, and situational variables capable of measurement through direct observation. The study had a more limited scope than the 1989 research, inasmuch as it did not involve a direct focus on external regulation and because it could not probe subtle interactions between variables in the way that is possible in qualitative research. A specific research question was the role of intoxication in the production of violence: does drunkenness per se matter, or is inadequate management more important? A final aim of the study was to use the results to develop more effective strategies for the prevention of violence.

METHOD

The observation schedule was developed and 300 hours of observations carried out by 23 final year and graduate students at Macquarie University, Sydney. These students also coded and entered the data and carried out preliminary analyses, under the supervision of the principal author. The study was conducted during the mid-semester holidays in July and August 1991. It is important to note that this was mid-winter, and that had the study taken place in the summer months (when universities are in recess) different patterns of activities and levels of violence may have been observed.

Sampling Methods

As in the 1989 Sydney research (Homel et al.. 1992). the focus of the present study was on licensed premises open to the public and used as entertainment venues by young people. Thus, all hotels and nightclubs and most types of licensed clubs were included in the sampling frame. Excluded were restaurants and licensed premises frequented largely by middle-aged and elderly people such as businessmen's clubs, bowling clubs and golf clubs. These clubs usually have strict membership rules

which exclude youngpeople (or anyone else) from coming in "off the street." Although other types of clubs, such as those run by the Returned Services League, are nominally restricted to members and "guests," in practice almost anyone can gain admittance through friends who are members, particularly to entertainment such as discotheques.

One practical difficulty with observational research on physical violence is that unless premises are carefully targeted and many hours spent in fieldwork, not enough instances of assault will be observed to permit reliable statistical analysis. The 1989 Sydney research was conducted mainly in premises with a reputation for violence and at times when Incidents were likely, yet in nearly 300 hours of observation only 32 clear cases of assault were observed (Homel et al., 1992). This represented a rate per 100 of observation some 50% higher than that recorded by Graham and her colleagues (1980), who used probability sampling methods. However, these researchers observed for 600 hours and analyzed both physical and non-physical aggression, thereby boosting their numbers for analysis. The concentration of violence in a minority of premises is of course an important finding, and is encouraging for those interested in prevention, but it does mean that either the research design must allow for the oversampling of high-risk premises or that observations must be conducted for a long enough period (as in the Vancouver study) to produce enough cases for analysis.

Two methods of sampling were therefore blended in the present study: purposive sampling of premises known by reputation or from the previous research to be "high risk" for violence: and two-stage cluster sampling, with some "purposive" modifications. This design approximates a stratified sampling strategy, with a category of high-risk pubs and clubs and a category of "normal" or "low-risk" premises. The difficulty in devising a strict stratified probability sampling scheme is the absence of any definitive list of high-risk premises. Were such a list available as it is in Perth, WA (see Stockwell et al., 1992), it would be possible to over-sample high-risk premises and also weight the data to produce unbiased estimates of the levels of aggression and physical violence in the whole population of hotels, nightclubs, and clubs. The assumption has been made for present purposes that the high-risk premises included are representative of all such venues in Sydney, and that the variable *high risk/ normal* has been included as a factor in the analysis. Given the purposive nature of the high-risk sample, however, it is impossible to use

the present study to devise unbiased estimates of the prevalence of aggression and violence in the population of licensed premises.

The purposive sample consisted of three premises which were prominent in the 1989 study and eight suggested by local reputation, confirmed in most cases by exploratory visits (Homel et al., 1992). Seven were hotels, four of which ran discos or nightclubs, and one of which could be described as "skid-row" (Graham et al., 1980). The remainder were large clubs or nightclubs which had extensive entertainment facilities, including discos.

The probability sample was selected from the *Index of Licensed Premises In New South Wales* (Liquor Administration Board, 1990). which arranges premises by geographical area. Seventeen areas in Sydney were selected with a probability proportional to size (i.e., according to the total number of premises of all types in the area). Two premises were selected at random from each selected area (except the Sydney Central Business District (CBD), from which four premises were selected), giving each of the 1,277 premises in Sydney except those in the CBD an equal probability of inclusion in the sample. Premises not fitting the selection criterion and those found on investigation to be no longer operative were excluded and replaced at random from within the area. In three cases there were no other suitable premises within the selected area to act as replacements. In these cases another area was selected at random, and one facility was chosen randomly. Thus, premises in large areas were slightly underrepresented in the replacements, which was considered appropriate since the ones being replaced were all from small areas. The Sydney CBD was the largest and most diverse area selected, so the decision was made to select four rather than two premises from this area to allow the diversity to be more fully expressed in the sample. This biased the sample slightly to CBD premises. The 11 high-risk premises were accommodated by deleting at random 11 of the randomly selected premises, yielding a total sample of 36 premises.

The selection of premises does not exhaust the sampling decisions which must be made. Other important factors are the timing of visits and the selection of drinking sites within premises, given that (as noted earlier) many of the larger establishments have several physically separate bars or entertainment areas which permit drinking. There were 45 sites visited within the 36 premises, with the guiding rule being to concentrate on areas in which most drinkers were congregated or in which entertainment was taking place. Sampling at this point was therefore more purposive than random, in contrast to the more systematic Vancouver study.

Observers were also instructed to visit no earlier than 8 p.m., and to vary the time and the day of week from visit to visit. Again, however, a rigid schedule was not devised, on the assumption that it was appropriate to concentrate limited resources on later times and days later in the week when aggression and violence were more likely to occur. Thus, nearly 80% of the 147 visits took place on Thursday, Friday and Saturday nights, and all but four commenced no earlier than 8 p.m. More than one-third of the visits (52, or 35,4%) concluded at midnight or after, but given that the official closing time was at midnight or after in 68.9% of visits, an unexpected bias toward earlier times is evident. In retrospect, therefore, a more rigid time schedule might have been appropriate.

Observation Procedures

Observers always visited at least in pairs, with friends sometimes included to increase the size of the team. Mixed-sex teams were encouraged, with all-female groups banned for safety reasons. Friends who completed an observation schedule were thoroughly trained in the aims of the study and in procedures. Thirteen teams made between eight and 16 visits each, yielding a total of 147 visits. Where possible, each club or hotel was visited by two teams (on different occasions), with all but one venue being visited four times in all (one high-risk hotel was visited seven times). Visits lasted a minimum of two hours. Observers were instructed to move around the premises so they could see what was going on, and to pay particular attention to entrance areas where trouble frequently occurs. However, there is no doubt that important incidents were missed during some visits, particularly when the venue was very crowded. In large or crowded entertainment areas, observers were instructed to concentrate on an observable (if not audible) section of the crowd rather than attempt to cover the entire premises.

Observers were permitted one alcoholic drink per hour so they could blend with other patrons, and were advised to avoid situations where they themselves could become victims of an assault (in fact, one student was the victim of a minor assault at one high-risk inner city hotel). They were also instructed to use their judgment and report any serious assaults to police if it seemed unlikely that the victim would receive appropriate medical attention. (In all actual cases of sufficient seriousness friends of the victim took appropriate action.)

No notes were taken during the observation period, but observers conferred as soon as possible after the visit and completed individual observation schedules which were compared for consistency. Discrepant items were discussed and consensus reached, with a note being taken of items which were consistently discrepant. These problem items were discussed later in class and definitions clarified so that the problems could be avoided in later visits. However, given the large number of observers involved, it was not possible to calculate formal reliability coefficients for each item. Observers did write a single narrative account for each visit, concentrating on aspects which they felt were not adequately covered in the structured observation schedule. They also prepared a floor plan for each bar or entertainment area visited. These narratives provided the opportunity to record in detail the individual circumstances of aggressive and violent acts, and permitted a check on the rated seriousness of these incidents as well as on other aspects of the visit. The narratives contain rich information which complements the statistical data reported in this paper.

The Observation Schedule

A draft of the observation schedule was prepared, based on the qualitative open coding scheme devised for the 1989 study (Homel et al., 1992) and on the study by Graham et al. (1980). This was then tested and refined in a series of pilot visits. The final version ran to 18 pages and included many hundreds of separate items. Where variables were observed in the pilot visits to vary over the period of a visit (for example, the intensity of lighting), separate ratings were made for "early." "middle," and "late" periods (based roughly on 40-minute intervals). A few additional codes were devised at the end of the study to accommodate aspects of visits which were not included in the pre-codes (e.g., types of entertainment such as dart games not observed during the development of the schedule).

In addition to factual items dealing with such things as closing time arid number of bars on the premises, items were grouped under eight broad headings: physical environment (e.g., lighting, seating); bouncers/security/doormen (e.g., sex of bouncers, presence of security firm); social environment (e.g., crowding, sexual activities of patrons such as "chatting up," "necking" or fondling); patrons (e.g., age groups, type of dress); bar staff (e.g., ratio of bar staff to patrons, staff acceptance of deviant behavior); alcohol/drug consumption and costs (e.g.. levels of male

drunkenness, cost of drinks); responsible serving practices (e.g., publicity to clientele concerning under-age drinking, staff intervention with highly intoxicated patrons); and conflict/violence.

The section on conflict/violence was subdivided into: verbal aggression (one-way abuse); arguments; challenges/threats; friendly fights ("lion-cub fights"); rough ejections; accidents leading to injury; and physical aggression/assaults (deliberate unfriendly bumping, grabbing, pushing, and actual physical violence such as punching, kicking, etc.). For most types of physical and non-physical aggression, detailed data were recorded, including: types of weapons used (if any); whether the incident was victim-precipitated; number of male and female assailants or aggressors; number of male and female victims or recipients; whether the incident occurred early or late in the visit; the severity of the incident (high, medium or low); whether there was intervention by patrons or staff; whether staff were involved in the incident; the perpetrator (bouncer, patron or other staff); bouncer treatment of the situation (inflaming, diffusing, controlling or ignoring); the location of the incident (inside, outside, or at the entrance); and the degree of drunkenness of the participants (high, medium or low). Full details of all variables are available from the principal author.

Graham and her colleagues (1980) especially noted that the decision as to whether a particular incident should be deemed aggression is one of the major problems of data collection. To obtain some consistency in their study, operational guidelines were adopted stipulating that an incident would be classified as aggression if it involved "personal violation (verbal insult, unwanted physical contact), behavior that was offensive according to the norms of the place, or a dispute in which the participants had personal investment" (p. 281). The same guidelines were adopted for the present study, which means that as in the Vancouver research there was some variation from establishment to establishment in the precise operationalization of what was physical or non-physical aggression.

RESULTS

Aggression and Violence

In the 300 hours of observation a total of 102 incidents of aggression were observed. 29 (28.4%) involving physical aggression. The rate of aggression per 100 hours of observation (34.0) was a little higher than in the Vancouver study (25.2), with a correspondingly higher rate of physical

violence (9.7 per 100 hours compared with 7.4 in Vancouver). The rate of physical violence in the 1989 Sydney study (Homel et al., 1992) was 10.7 per 100 hours, but this higher rate is explained by the over-representation of high-risk premises in that study. The bias toward high-risk locations is also part of the reason for the higher rates in the present study than in Vancouver; of the 29 physical incidents. 24 occurred in high-risk pubs or clubs, corresponding to a very high rate of 23.1 per 100 hours.

The majority of physically aggressive incidents were not rated as severe. Using the three-point scale, only six (20.7%) were of high severity, with 13 being rated medium (44.8%) and ten as low (34.5%). Some flavor of what these ratings mean can be conveyed by describing some of the incidents, as recorded by the observers.

Incident 1. In one inner-city skid-row pub frequented by aborigines, assaults of high and medium severity appeared to be common. At around 3 a.m. one weeknight, a woman suddenly pushed another woman (call her Sally) across the room with such force that two chairs were overturned and a table nearly fell over, smashing glasses and an ashtray. "Sally hit her head on the tile floor and lay there for a while. I went to get up and help her, but Ian put an arm across me and told me that it was a fight between two aboriginal women and that I had to stay out of it or I would get hurt. I sat down again. Sally raised herself and put her hand to her head. When she removed her hand there was lots of blood running down her arm and hand. A black woman helped her up and took her to the toilet." This incident was rated as high severity by the female observer.

Incidents 2 and 3. Half an hour later at the same hotel the observers decided to leave. "As I got up I accidentally knocked over a glass. As I reached to stop it falling, I knocked an ashtray off the table that smashed. We continued to walk out but an aboriginal man stood in my way swearing at me for breaking 'his ashtray' and for breaking 'their things.'...I had to brush past Jane (a pseudonym for a patron) to get out. and when I was just outside the entrance I...saw that Jane was running out after me. She threw off her jumper and screamed at me, but I couldn't understand what she was saying. She pushed me in the chest and raised her hands, telling me to fight her..." The first of these incidents was rated as verbal aggression of low severity, the second as a physical assault of medium severity. This last rating could perhaps have been deemed of low severity, except that Jane ran after the observer and would have assaulted her again if not restrained by Ian (the other observer).

The hotel in which these incidents occurred was probably the worst in the study. Drunkenness levels were usually very high, and staff appeared to take a totally non-interventionist approach. The skid-row nature of the pub and the high proportion of aboriginal patrons made it unusual in our study, since most venues were of a more "suburban" nature. However, serious incidents were by no means restricted to inner-city venues, and it should be stressed that most violence observed involved not aborigines but whites. Interestingly, a few of the worst incidents involved women as assailants, although in the majority of cases males were to blame.

Incident 4. At one large disco in a suburban hotel, a very drunk all-male group was allowed to enter. They soon began to yell abuse at the band (for example, "Haven't ya heard of AC-DC?"), which was rated as low severity. However, when some women walked by they would make sexual gestures and make noises. "On one occasion one of them grabbed the backside of a woman. She turned round and gave him a filthy look and kept on walking." This sexual assault was rated (by the female observer) as low severity, which within the norms of the establishment was probably a reasonable judgment.

Incidents 5 and 6. A little later, one woman pushed another away from her. "The woman that was pushed away said something like, "You shit, who do you think you are?' She then went up to the woman that pushed her and gave her an almighty slap across the face with the back of her hand. The group of drunken males...saw this and started to yell out, 'Go for it girls' and other things. The woman then put her whole hand over the face of the woman she had just slapped and shoved her head back. This woman then put up her arm and tried to pull the hand away from her face. The woman that had her hand on the face then gave her another push, let go of her face and walked away." This was rated as a high-severity event, in contrast with a further incident involving the drunken males, where a half-full beer can was thrown at the leg of another man. hitting him and spilling beer. This was rated as a medium-severity incident.

In contrast to the 1989 Sydney research (Homel et al., 1992), most assaults were not perpetrated by bouncers (there were only three such instances recorded), although in nearly half the cases (14) bouncers either inflamed the situation or ignored it. Male assailants (34) and male victims (24) were most common, but in all there were nine female assailants and ten female victims. In nearly every case victims were alone and quite drunk, which is completely consistent with the earlier Sydney research. Also consistent with this research, the majority of assaults (22 out of 29)

were not judged to have been precipitated or provoked by the victim. In contrast to the study by MCM *research* (1990) on violence in English pubs, nearly all assaults in the present study involved only fists or other body parts; weapons such as broken glass or a bar stool were observed in only two cases.

The non-physical aggression observed encompassed a wide variety of incidents and types of aggression: 32 cases of verbal aggression (nearly all involving male aggressors and victims), 11 challenges or threats (also involving mostly male aggressors and recipients), and 30 arguments (about a quarter involving only women). In addition, there were: nine rough ejections which were not classified as assaults but which, on more detailed analysis, might well require recategorization; three accidents leading to injury: and 64 "friendly fights." Only verbal aggression, challenges or threats, and arguments were counted as non-physical aggression.

Both physical and non-physical aggression were highly concentrated in relation to time and place. Three-quarters (75.9%) of the physical assaults occurred in only eight sites (17.8%), with two-thirds of the 45 sites being totally free of observed physical violence. As would be expected, non-physical aggression was more widespread, with only 53.3% of sites not having some incident recorded. Even so, however. 83.6% of incidents occurred at a quarter of the sites. As noted above, sites in high-risk premises accounted for most of the incidents of all types of aggression. The rate of physical incidents per visit was .46 for high-risk sites and only .05 for non-high-risk sites (a ratio of 9:1): the corresponding figures for non-physical aggression were .80 and .33, respectively (a ratio of only 2.4:1). Interestingly, if one site in a pub or club tended to experience aggression and violence, so did other sites on the premises, suggesting that the management problems leading to violence are not necessarily specific to particular types of entertainment (such as discos).

The descriptions of incidents quoted above suggest that physical and non-physical aggression are intertwined. Statistical analysis confirms this impression. Using *visits* (not incidents) as the unit of analysis, the correlation between observing one or more non-physical incidents and one or more physical incidents was .40 using phi and .82 using Yule's Q. Of the 38 visits during which non-physical aggression was observed, 14 (36.8%) also involved physical violence, but of the 109 visits in which non-physical aggression was not observed, only 6 (5.5%) involved physical violence. In other words, the odds of physical violence on any visit were ten times higher when non-physical aggression was observed than when

it was not. This correlation is important for the analysis of predictors of violence, since it suggests that factors that correlate with non-physical aggression but not with physical assaults may nevertheless be of *indirect* importance to the prevention of violence.

The Prediction of Aggression and Violence

The remainder of the analysis is based on visits (N=147). The distinction between non-physical and physical violence was retained (defining non-physical violence as arguments, threats, and verbal aggression), but. in addition, two variables were constructed to provide overall measures of aggression.

AGGRESS? is a dichotomous variable recording whether or not any incident occurred (it did during 44 visits). ATTACK? is a dichotomous variable recording whether or not physical violence occurred (20 visits). A variable called SEVERITY was constructed based on the average rated severity of each of the non-physical and physical incidents observed during each visit, with the proviso that physical violence received a double weighting. Thus, the higher the score on SEVERITY, the more serious the overall level of aggression and violence (the range was 0.0 to 6.0, with 103 visits recording a zero score since there were no observed incidents). This variable is probably subject to a degree of unreliability, since the rating of severity depended to some extent on the nature of each establishment, making comparison across establishments more difficult than for the simple recording of incidents. Any bias is toward rating the severity of incidents in high-risk premises as less severe than in lower-risk premises. SEVERITY is independent of the number of incidents during a given visit, since it involves averaging across all incidents. Therefore, an additional variable INCIDENTS was constructed, which referred merely to the total number of incidents of all types observed for a given visit (range: 0 to 6, with 103 zero values).

Table 1 shows the major correlates of aggression and violence. This list of predictors was arrived at through several stages of culling. First, variables with little or no information content were discarded (e.g. no patrons were observed engaging in sexual intercourse, in contrast to the 1989 study [Homel et al., 1992); and on only two of 147 visits were police observed on the premises). Second, variables which did not vary much by time (early, middle or late in the visit) were simplified by using only the mid-visit rating. Variables which did not differ by the sex of participants

(e.g., sexual competition) were collapsed across sex. Third, tabulations and correlations were run across the four dependent variables, and variables with low predictive power were dropped. Some of the dropped variables correlated consistently with the dependent variables, but were below the 5% level of significance (.16). For example, the individual level of cheerfulness of female patrons late in the visit (scored on a four-point scale) correlated at around .10, and is not included in Table 1. With one exception, the variables surviving the culling process could be scored as dichotomies or as ordinal scales, allowing Pearson correlation coefficients to be used. (The exceptional variable, staff intervention with highly intoxicated patrons, was a three-category nominal variable and is partially represented in Table 1 by a dichotomous variable indicating whether or not any intervention occurred, regardless of whether any intoxicated patrons were present.)

Many of the correlations in Table 1 are significant at levels well beyond .01 (e.g.. .005 [r(crit.) = .23] or .001 Merit.) = .28]). This suggests that despite the large number of tests carried out, many correlations may reflect real associations (if not direct causal relationships). The strongest correlates of physical violence (SEVERITY and ATTACK?) are: high-risk premises, the presence of a disco, hostility, swearing, roughness and bumping, bar crowding, inadequate numbers of bar staff relative to the crowd. Pacific Islander bouncers, staff intervention with intoxicated patrons, refusal of service, and low levels of server responsibility.

Of course, the sheer size of an establishment would be expected to predict violence, simply because more people engage in more interaction, any instance of which is potentially aggressive. It is therefore interesting to note that the available measures of size (number of bars, number of patrons in view, seating capacity) were only moderate predictors of aggression. Overall crowding correlated more strongly with aggression, but bar crowding—which has to do with movement and concentration within the premises rather than overall density—was more important. (A more objective measure of size based on on-premise alcohol sales was sought from the New South Wales Chief Secretary's Department, but permission was refused on the grounds that such data, even in scaled form, are privileged commercial information.)

Table 1: Major Correlates of Aggression and Violence

	SEVERITY	INCIDENTS	AGGRESS?	ATTACK?
Type and Size of Venue				
High risk premises	.34	.34	.27	.34
Skid row hotel	.21	.21	.17	.18
Late closing (after midnight)	.19	.20	.12	.24
No. of bars (1-6)	.19	.21	.16	.15
Discotheque	.29	.25	.21	.27
No. patrons in view (5-1300)	.13	.19	.19	.09
Seating capacity (1 = <50; 2 = 50-99; 3 = 100-149; 4 = 150-199; 5 = >200)	.13	.24	.22	.11
Physical Environment				
Inadequate seating	.22	.19	.21	.23
Bar stools available	-.20	-.19	-.24	-.18
Ventilation (1 = fresh; 2 = comfortable; 3 = warm; 4 = stuffy)	.25	.29	.25	.20
Smoke level (1 = low; 2 = medium; 3 = high)	.30	.31	.36	.28
Cleanliness(1 = filthy; 2 = dirty; 3 = clean; 4 = spotless)	-.25	-.22	-.19	-.16
Darkness (1 = well lit; 2 = medium-bright; 3 = dim; 4 = dark)	.28	.23	.23	.22
Inconvenient bar access	.20	.23	.24	.24
Staff				
Bouncers present	.25	.27	.27	.23
Islander bouncers	.38	.29	.25	.31
Ratio of bar staff to patrons (1 = 1:10; 2 = 1:20; 3 = 1:40; 4 = 1:50; 5 = <1:50)	.30	.27	.37	.25
Bar staff acceptance of deviant behaviour (1 = not permissive; 2 = slightly permissive ; 3 = not applicable; 4 = permissive; 5 = very permissive	.20	.16	.06	.19
Patrons				
% Aboriginal (0-95%)	.22	.30	.14	.23
% "marginal" (0-100%)	.21	.25	.17	.14
% underage females (0-20%)	.20	.24	.25	.19
% male patrons in manual working gear (0-100%)	.20	.14	.12	.17

Table 1 (continued)

Social Environment				
Level of crowding (1 = none; 2 = low; 3 = medium; 4 = high)	.23	.25	.25	.25
Bar crowding (1 = none; 2 = low; 3 = medium; 4 = high)	.30	.26	.31	.29
Patron boredom (1 = none; 2 = low; 3 = medium; 4 = high)	.19	.18	.12	.18
No sexual activity (males)	-.25	-.19	-.20	-.27
Discreet necking (males)	.16	.16	.19	.17
Sexual competition (male and female) (1 = none; 2 = low; 3 = medium; 4 = high)	.22	.29	.27	.19
Swearing (male) (1 = none; 2 = low; 3 = medium; 4 = high)	.37	.32	.37	.34
Swearing (female) (1 = none; 2 = low; 3 = medium; 4 = high)	.30	.38	.31	.29
Rowdiness (male) (1 = none; 2 = low; 3 = medium; 4 = high)	.34	.37	.38	.32
Roughness and bumping (male) (1 = none; 2 = low; 3 = medium; 4 = high)	.54	.51	.51	.49
Hostility (males)(1 = none; 2 = low; 3 = medium; 4 = high)	.54	.52	.47	.46
No food available	.24	.28	.18	.17
Alcohol/Drug Consumption and Serving Practices				
Male drinking rate [a] (1 = <1 standard drink/hr; 2 = 1-2/hr; 3 = 3-4/hr; 4 = >4/hr)	.24	.26	.32	.20
Female drinking rate [a] (1 = 4 standard drink/hr; 2 = 1/hr; 3 = 2-3/hr; 4 = >3/hr)	.21	.23	.27	.14
Levels of male drunkenness (1 = none; 2 = low; 3 = medium; 4 = high)	.29	.31	.37	.21
Levels of female drunkenness (1 = none; 2 = low; 3 = medium; 4 = high)	.21	.22	.25	.13
Round shouting (males) (1 = none; 2 = low; 3 = medium; 4 = high)	.22	.18	.28	.14
Drug dealing on premises	.22	.31	.23	.22
Staff intervention with highly intoxicated patrons	.35	.27	.32	.34
Refusal of service to highly intoxicated patrons	.35	.28	.35	.34
Overall rating in terms of responsible serving [b] (1 = very responsible; 2 = some-what responsible; 3 = not very responsible; 4 = not responsible at all)	.34	.25	.18	.34

Notes: **(1) Variables for which the coding Is not given are dlchotomous and scored In the indicated direction (eg.: High risk premises: l=yes; O=no).**

(2) All variables In this table are significantly correlated with the dependent variables at a = .05 (r(crit.) = .16) or a = .01 (r(crlt.) = .21). Non-slgniflcant variables are not Included.

(a) A "standard drink" is defined as a 'middle' (285ml) of normal strength beer (approximately 5% alcohol by volume), a nip (1 ounce) of spirits, 2 ounces of port or sherry, a glass (4 ounces) of wine, and a schooner (1.5 middles) of low alcohol beer.

(b) "Responsible serving practices" refer to any strategies by management or staff to (a) reduce the number of intoxicated patrons; (b) avoid problems flowing from intoxication or excessive drinking (eg. drink-driving, assaults, accidents, vandalism, noise, or disorder).

The correlations with hostility and roughness are so high (.50 or higher) that it is reasonable to conclude that the ratings reflect observed incidents of aggression and violence, so these variables were not included in the multivariate analyses. Drinking rates and levels of drunkenness did not correlate quite so highly, although male drunkenness was strongly associated with SEVERITY, and the male drinking variables were more powerful predictors than those measuring female drinking. The "intoxication" variables that correlated most highly were those to do with staff *responses* to drunkenness, suggesting that the way drinking and drunkenness are managed may be as important in the prevention of violence as the avoidance of high levels of drunkenness in the first place. The strong association between the employment of Pacific Islander bouncers (mainly New Zealand Maoris, Fijians, Samoans, and Tongans) and violence suggests that good management should also extend to the careful selection and training of security staff, although it should be kept in mind that in only a few cases of the incidents observed were assaults actually instigated by bouncers. The issue here is not ethnicity as such, but the expectation that islanders, due to their very large size, will be able to deal with "trouble" In a simple and direct physical manner—an expectation that should be modified by appropriate training of management and security staff.

As expected, the correlates of total aggressive incidents (AGGRESS? and INCIDENTS) were similar to the correlates of violence, except that aspects of the physical environment figured more prominently, especially ventilation and smoke levels. To venture a causal interpretation, this finding suggests that smoke may have considerable irritation value. The presence of aboriginal patrons was also strongly associated with increased numbers of incidents, as was observed drug dealing.

There are many parallels between the patterns in Table 1 and those reported by Graham and her colleagues (1980). Although measurement and sampling methods differed, common predictors include: drinking rates and drunkenness, control exercised by bar workers, percentage of aboriginal patrons (American Indians), ventilation, sexual bodily contact, swearing, hostility, cleanliness, marginal patrons (unkempt dress, talking to themselves etc.), and adequate and convenient seating. Variables which correlated highly with physical or nonphysical aggression in the Vancouver study but not as highly in the present study include: turnover and movement of patrons, decor, noise level, aspects of entertainment (e.g., juke box), drug use (as opposed to drug dealing) and downtown location. Conversely, the present study highlighted some variables not prominent in the Vancouver study, including: bouncers and bouncer characteristics, high-risk premises (as opposed to downtown location or skid-row), disco* theques, lighting, crowding, patron boredom, underage patrons, and aspects of staff intervention with intoxicated patrons.

Multivariate Analyses

In an attempt to isolate key predictors, a least-squares multivariate regression analysis and a multivariate logistic regression analysis were carried out. The first analysis included all four dependent variables, while the second used a new three-category dependent variable defined as: no incident (103 cases): non-physical aggression only (24 cases); and at least one physical assault, regardless of whether non-physical aggression also occurred (20 cases). Of the two analyses, the second is more "valid" statistically since it makes no assumptions about the normality of the data or equal variances. However, the least-squares MANOVA has the advantage that more information is contained in the four dependent variables (e.g., the severity of incidents), despite their skewed distributions. Fortunately, the two models yielded similar results.

The models included the variables measuring size of establishment as covariates, and whether the premises were high or low risk (reflecting the sampling strategy). Given their artifactual correlations with the dependent variables, roughness and bumping, and hostility, were not included in the models, although they were tested in a final step. The reduced MANOVA model was obtained by preliminary backward elimination of 47 independent variables for each of the four dependent variables separately. This resulted in a likely set of six variables, which were fitted in a MANOVA.

Each of the omitted variables was then added individually to this model, and only one was found to be significant at the .05 level over and above the initial six. The final set of seven variables are set out with multivariate p-values and standardized regression coefficients in Table 2. It is interesting to note that none of the variables measuring roughness, hostility, swearing, rowdiness, or cheerfulness—either singly or jointly—added significant variance to this reduced model. This result suggests that the explanatory power of these "social climate" variables is mediated through such factors as drunkenness.

Given the small sample size and the sparseness of the aggression and physical violence categories, the multivariate logistic model was built up rather than reduced from a "full model." Using chi-square analyses, the most powerful predictor was placed in the model, the next most powerful added, and so on, until nine variables were obtained, each of which was significant at the .05 level when fitted last. No other variables were significant when added to this model. The multivariate p-values for the model and the odds ratios for non-physical and physical aggression are set out in Table 2.

Given their empirical method of derivation, and the inclusion of some variables significant only at the .05 level, the models are likely to contain some Type I errors. Nevertheless, it is preferable to interpret small models with a large number of non-significant variables removed than to attempt to interpret very large models in which many variables, due to their intercorrelations, distort the effects of others. It is not claimed that the models in Table 2 are the only ones possible or that all the variables would survive a replication, only that they succinctly capture the measured variance. Despite the large number of variables omitted, the MANOVA model has explanatory power comparable with that found by Graham et al. (1980) for larger models. Lambda for the model is .36343, corresponding to 63.7% of the variance explained, and the R^2 for each of the dependent variables is: SEVERITY, 47.4%; INCIDENTS, 40.9%; AGGRESS?, 37.8%; and ATTACK?, 40.0%.

The results of the two analyses are broadly consistent. Both models confirm that the presence of Pacific Islander bouncers, refusal of service, and overall server responsibility are the most significant predictors of physical violence. Controlling for other factors. Islander bouncers (present in 10.9% of visits) increased the odds of violence by a factor of 20, with the lower 95% confidence bound being about two. Incidents observed

Table 2: Reduced Models for Least Squares and Logistic Multivarlate Regressions

	Least Squares MANOVA:[a] p-values and Standardised Regression Coefficients					Multivariate Logistic:[b] p-values and Odds Ratios		
	p	SEVERITY	INCIDENT	AGGRESS?	ATTACK?	p	Non-physical	Physical
Islander bouncers	.0007	.26***	.15*	.12	.22**	.024	3.27	19.71**
Refusal of service	.015	.22**	.15	.16	.31***	.001	8.83	302.39***
Server responsibility[d]	.000	.32***	.22**	.15*	.33***	.0001	1.15	6.30***
Staff intervention[c]	.041	-.06 .18*	-.16* .17	-.09 .21*	-.03 .05	.029	.35 13.03**	.63 3.84
Male drunkenness[d]	.010	.12	.17*	.25***	.04	.0002	5.82***	2.84
Discreet necking	.014	.16*	.20**	.22**	.18**	.042	4.53	7.34*
% Aborigines	.010	.11*	.21**	.06*	.15	-	-	-
Round shouting[d] (males)	-	-	-	-	-	.008	2.71**	2.58*
Late closing	-	-	-	-	-	.002	13.78**	1.29
Breathalyser obvious	-	-	-	-	-	.0003	58.99***	14.21*

*p.05; **p.01; ***p.001. (p-values are variables fitted last.)

a. Model d.f.=8; error d.f.=138; A=.36343

b. Model d.f.=20; residual d.f.=272; residual deviance=123.6

c. This was the only factor in the analysis that was not a single degree of freedom. The contrasts were: (i) No Staff intervention with intoxicated patrons vs no intoxicated patrons present; (ii) Staff intervention with intoxicated patrons vs no intoxicated patrons present.

d. These variables are measured on 4-point scales (see Table 1), and the odds ratios must therefore be multiplied by a scale factor, depending on the category. figures 1-3 show the relationships.

when Islander bouncers were present tended to be more severe, but the odds of non-physical aggression were not increased. There are at least two reasons why Islander bouncers may be particularly involved in violence. First, they comprise an underclass in Australian society and are often in the country illegally (Howard. 1990). Therefore, they may be more vulner-

able to pressure from management to "do the dirty work." Second, their home cultures were traditionally rather violent, with fighting (especially revenge killings) being the most common kind of interaction between communities (Oliver, 1989). Violence was particularly important as a means of enhancing the status of young men desiring to enter full adulthood, and it is likely that the strong connection between violence and manhood remains as a cultural trait influencing behavior (as of course it does in other cultures as well).

Staff intervention with intoxicated patrons increased the odds by about 13 of non-physical aggression relative to the odds when no drunk patrons were present, with a lower 95% confidence bound of 1.8. Intervention, which was observed on 13.6% of visits, could take the form of offering a non-alcoholic drink, food, or alternative transport, but these were rarely observed. The most common form of intervention (11 cases out of 20) was to refuse service, which the analysis suggests was associated with markedly higher rates of physical violence (the odds ratio was over 300, with a lower bound often). This does not mean that refusal of service necessarily caused the violence—although this was observed on some occasions—but that visits during which refusal of service was observed were also characterized by much higher levels of physical violence. It seems that intervention with drunken patrons is associated with arguments and verbal abuse, and that refusal of service may directly or indirectly lead to physical assaults. This is consistent with the findings of Felson et al., (1986), MCM *research* (1990), and Stockwell et al., (1993). It is also likely, of course, that the association also works in reverse; patrons who become violent are refused service.

The overall level of server responsibility, rated by the observers as the final item on the schedule, was a strong predictor of physical violence, but not of non-physical aggression. Figure 1 shows the elevated odds ratios for visits when the servers were rated from "not responsible at all" (7.5% of visits) to "not very responsible" (23.8%). The lower 95% bound on the odds ratio for the "not responsible at all" category was 25. Of course, it is quite possible that the rating in some cases reflected observed violence, since one of the criteria for responsible serving is the use of strategies to avoid problems flowing from excessive drinking, including assaults. Accordingly, the association may be to some extent artifactual. This issue was examined by analyzing within-premises variations in ratings of responsible service in relation to the occurrence of aggression and violence. It seems from this analysis that aggression and violence may have

influenced the rating but that other factors entered in. since low ratings were given for some visits when no incidents were recorded.

The provision of breathalyzers for self-testing purposes would be seen by most commentators as an aspect of responsible serving. However, the logistic analysis suggests that in establishments where such machines were present and obvious (15 visits), the odds of aggression and violence were, respectively, about 60 and 15 times higher than when such machines were not present or were present but not obvious (with lower 95% confidence bounds of 6.6 and 1.3, respectively). It is possible that these machines in obvious places encourage drinking competitions and horseplay. It is also possible that establishments frequented by heavy drinkers are more likely to install them and. moreover, that they help to prevent drinking and driving (Homel, 1988).

One of the most interesting outcomes of the analysis was that male drinking, as measured by shouting rates, and male drunkenness were strongly associated with aggression but only weakly associated with physical violence. The relationships are shown in Figures 2 and 3. (The confidence limits for physical violence in both figures are very wide, so that the lower bounds fall below 1.0 for drunkenness and just above for shouting.) This finding is consistent with the 1989 qualitative research (Homel et al., 1992), which suggested that drunkenness was a prime risk factor for violence only when promoted *en masse* by discount drinking practices, or when other risk factors were operating, such as boring entertainment or aggressive bouncers.

The remaining risk factors from the logistic analysis were late closing (odds ratio for aggression of 13.7 with a lower bound of 2.5), and discreet necking as an indicator of sexual activity (observed in 18.4% of visits and associated with an odds ratio of 7.3 for violence [lower bound 1.3]). More extreme sexual activities short of intercourse were observed, but these were recorded in too few cases to reach statistical significance.

Figure 1: Odds Ratio of Incident to No Incident for Responsibility Relative to Very Responsible

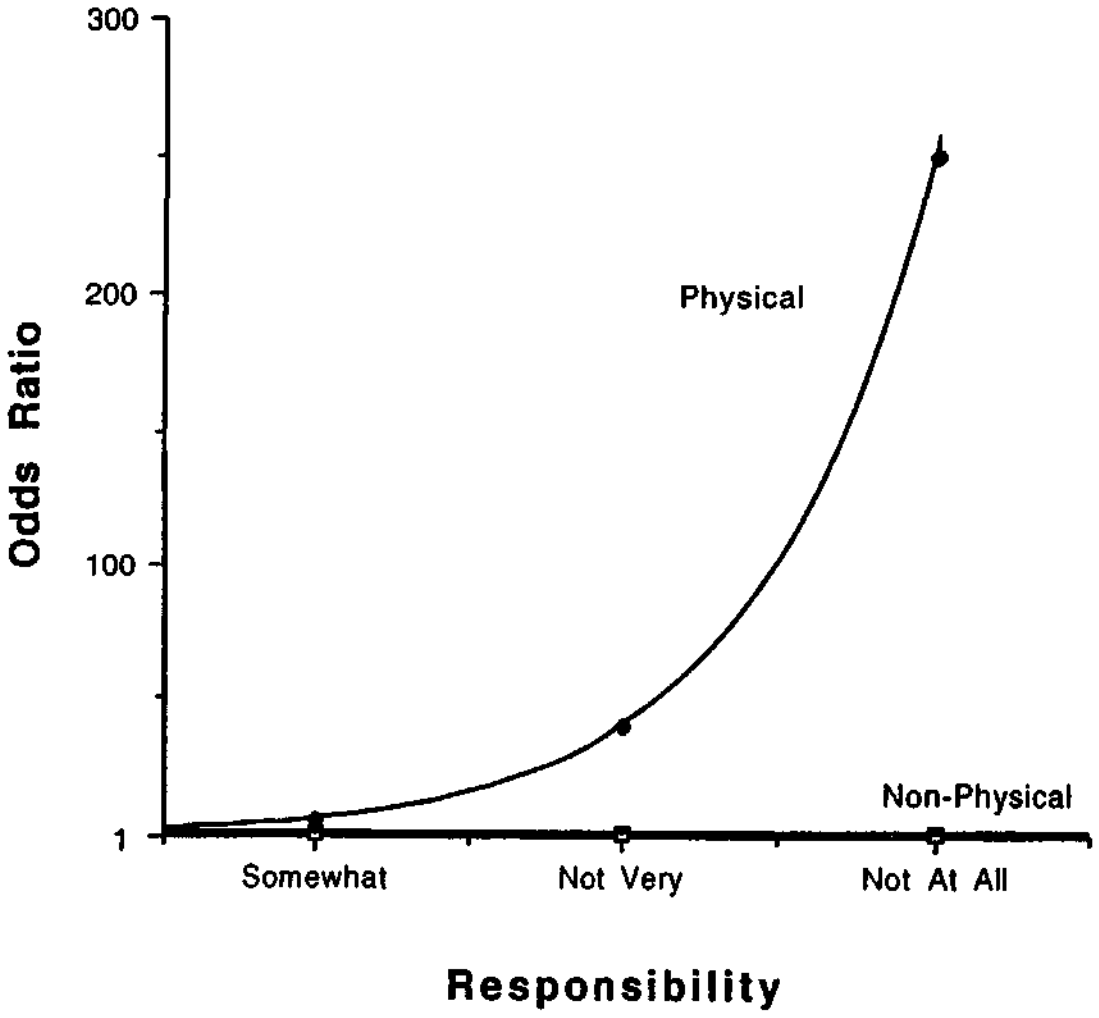


Figure 2: Odds Ratio of Incident to No Incident for Drunkenness Relative to Very Low Drunkenness

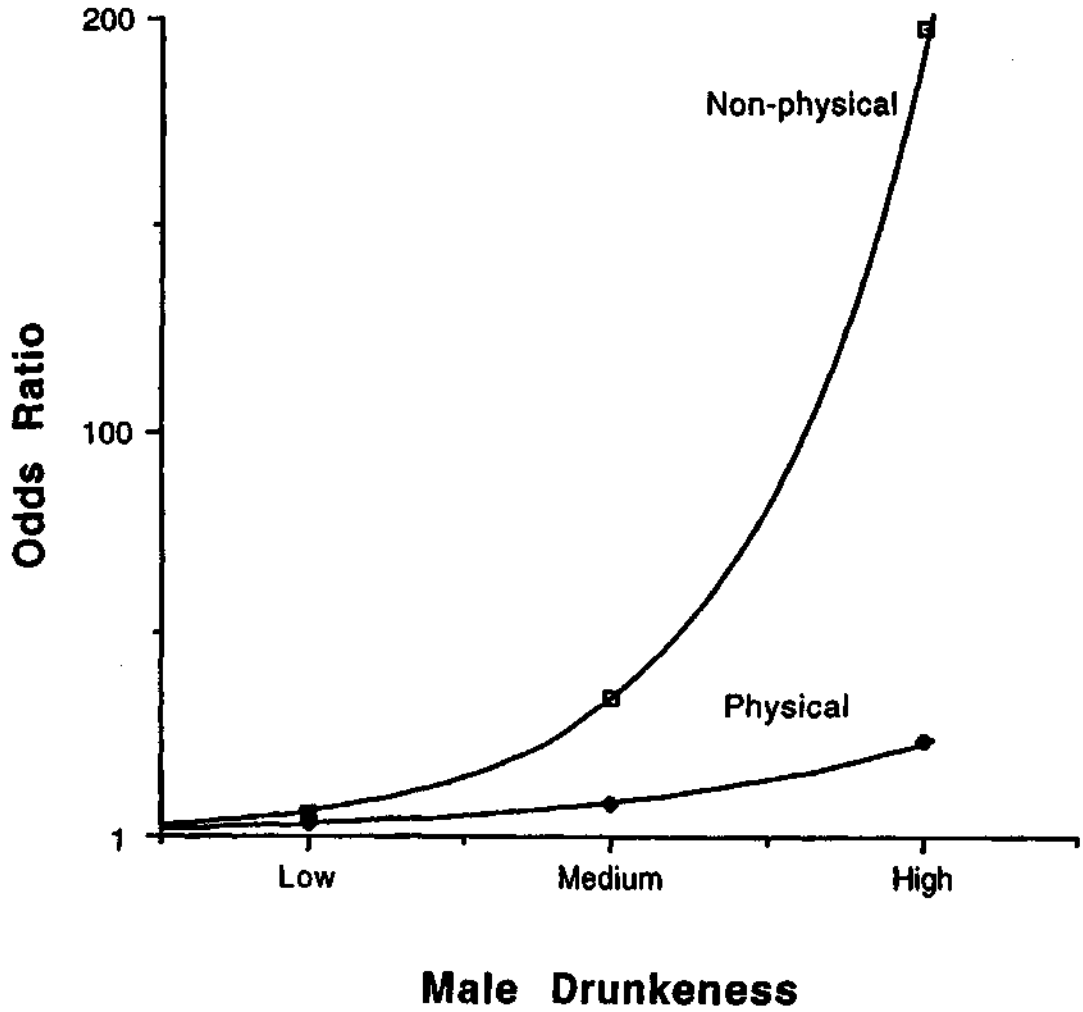
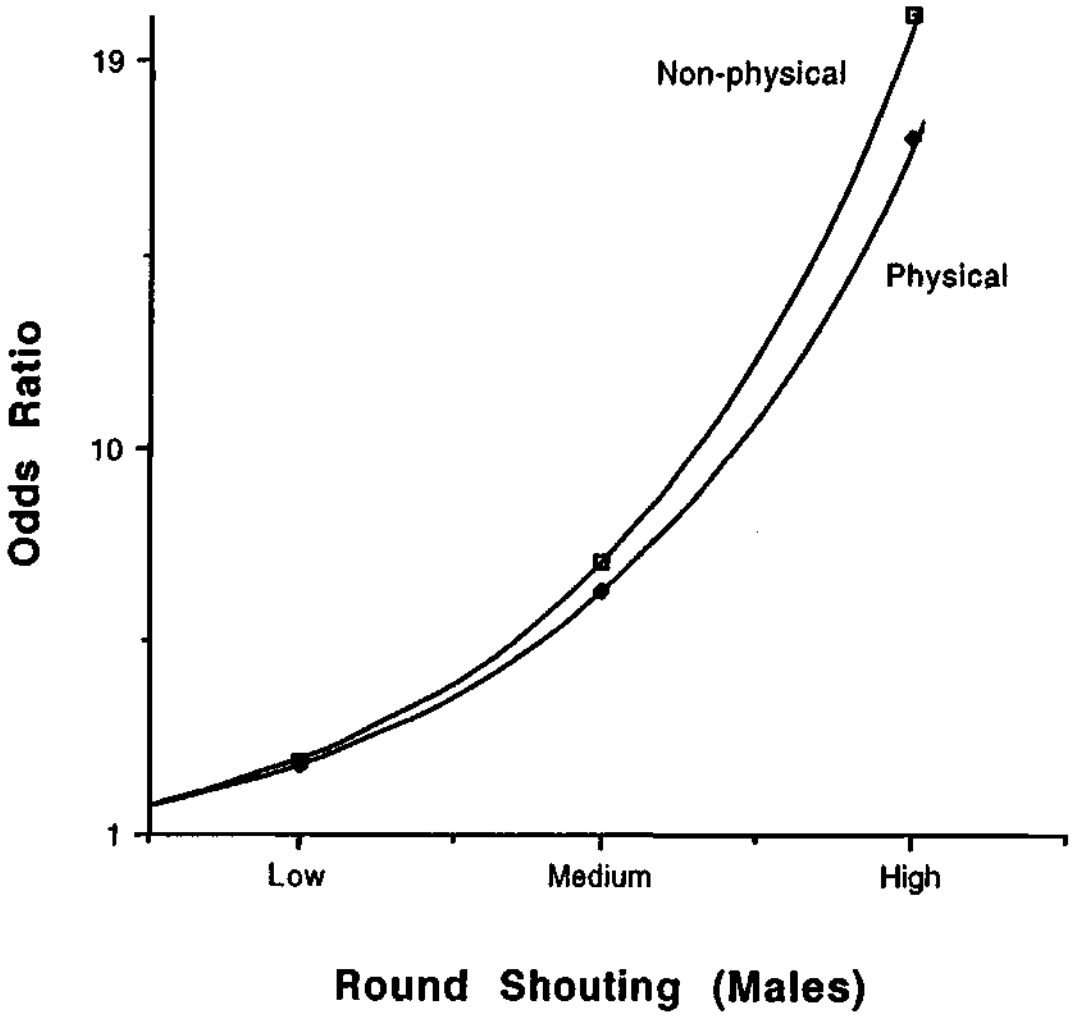


Figure 3: Odds Ratio of Incident to No Incident for Round Shouting Relative to No Round Shouting



DISCUSSION

Overview of the Study

One could spend many hours in most Sydney clubs and hotels without observing any physical violence. Verbal abuse, arguments and other forms of non-physical aggression are, naturally enough, more common, but are still relatively rare events. In the average non-high-risk premises, the chances of witnessing even a mild physical assault in a two-hour visit are of the order of .05. Despite these low odds, however, a patron who visited such a hotel or club regularly—for instance, 20 times over a year for two hours at a time—would have nearly two chances in three of observing at least one physical assault of some kind. If visits were for four hours duration instead of two, the probability of observing at least one assault would rise to nearly 90% over 20 visits. Of course, in high-risk premises assaults will almost certainly be observed far more quickly and frequently.

When considering the data, the limitations of the study must be kept in mind. Although designed to provide a quantitative replication of the earlier qualitative research of Homel et al. (1992), aspects of the research design—such as the inability to calculate formal measures of intercoder reliability, the over-sampling of high-risk premises, and the bias toward pre-midnight observation periods—mean that caution must be exercised in generalizing the results of the statistical analyses. Nevertheless, there are legitimate grounds for cautious generalization, particularly since so many of the results are consistent with the (admittedly limited) body of observational and survey research on violence in licensed premises. Despite the differences in sampling methods, the rate of violence, at 9.7 incidents per 100 hours observation, is close to the earlier figure for Sydney of 10.7, and comparable with the Vancouver rate of 7.9, which was based on a random sample of premises (Homel et al.. 1992: Graham et al.. 1980).

The incorporation of a high-risk/low-risk factor in the analyses provided a control on the sampling bias. That this factor was not significant after adjustment for other factors suggests that the over-representation of problem premises is not something that complicates the interpretation of the relationships between the independent and dependent variables. Indeed, if the high-risk premises had not been included, too few cases of aggression and violence would have been observed to permit reliable

analyses. The bias toward earlier times for observation has the effect of providing a partial correction to the tendency in the sample to overestimate the incidence of aggression and violence. Nevertheless, it is clear that given the uncertainties in sampling, it is not possible to provide more than a rough estimate of the probability of an aggressive or violent incident on a random visit to a randomly selected establishment. It is also clear that aggression and violence are much more frequent in a small minority of establishments, but that even in the worst premises there may be long periods when no incidents occur. This finding is consistent with the previous observational research and also with research into "hot spots" of crime based on police data (Sherman et al., 1989).

The strongest correlates of physical violence grouped into three classes: variables related to the type of establishment (high risk/low risk, running a discotheque, and having crowded bar areas); social climate variables (sexual activity, hostility, swearing, roughness and bumping); and variables describing staff or staff-patron interactions (inadequate numbers of bar staff relative to the crowd. Pacific Islander bouncers, refusal of service to intoxicated patrons, and low levels of server responsibility). The multivariate analyses suggested that of these variables, those related to the *management of Intoxication* are the most potent predictors. Intoxication itself, whether measured directly through ratings of male drunkenness or "round shouting" by men, or indirectly through late closing or the presence of a visible breathalyzer, was related more to non-physical aggression than to physical violence.

In any analysis of this kind, it is always very difficult to separate the effects of patron, management, and situational variables. In the present study, patron characteristics, such as the percentage of underage females, were judged in a global fashion and may not have captured some of the more subtle aspects of patron mix, such as groups of males who are strangers to each other (Homel et al.. 1992). which were highlighted in the qualitative research. Nevertheless, it is striking how few patron variables were strong predictors of aggression and violence, and that only aboriginally survived in one multivariate analysis. This may be partly because the sampling frame directed attention to premises that by and large provided entertainment for young people, so that patron mix was standardized to some extent. But it may also be that impressions that problem pubs attract much the same type of clientele as non-problem premises are substantially correct. Premises which attract a high proportion of aboriginal patrons are clearly an exception to this, and if more such

premises had been included in the present study this factor would have loomed larger (d'Abbs et al., 1993).

Similarly, none of the physical environment variables and only one social climate variable (to do with sexual activity) added predictive power when the effects of management and drinking variables were controlled. This does not mean that none of these variables have a causal relationship with violence, especially since more detailed study of factors such as crowding is required to elucidate their impact. For example, in a study of nightclubs Macintyre (1993) found that premises could experience similar levels of crowding but differ how efficiently patrons were channelled between entrances, exits, bars and toilets. These "people-flow" factors had a direct effect on unintentional physical contacts leading to aggression and violence. Nevertheless, the present analysis suggests that the effects of crowding may be mostly indirect or secondary, a view consistent with the survey data of Stockwell et al., (1993). The finding that roughness, bumping, swearing, rowdiness and hostility were not significant when adjusted for the variables in Table 2 supports the observation of Homel et al. (1992: 686) that despite their high zero-order correlations (on an aggregate basis) with aggression and violence, and "...despite all the myths, rough pubs with plenty of rowdy behaviour [which would include the local workingmen's pubs celebrated in Australian folklore] are not necessarily violent."

A central objective of the present study was to clarify the role of intoxication, especially when a high proportion of patrons are affected. The results are on the whole consistent with the qualitative study, which suggested that drunkenness usually only leads to violence when other risk factors, such as aggressive bouncers or high levels of frustration due to a lack of food and comfortable seating, are also present. The present analysis does not allow interaction effects to be tested statistically, but suggests several indirect ways in which drunkenness may lead to violence. First, it is clear that male drunkenness is a major predictor of non-physical aggression, which is in turn strongly correlated with physical violence on an aggregate (per visit) level. Second, the male practice of shouting drinks in rounds is implicated in both physical and non-physical aggression. The factors leading to aggression and violence in this case may have as much to do with the behavior of men in groups as they do with intoxication, but since round shouting was correlated moderately (.27) with drunkenness for men. drunkenness may lead to violence through shouting, and vice-versa. Finally, and most clearly of all, drunkenness may lead to violence

through attempts by staff to control it through refusal of service. In this respect the present analysis extends the qualitative research, which highlighted other aspects of the counterproductive role of management—especially aggressive and poorly trained bouncers.

Implications for Prevention

The rather indirect role of intoxication in violence revealed in the earlier research led Homel et al. (1092) to emphasize that although controls on consumption have an important place, especially in preventing mass intoxication caused by irresponsible discounting and alcohol promotions, the top priority should be better management of the whole range of risk factors leading to violence—badly trained and aggressive bouncers, lack of comfort, crowding, inadequate food and seating, and so on. The present study does not contradict this general conclusion, but suggests that relatively more emphasis should be placed on effective strategies for dealing with intoxication. The basis of this conclusion is the fact that in both statistical models variables relating to intoxication and the management of intoxication account for most of the variance.

Should High-Risk Premises Be the Target?

The immediate question that arises is whether all drinking establishments should be targets for intervention, or whether only high-risk premises, which appear to account for the great majority of the problems, should be the focus. There are several aspects to this question.

First, the impression that a small number of premises generate most of the violence is to some extent an artifact of the method used in the study, which is based on a "snapshot" of events over a restricted period of time. While it is quite true that high-risk pubs or clubs generate assaults out of all proportion to their numbers, it is also true that for every "hot spot" there are several dozen, possibly hundreds, of medium- or low-risk premises. As we have seen, these "ordinary" establishments also generate violence over time, although at a much slower rate, and because there are so many of them relative to the high-risk premises, they probably account, over a year, for a substantial number of violent incidents. The only way of determining with certainty the share of assaults attributable to high-risk premises would be to conduct a complete census of such incidents and their locations over an extended period. While such a census is an impossible ideal, it is likely that a thorough survey of accident and

emergency rooms in all the hospitals in a city would provide approximate estimates of how many of all the assaults occurring over a year emanate from high-risk versus other kinds of premises.

A concentration on high-risk premises also raises some ethical concerns. Training for owners, managers and staff in the responsible serving of alcohol is based on two basic premises: that management will act in their own interests, and therefore will want to stay within the law and not become embroiled in a liability suit; and that management should be concerned with the safety, health, and social well-being of their patrons (Simpson et al., 1987). One of the most striking features of most of the licensed premises visited in the present study—not just the high risk ones—is how exploitative management practices can be. One gains the distinct impression that a desire to maintain or increase profitability and to avoid trouble with licensing and other authorities are the primary motivations for most of the observed practices, and that there is very little sense of "duty of care" to patrons. This is one reason why Australian programs designed to improve the environments of licensed premises have such names as "Patron Care" (Carvolth, 1988) and "Freo [Fremantle. Western Australia] Respects You" (Stockwell et al.. 1993). Even the phrase "responsible serving of alcohol" reflects a clear ethical stance that management does have a duty of care to patrons and to those who may be affected by their actions. The attitudes and practices of *all* licensees, not just those responsible for high-risk premises, need to be challenged and modified so that the culture of the whole industry can, over time, be transformed. In addition, patrons themselves need to be educated through responsible hospitality programs that they are worthy of respect and should be accorded respect as a matter of course.

Recognition that licensed premises are part of a larger industry with numerous interconnections, and that both licensees and patrons circulate widely throughout this industry, highlights a practical difficulty with concentrating solely on high-risk premises. The difficulty is that, in practice, it is almost impossible to impose special conditions on some premises but not on others. If, for example, one or two high-risk establishments in a locality were targeted for staff training in responsible serving practices, it is very likely that the managers or owners would very quickly make vociferous complaints to their industry association or to local politicians. Indeed, recent experience with a community-based program in an international tourist location in Australia (described further below) strongly supports the argument that only when interventions are

open, equally applicable to all venues, and supported by all or nearly all local licensees do they have any chance of success (Mcllwain, 1994). This, of course, is in a context where there are neither legislative incentives (such as dram shop liability laws) nor civil liability precedents to encourage compliance with such innovations as responsible serving practices.

Given the difficulties of attempting to improve practices in high-risk premises through education or community development processes, it is possible that if authorities were prepared to use a "selective-incapacitation" policy violent incidents in and around high-risk premises could be quickly reduced or eliminated. Homel and Tomsen (1991) recommended that continuous operation of a violent venue should be an offense leading to cancellation or suspension of a liquor license, a policy which some jurisdictions have attempted to implement (Stockwell, 1993b). Evaluation data on the effectiveness of this policy in reducing violence appear to be lacking, but common sense suggests that it should have considerable deterrent value. However, the possible problem of displacement to other venues would remain, even if one could envisage a social climate in Australia in which selective incapacitation were to be used routinely by liquor licensing authorities. The ideal, perhaps, would be to combine effective interventions in high-risk *and* other establishments, using the threat of loss or suspension of license in the event of regular violence as a potent incentive for participation by problem licensees.

On balance, an across-the-board policy of intervention seems appropriate in wet cultures such as Australia, where legislative and enforcement supports for public health objectives relating to alcohol are very limited. This policy is not inconsistent, however, with devoting some special attention to high-risk premises, to the extent that such attention is tolerated by licensees or licensing authorities.

Preventing and Managing Intoxication

Strategies for dealing with intoxication may aim to: (1) prevent all drunkenness; (2) prevent mass intoxication due to such practices as high cover charges combined with cheap drinks; or (3) more effectively manage drunk patrons, and. in particular, to avoid violence when refusing service. Logic suggests that it would be more effective and less costly to prevent intoxication "upstream" than to attempt to deal non-violently with scores of intoxicated patrons.

Responsible beverage service programs, which have as objectives both the prevention of intoxication and refusal of service to already intoxicated patrons, have proliferated in North America in recent years. This has occurred partly because of licensing requirements in some jurisdictions, but more importantly because of licensees' desire to reduce their exposure to multimillion dollar law suits arising from vicarious liability over the actions of patrons served to intoxication on their premises (Stockwell et al.. 1993). These programs employ a variety of techniques to prevent intoxication, including: observing patrons and being able to recognize intoxication; promoting non-alcoholic and low-alcohol drinks; serving well-priced, attractive, and well-marketed food low in salt content; and training staff in techniques for monitoring patrons and adjusting service as necessary. Training is also provided in refusal of service to patrons who are intoxicated or who show signs of becoming intoxicated. Bar staff are trained in offering positive alternatives, such as soft drinks or food at discounted prices, and both management and staff are trained in negotiation techniques with patrons who are becoming difficult or aggressive. The importance of a well-publicized "house policy" to provide a positive context for responsible serving practices and for negotiation with patrons is emphasized (Simpson et al., 1987).

The small number of rigorous evaluations of responsible serving programs that have been published suggest that positive effects on levels of intoxication and on alcohol-related problems can be achieved. Saltz (1987), in an evaluation of an experimental 18-hour training program in a U.S. Navy base, reported that the likelihood of a customer being intoxicated was cut in half, although for the establishment as a whole absolute consumption and the rate of consumption were not affected. Wagenaar and Holder (1991) used multiple time-series analysis to establish that a sudden change in exposure to legal liability of servers of alcoholic beverages in Texas resulted in significant declines in injurious traffic crashes. They speculated that this result was achieved because managers suddenly had an incentive to implement server training programs. Putnam et al. (1993) report the results of a very comprehensive community intervention on Rhode Island, which resulted in a 21% reduction in emergency room assault injury rates in the intervention site compared with a 4% increase for the comparison communities. Motor vehicle crash injuries were also reduced. The community intervention involved server training as well as publicity campaigns, local task force activities, and community forums, and was supported by training of police

and increased levels of enforcement with respect to alcohol-related accidents and crimes.

It is noteworthy that most of these responsible-serving programs operating in the U.S. were supported by legal sanctions or were embedded in broader community interventions. The crucial role of enforcement is highlighted by two evaluations of the effects of police activity on licensed premises. Jeffs and Saunders (1983) report a study in an English seaside resort which examined the impact of uniformed police dropping in at random intervals two or three times a week and very conspicuously checking (in an amiable way) for underage drinkers or intoxicated patrons. Compared with a control area, there was a decline during the intervention period of approximately 20% in all arrests, with the most marked effects being on public-order offenses known to have the highest association with alcohol. McKnight and Streff (1994) show that intensive undercover police operations—preceded by education of licensees about the enforcement activities, after-visit reports to licensees not cited, and media publicity—resulted (in comparison with a control county) in greatly increased refusals of service to "pseudo-patrons" simulating intoxication and a marked decline in drunk drivers who had been served at the target establishments.

The huge problem in "wet" countries such as Australia is that there are no legislative or economic reasons for the alcohol industry to embrace responsible beverage service practices. As Stockwell et al. (1993:161) remark, "Civil law suits are about as likely in Australia at present as being struck three times by lightning on the same day." Every state and territory in Australia has a Liquor Act which, in one form or another, prohibits the sale of alcohol to intoxicated persons, but /..there is a tacit agreement by all involved in the management, regulation and policing of licensed premises to quietly ignore the law regarding service to intoxication—providing the intoxicated person is not causing a nuisance to other customers" (Stockwell et al., 1993:156). This is not a new situation, of course, and reflects the historic fact that the regulatory system is undergirded by notions of the deserved misfortune of victims of pub violence, as well as the belief that liquor licensing legislation is not capable of achieving social objectives such as the prevention of violence (Homel and Tomsen, 1991).

Community Interventions: The Surfers Paradise Safety Action Project

In the absence of effective official external regulation, one way of bringing pressure to bear on licensees to introduce more responsible

practices is to use the local community as a lever (Victorian Community Council Against Violence. 1990). A recently completed community project in southeast Queensland, which had as its major aim the reduction of alcohol-related violence in a major international tourist area with approximately 20 nightclubs surrounding a single mall, illustrates the value of this approach (Mcllwain. 1994).

The Surfers Paradise Safety Action Project was based on three major strategies:

(a) The creation of a community forum, and the consequent development of community-based task groups and the implementation of a safety audit;

(b) the development and implementation of risk assessments in licensed premises by the project officer and the Queensland Health Department, and the consequent development and implementation of a code of practice by nightclub managers: and

(c) improvements in the external regulation of licensed premises by police and liquor licensing inspectors, with a particular emphasis on preventive rather than reactive strategies, and a focus on the prevention of assaults by bouncers as well as compliance with provisions of the Queensland Liquor Act prohibiting the serving of intoxicated persons.

The project largely succeeded with the first two strategies, but, not surprisingly, achieved less success with the third (Mcllwain, 1994). Even so, evaluation data suggest that the project succeeded in reducing physical assaults in Surfers Paradise nightclubs from 9.8 per 100 hours of observation before the intervention to 4.7 per 100 hours observation after the intervention (Homel et al., in preparation). Of most direct relevance to the present paper, the Venue Management Task Group was able to establish a Monitoring Committee, consisting of local community and some external representatives but not police or the liquor licensing authorities. The committee oversaw, regulated and arbitrated a code of practice which was developed by the nightclub managers themselves as a response to the project. The Venue Management Task Group also: resolved major professional conflicts between police and licensees; integrated a group of licensees who were previously alienated from each other; and organized training for licensees in management practices, development of house policies, responsible serving practices, and management of security staff.

The Monitoring Committee represented the culmination of the local community's attempts at self-regulation. It came together on several

occasions to address such issues as free drinks, inappropriate sexual behavior in public by patrons following a nightclub strip show, advertising of "specials" on alcohol, and overcrowding (Mcllwain, 1094). Essentially the committee, as an informal regulatory body, attempted to fill the gap created by the withdrawal of both police and the Liquor Licensing Division from the collection of evidentiary information which could result in successful legal action against deviant licensees. The committee also applied "peer pressure" to some licensees in a partially successful attempt to persuade them to comply with the code of practice. The committee could not compensate entirely for the deficiencies in police and liquor licensing enforcement, but it did achieve more than would have been possible otherwise.

The code of practice developed by the nightclubs focused on: security, safety inside and outside the venue, staff responsibilities, the responsible use of alcohol, quality service and entertainment, and honest and accurate advertising. Under the security heading, the code committed management to ensuring that all security staff were trained, registered and identifiable, and it gave priority to the well-being of patrons. Physical violence, harassment or threat were prohibited, and it was made clear that the police would be called immediately if any act of serious violence occurred. Moreover, any patron who felt threatened or harassed was to be encouraged to immediately inform security staff. These good intentions were supported by training for security staff conducted by a professional group (Advanced Techniques. 1994). The comprehensive training program emphasized such things as empathy in communications, being non-provocative, and evaluating before acting. It was made absolutely clear that violence should be avoided, and legal obligations under state government legislation were considered at length. A deficiency in the training was the failure to examine the critical links among masculinity, alcohol use and violence, a key issue not only for Pacific Islanders but also for other security staff who cultivate a "macho" image of themselves. However, the evaluation data did confirm that the behaviour of bouncers greatly improved (Homel et al.. in preparation).

The evaluation data also confirmed that the code of practice encouraged investment in better quality entertainment, which reduced reliance on sexual titillation and alcohol promotion to attract patrons. Probably the most significant outcome of the Project was the marked reduction in levels of intoxication, due in no small measure to the abolition of free

drinks and extreme price discounting, combined with substantial efforts to prevent the serving of patrons to intoxication.

CONCLUSION

Intoxication, and the management of intoxication, are from the present analysis key situational factors increasing the risk of violence in and around licensed premises. These factors are embedded in a range of other situational variables and management practices, which, in turn, reflect the historic neglect (at least in "wet" cultures such as Australia's) of the impact of drinking environments on public health, as well as a cultural tendency to blame the victims of violence rather than the regulatory systems and political attitudes which perpetuate the problem. In the long term, the key to reducing violence in licensed premises is to modify the central situational risk factors through effective enforcement of existing laws and the development of liquor legislation which makes the promotion of public health central to its objectives. In the short term, community-based action that promotes the development of codes of practice to encourage a better social climate in all licensed premises, not just the minority of high-risk establishments, is a practical and cost-effective strategy.

Top priorities should be better-trained bouncers and bar staff, and the introduction of responsible serving practices which reduce the risk of patrons becoming intoxicated. These measures have considerable violence-reduction potential, provided compliance is carefully monitored by an authoritative local committee or by the responsible external authorities.

Acknowledgements: This study would not have been possible without the enthusiastic cooperation of students under the principal author's supervision in the School of Behavioural Sciences at Macquarie University. These students should be regarded as joint authors: Susan Bowry, Melinda Bradley, Melissa Bruce, Catherine Burn. Michael Corbin. Debbie Davis, Bruce Dufficy, Ashleigh Hooker. Rebecca Howarth, Olga Jakubovsky, Michael Kreamer, Adam McElnea, Jenny Melrose, Bettina Migus. Laura Moreira, Narelle Nichelsen, Kylie O'Brien, Kim Patrick, Emma Ryan, Kathy Shymko, Troy Speirs, Jennifer Taylor, and David Walsh. Thanks also to Marg Hauritz, Gillian Mcllwain, Tim Stockwell and Ron Clarke for helpful comments on an earlier draft.

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