THE EFFECTS OF TAVERNS AND LOUNGES ON HOMICIDES
IN RESIDENTIAL AREAS

by

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CHAPTER I

INTRODUCTION

Roncek and Bell (1981) examined the effect of bars or taverns on the total of all Part I crimes and the total of violent crimes. They found that the residential city blocks with bars had more crimes on them than the blocks without bars in Cleveland, Ohio for 1970. The effect of bars on crime was positive and statistically significant after controlling for several demographic, social and physical characteristics of blocks. Their findings supported theoretical arguments that increasing the number of people in residential areas would be associated with more crime. This argument originated from studies of how urban environment hindered effective social control (Wirth 1938; Cohen and Felson 1979; Hope 1985).

Roncek and Bell's results are consistent with findings of studies focussing on the effect of the environment on crime (Hope 1985; Wolfgang 1958; Cohen and Felson 1979). Yet, their analyses do not permit identifying whether bars affect specific types of crime. Crimes differ by the motives, locations, targets and victims involved. My analysis will examine if similar relationships will emerge in the study of the environment

and homicide.

This study will replicate the work of Roncek and Bell, but will differ from their work in three specific ways. These are: 1) I will examine if Roncek and Bell's findings are limited to a specific time or if similar patterns are present for Cleveland ten years later; 2) I will analyze whether there are different effects on homicide for establishments that label themselves as either cocktail lounges or taverns; and 3) I will investigate whether the findings of Roncek and Bell are applicable to homicide.

Apart from Roncek and Bell's (1981) work, there is little research on how liquor establishments, taverns or cocktail lounges affect crime in other cities and other times. Thus, their findings may only apply to Cleveland, Ohio in 1970. If so, then the usefulness of their findings for advancing a more general understanding of urban crime patterns is very limited. If my study shows that similar patterns emerge with 1980 data, then the consistency of such findings will provide a stronger basis for public policy in Cleveland and for examining this relationship in other cities.

Studies by Roncek and Bell (1981), Frisbie et al. (1977), and Hope (1985) suggest that the presence of liquor establishments increases the amount of crime on

residential blocks. Studies that mention liquor establishments (see Hope 1985) often do not distinguish between types of liquor facilities (Roncek and Bell 1981 and Frisbie et al. 1977). Trouble spots identified by Hope (1985) in England distinguish between pubs and clubs, cocktail bars (which attract a better class of customer), and dancehalls. Because there are so few studies, more research is needed to determine whether a link exists between these trouble spots and specific crimes occurring near these locations, and to see if similar patterns hold for cities in the United States. Whether there are differences between the effects of those liquor establishments whose managers chose to self-label their businesses as either a tavern or cocktail lounge is not clear. If significant differences are found, they could be important for future urban crime studies and policy. It may be that crimes cluster around specific types of liquor facilities, but not others.

Roncek and Bell (1981) find that the effect of bars on crime appears to be general rather than specific to any type of crime, however, they also note that the low frequency of homicide used in their analysis could account for the lack of statistically significant differences in the average number of homicides between bar blocks and those without bars. Furthermore, it is

important to understand how bars can affect the occurrence of specific crime types. Only through such understanding can prevention measures be directed sensibly and with realistic expectations. This study will focus on the most serious of crime types, homicide.

THEORY

A central concern of theory in urban sociology is with social control. Wirth (1938) focussed on the predominance of secondary over primary contacts in the city. He claims that this pattern leads to a spirit of competition and exploitation. The substitution of secondary contacts for primary contacts weakens the bonds of kinship, neighborhood and social solidarity. The difficulties of relying on informal social controls necessitates more use of formal control mechanisms to maintain social order and to prevent deviant acts, such as crime.

Social control is an important concern in urban areas because traditional mechanisms for maintaining social order can be less effective than in smaller places. The occurrence of criminal activity in different locations can be influenced by the amount of social control and guardianship in areas of a city (Cohen and Felson 1979). Guardianship occurs when individuals

formally or informally enhance one another's safety.
Activities that occur near places of residence may
provide a lower risk of victimization because
guardianship and supervision of areas by neighbors and
store owners may be higher than in other areas of the
city (Cohen and Felson 1979; Jacobs 1961). Cohen and
Felson note the importance of suitable targets that
converge with offenders and guardians in particular types
of areas. In the absence of capable guardians, crime is
more likely to occur (Cohen and Felson 1979).

Cohen and Felson (1979) examine how the different
routine activities of people affect crime. The routine
activities of individuals and groups in different areas
of the city can influence criminals' decisions to commit
crimes (Cohen and Felson 1979). In areas in which the
routine activities of residents are focussed on the
residential area itself such as in neighborhoods with a
high concentration of families with children, crime can
be difficult to commit. Residents can know each other
well enough to distinguish strangers from residents and
to observe and question other individuals with whom they
are not familiar. By contrast, in areas with few
families in which the routine activities are focussed on
locations other than the residential area, residents may
know few of their neighbors and seldom pay attention to

or question individuals they do not know. The latter
situation allows those willing to commit crimes easier
access to persons and property than does the first.

Jacobs (1961) argues that in busy environments
people may question the presence of strangers or watch
their activities with interest. Yet, guardianship may
decrease if, as a result of the presence of large numbers
of people, residents are less able to recognize neighbors
(Roncek 1981).

Felson (1987) expands the "routine activities"
approach with the addition of the concept of the
"intimate handler". "Intimate handlers" enforce a form
of social control over potential offenders. If offenders
are not under the supervision of the "intimate handler"
deviant behavior can result. Thus, the "intimate
handler" can play an important role in crime. An
offender "must shake loose from the parent or handler,
then find a target for crime unmonitored by the guardian"
(Felson 1987, pp. 912-913). Individuals can escape the
"intimate handler" by going away from home to places such
as to taverns and lounges.

Hope (1985) adds a more direct spatial aspect to the
"routine activities" approach through his concept of
"trouble spots". He claims that areas which are
unsupervised invite opportunity for trouble. His concept

is directly related to the utilization of different types of areas in cities. Specific types of land uses can draw people to an area and impede social control. The use of "trouble spots" may aggravate problems of social control and produce more crime. This idea parallels Wirth's (1938) position that the amount of people in urban areas makes social control more difficult. Large numbers of temporary users in areas can decrease and inhibit informal and formal forms of social control (Frisbie et al. 1977; Roncek and Faggiani 1985; Roncek and Lobosco 1983; Stark 1987).

In contrast, Jacobs (1961) proposes that strangers in an area can become assets on the streets in terms of safety, especially at night when more supervision may be needed. The use of sidewalks and streets in areas can provide increased contacts that can strengthen forms of social control. She argues that people can and will look after one another.

Hope's (1985) idea of "trouble spots" focusses on contacts that result in situational disorder. Trouble spots are shaped by forces of leisure, the design of particular areas, and the nature of commercial licensed trade in an area and, as he also notes, the routine activities of youth particularly in England where the drinking age is not twenty one as in the United States.

These forces make up a system that provides opportunity for disorder to exist in specific areas, that is, trouble spots. Hope (1985, p. 9) argues that crime will concentrate in these "trouble spots". Jacobs (1961) also notes that some commercial uses draw strangers who may not be assets to safety or social control.

Although much work on urban crime patterns (Roncek 1981; Roncek and Bell 1981; Roncek, Bell and Francik 1981; Roncek and Faggiani 1985; Roncek and Lobosco 1983; Hope 1985) relies on social control explanations, Pyle et al. (1974) question the importance of social control for crimes against persons. These crimes often occur between people who are in close or frequent contact and where practical opportunities to commit the crime are greatest. Yet, spatial patterns of behavior and social control may be overlooked in many homicide cases because of focussing so much on interpersonal relationships. Wolfgang (1958, p. 120) points out that researchers often fail to examine "the place where the fatal assault was sustained". This is an important oversight because the location of homicides can be part of the offenders' immediate environment and, as such, part of their routine activities.

Specific locations are conducive to homicides in urban areas. Wolfgang (1958, p. 125) identified public

streets as the most dangerous places based on the high
proportion of males killed on streets. He suggests that
this may be due to the high number of males on the
streets. He notes that, on streets, individuals
congregate to meet, travel to bars or other sources of
entertainment, or may be alone after taking a female home
from a date (Wolfgang 1958, p. 125).

Felson (1987, pp. 921, 924) argues that bars and
taverns are important facilitators of crime. First, they
draw people from other areas to the location of these
businesses. Thus, the larger number of people can make
social control more difficult in these areas. Second,
these businesses bring people into contact with each
other and this increases the potential for conflict which
can lead to crime. Third, the contacts between
individuals can take place while they are under the
influence of alcohol which can lower normal inhibitions
to the commission of criminal acts. Fourth, as gathering
places, they increase the concentrations of goods, such
as cars and cash in an area, which increases the number
of potential targets for criminal activity. Fifth, these
businesses must keep cash available and stock desirable
goods, liquor, which can be consumed personally or sold
easily if stolen. All of these activities may contribute
to higher risk of being victimized on and around street

areas. Some homicides occur inside or directly outside of liquor establishments, thus, such features are important to examine (Wolfgang 1958, p. 129).

A street system can expose people to excitement and chaos. Individuals participate in a variety of contacts and interactions on the street, including street corners or enroute to another place (Felson 1987). Neighborhoods with mixed land uses may produce increased opportunities for congregating outside of the home and on the street enroute to places conducive to criminal acts or deviance (Stark 1987).

The connection between environment, social control and the incidence of homicide deserves further study. Studying specific places where people are involved in social relationships or in other aspects of collective life may uncover influences involved in the differential frequencies of homicide in those places. The locations of where crimes occur depend upon victims and offenders being present in the same environment at the same time (Wolfgang 1958; Cohen and Felson 1979). This study will examine how one specific environmental feature, liquor establishments, affects the occurrence of one specific crime type, homicide.

DEVELOPMENT OF URBAN CRIME STUDIES

Over the years, urban crime research has evolved in sophistication. The development of crime research in urban areas began with the focus on maps and geographic location of crime. The Human Ecological School was developed by Shaw and McKay and their associates (1942, 1969). Their studies focussed on the physical and demographic characteristics of "natural" areas of crime and delinquency. Their use of gradients involved a series of concentric circles that radiated outward from the central business district, the area with highest land value. According to their analyses, crimes were found to decrease in direct proportion to the distance from the city center. Most crimes had high rates in the central zone and lower rates in the peripheral zones.

Pyle et al. (1974) extend the work of Shaw and McKay (1942) by including more independent variables and follow the lead of Schmid (1960 a,b) and Boggs (1965). Their analyses include measures of population distribution, socioeconomic levels, environmental change and the nature of land use. Wolfgang's (1958) classic work on homicide also briefly examined the specific place where the fatal assault occurs. Although the book concentrates on many aspects of homicide, including the race and sex of the

victim and offender, weapon used, hour of day, interpersonal relationships involved and motive, he also mentions the importance of examining the spatial distribution of homicide. He notes that analyzing the spation distribution of homicide is important because it identifies "the relative frequency of homicide occurring in these same places" (Wolfgang 1958, p. 133). Such information can be useful for focussing prevention efforts to specific areas.

Location in terms of distance from the central business district of a city explained little about crime occurrence. Environmental characteristics were added to mapping to enhance the description of where crimes occur and the understanding of the effects of the settings in which crimes occurred frequently. Tryon (1955), Shevky and Williams (1949) and Shevky and Bell (1954) focussed on developing typologies of the different types of neighborhoods in cities. These typologies were based upon components derived from measures of population and housing characteristics published in the decennial census reports. Tryon's cluster analysis relies on family life, assimilation and socioeconomic independence. Shevky and associates (Shevky and Williams 1949; Shevky and Bell 1954) used classifications based upon indexes referring to urbanization, segregation, social rank, integrating

measures of fertility, women in the labor force, single family dwellings, ethnic groups and measures of occupation and education. These efforts, which work on understanding the spatial distribution of the social characteristics of residential areas in cities, later became useful for research on urban crime.

Boggs (1965) used many of the characteristics identified by these typologies to study crime across the census tracts of St. Louis. She viewed the concepts of social rank, urbanization, and segregation, which she operationalized as the percentage of negro residents, as promoting anomie. For Boggs, environmental opportunities varied across census tracts. The specific variables to which she devoted the most attention are: education, occupation, the percentage of Negro residents, the fertility ratio, the percentage of single-family dwelling units and measures of the proportion of women in the labor force. In addition, she was the first researcher to analyze empirically and rigorously several measures of non-residential land use.

Other research on the spatial patterns of juvenile delinquency (Bordua 1958; Chilton 1964) continued to emphasize the importance of population and housing characteristics. Bordua interprets the statistically significant effects of poor housing conditions,

overcrowding, low socioeconomic status and measures of poverty and social disorganization as indicating the importance of the varying levels of anomie in different areas of the city for explaining juvenile delinquency. For Boggs and Bordua, the population and housing characteristics provide more detail and richer information regarding the conditions which facilitate crime than does distance from the center of the city.

Demographic characteristics from the Census Bureau refer only to those people who reside in an area. They do not take into consideration other people who may be involved in crime as either offenders or victims. Not all victims or offenders are residents of the area in which the crime occurs. Thus, there is a need to investigate the effects of other characteristics which can draw people to areas and which can facilitate the occurrence of crime.

Jacobs (1961) introduced the idea of behavior space and examined the use of residential areas. The focus of her work was on the importance of non-residential uses in residential areas. She proposed that stores, bars and restaurants can promote sidewalk safety. Strangers and residents have specific reasons for using the sidewalks on which the establishments are located. Also, storekeepers and businessmen can act as peacekeepers.

They wish to avoid damage to their shops and promote the safety of their customers. Activity generated by non-residential uses can attract people who help enhance safety. Social life becomes public and increased contacts can increase safety. The level of safety can depend on the type of non-residential uses. Some uses, such as high schools, increase contacts in a residential area throughout the day, while others such as taverns or cocktail lounges, can increase it in the evening or night.

Boggs' (1965) concern with non-residential uses centers on their effect in increasing the attractiveness of the areas as crime sites to offenders. Criminal offenses may be associated with business and commercial activities because the potential for gain from crimes in commercial areas can be more than could be obtained from strictly residential areas. Businesses keep cash readily available. People with cash come to the areas to conduct business. Many people are present in commercial areas who are stranger to one another. Boggs' use of non-residential data specifically addressed problems surrounding the use of crime rates. For crime occurrence to be measured correctly, she proposed that the base used for a specific crime should be related to land use involving the area in which the crime occurred.

Environmental opportunities for crime became her focus. She attempted to link the occurrence of crime in an area with the normal use of that area. Her concern was with how many people used a particular area on a day to day basis. Use of an area could then be used to predict the occurrence of crime, based on how many people used it, what type of people used it, and for what activities the area was used.

The bases for the crime rates for offenses against property were linked to the conduct of specific business and commercial uses. This estimation procedure, along with Boggs' "approximation-of-persons" base, provided a fuller picture of crime occurrence. One example of such a base is the "pairs of persons" base. This was used as a base for criminal homicide and assault, since these crimes involve both a victim and an assailant (Boggs 1965, p. 900). It assumed that "the greater the number of pairs of persons, the greater the opportunities for criminal homicide and aggravated assault".

Utilizing the routine activities approach to understand crime patterns, many studies, including Roncek (1981), Roncek and Bell (1981), Roncek and Lobosco (1983), Roncek and Faggiani (1985), Cohen and Felson (1979), and Felson (1987) have incorporated non-residential use into their analyses of property and

violent crimes using the routine activity approach to understand crime patterns. This type of analysis adds yet another dimension which enhances the framework used in understanding criminal offenses by addressing the issue of what draws people to specific urban areas and how these people can affect social control in different areas.

Roncek (1981) argues that a key component of urban crime is the effect of urban environment on social control. Wirth (1938) raised theoretical issues concerning the importance of size of the population, density and heterogeneity of a city as a catalyst for deviant behavior. He claimed that these characteristics served to increase anonymity in the city and weaken the level of informal social control. Jacobs (1961) mentions specific places within a city that provide settings for crime, including bars and other establishments of commerce, such as theatres, clinics, businesses and manufacturing. These types of places hinder observation and intervention by people when a crime is committed and thus provide opportunities for the occurrence of criminal behavior.

Cohen and Felson (1979) connect such places to their concept of guardianship by noting that guardianship can be affected by types of places involved as well as by

people's routine activities. They claim that the ease of observation and perceived likelihood of intervention in activities in an area can affect the potential criminal's decision to commit a crime. Detection, observation and intervention become important to the study of urban crime and possible prevention because much crime is situational (Cohen and Felson 1979; Frisbie et al. 1977; Hope 1985) and is influenced by available opportunities. The types of preventive action which could be effective can depend on the type of activity taking place and the characteristics of the area involved. The local organization and structuring of people and environments in cities can affect the amount of crime in their subareas by affecting the levels of social control. The connection between environment and crime justifies research into where crimes occur and how people use specific areas of the city.

Roncek and his colleagues investigated two specific types of non-residential land uses, high schools and bars (Roncek and Lobosco 1983; Roncek and Faggiani 1985; Roncek and Bell 1981). They claim that investigating the effects on crime of such places is important to city planning in which the issue of segregating non-residential land uses from residential areas is an important concern. They examine whether such places

represent an environmental threat which facilitates the occurrence of crime through weakened social control present in these settings. Such places generally have high levels of utilization that can make a place more "public" than other residential areas. They argue that there may be many other non-residential uses which are associated with increase in serious crime in large cities, which have been overlooked or underestimated in earlier studies of urban crime.

The influences identified by Roncek and others leave certain questions unanswered. In each study that focussed on a specific type of non-residential use (Roncek and Bell 1981; Roncek and Lobosco 1983; Roncek and Faggiani 1985), only limited attention was paid to the specific types of crime affected by non-residential location. The studies by Roncek and his colleagues do not examine the effects of non-residential land uses on a specific crime beyond differences in the average levels of specific crimes between blocks with and without particular non-residential uses. Their analyses focus on only two categories of crimes: violent and property or index crimes. Thus, it is not clear if there are distinct patterns for different types of violent crimes. If such unique patterns can be found, then prevention efforts can be targeted to specific crimes.

The most serious of all violent crimes is homicide. No greater harm can come to an individual than death. For homicide, the harm to the victim cannot be undone. The victim can neither avenge his crime, nor live to avoid similar situations that led to the crime.

Crime and disorder are concentrated situationally (Cohen and Felson 1979; Frisbie et al. 1977; Hope 1985). Bars may attract undesirable strangers to a neighborhood. Crimes can cluster around these establishments because of the types of persons and opportunities present. Pubs and clubs are often mentioned among the number of trouble spots where crime incidents take place (Hope 1985). Assaults and robberies often occur near such establishments. Relatively large amounts of cash are present in the cash register and on patrons who are either in or in the vicinity of bars. Also, individuals may commit crimes while under the influence of alcohol, that they would otherwise not commit while sober (Hope 1985; Frisbie et al. 1977).

Hope (1985) states that bars can influence crime in a number of ways. They can affect the time and places of the occurrence. Crimes in England often occur around closing time and the location of the occurrence is generally in close proximity to the bar. The characteristics of bars including crowding, pushing,

noise and heat, may contribute to disorder. Bars as
public spaces, conform to Jacobs' (1961) descriptions of
urban environments which are likely to be unsafe. Jacobs
does recognize that some bars are not unsafe places and
may actually encourage safety. Some establishments may
attract safe patrons, people who carefully choose with
whom they come in contact and share themselves socially
(Jacobs 1961, p. 58). Yet, as both Jacobs (1961) and
Roncek and Bell (1981) argue and demonstrate, bars can
also have negative effects on social control in areas.
People under the influence of alcohol can come into
violent conflict which can become homicidal. Decreases
in levels of social control could influence the
occurrence of homicide in an area. Comparing the effects
of taverns with the effects of cocktail lounges on
homicide is a first step in determining whether
distinctions should be made among businesses based on the
social and recreational use of alcohol. Lacking any
legal or established empirical distinctions among such
businesses, the best starting point involves using the
owners' attempt at image management. Further refinements
are warranted only once the most obvious distinctions are
examined. Using homicide as the indicator of the level
of effective social control is a severe test because of
its low frequency of occurrence.

For this study, I expect to find that establishments labeled as taverns and establishments labeled as cocktail lounges will both have positive effects on homicide occurrence. I anticipate that residential blocks with taverns and cocktail lounges will have higher occurrences of homicide than blocks without these uses.

Taverns and lounges are public spaces that, in attracting customers, bring potentially difficult-to-manage clienteles to the area (Hope 1985). Crowds tend to gather in these areas. Not enough proportional supervision may exist from police, staff and clients, leaving only the customers to supervise each other. The environmental character of taverns and cocktail lounges can lead to disorder. Crowding and the handling of customers can promote disorder due to tension, jostling, difficulties in being served, etc. Location also plays an important role in disorder. Taverns and lounges can have spillover effects from establishments to street areas. The people frequenting the taverns and lounges often include young male adults. High levels of drinking and disorderliness are common behavior among young males, who are also likely to be involved in occurrence of assaults and homicides (Hope 1985; Frisbie et al. 1979).

Large amounts of violence occur near taverns and lounges in England (Hope 1985). This is attributed to

large amounts of money available in the area, the large number of strangers gathering near these businesses and the sudden arrival of groups demanding service from these establishments. Customers of taverns and lounges are easy targets for barroom brawls, robbery and assaults. Disorderly activities and crime are influenced by the consumption of alcohol (Hope 1985; Frisbie et al. 1979; Roncek and Bell 1981), and these can, in turn, lead to the occurrence of homicide.

The purpose of this study, following the work of Roncek and Bell (1981), is to test two alternative hypotheses. The first, derived from Jacobs (1961), views the presence of non-residential uses (in this case, taverns and cocktail lounges) on residential city blocks as associated with lower levels of homicide incidence. The second, based on the work of Frisbie et al. (1977) and Roncek and Bell (1981) associates the presence of taverns and cocktail lounges with increases in the amount of homicide on residential city blocks.

CHAPTER II

RESEARCH DESIGN

DATA

1. The City: Cleveland, Ohio-1980

Cleveland is a large city with a population of 573,822 in 1980. Its density was 7,264 persons per square mile. The period between 1970 and 1980 was a time of decline. Cleveland lost people, businesses and industry. In 1978, Cleveland was the first major American city to default on its loans since the depression. Cleveland in 1980 was suffering a loss of confidence, reflected in its size. In 1930, Cleveland was the 6th largest city in the United States. By 1980 Cleveland ranked just 18th in size. Also apparent were the pronounced differences between areas of poverty and affluence. Cleveland increasingly became the home for the poorest residents in the metropolitan area while the affluent left for the suburbs. The city's employment profile continued its change of the past 40 years from predominantly blue-collar work to service jobs. Up to 1980, Cleveland was growing in importance as a center for education, applied research, and medicine (Van Tassel and Grabowski 1987, pp. li-lv).

The city is an appropriate site for testing the two

hypotheses. Sufficient crime exists so that crime distributions will not hamper analysis. Of the thirty largest cities in the U.S., Cleveland ranks eighth in homicide occurrence (Statistical Abstracts of the United States 1981; Uniform Crime Reports 1981). Cleveland also had 719 taverns and cocktail lounges. The total of 654 bars in 1980, although a decline of 66 from 1970, is still substantial, and represents a higher bar to resident ratio than in 1970. The bar to resident ratio for 1970 was .946 bars per 1000 people. In 1980 the bar to resident ratio was 1.14 bars per 1000 people.

2. Unit of Analysis

City blocks are the units of analysis for this study. The city block is a basic ecological unit of cities, representing the residential environment. Taeuber and Taeuber (1965, p. 226) note that "city blocks are... the smallest readily identifiable subareas for which reliable data can be tabulated." Because blocks are small, they are not affected seriously by aggregation error (Roncek 1975). There is a gain in accuracy compared to studies which used census tracts (Schmid 1960 a, b; Boggs 1965). Census tracts contain an average of between 20 to 30 blocks per tract.

City blocks are a good unit of analysis for the

ecological study of the relationship between crime and environmental characteristics. Although the problems of aggregation are not removed, because the effects on different sides of the blocks cannot be identified, using blocks permits identifying dangerous places far more accurately than does using any larger unit of analysis. Block-level analyses focussing on the occurrence of incidents in an area permit describing the danger of victimization, but cannot identify motivational components of criminal behavior (Roncek 1975; Roncek and Bell 1981; Schmid 1960, a, b). Cleveland contained 4,396 residential blocks in 1980. I define residential blocks as those which contain sufficient residents and housing such that the Census Bureau will not suppress data. For 1980, a city block must have a minimum of 15 residents to be included in the analysis. Since the average number of residents on these blocks is 129 residents, my analyses include all the areas that should be regarded as residential ones.

3. The Dependent Variable: Homicides

Homicide, as a serious crime, is of interest to the public and the social science community. It is a difficult crime to study in urban areas. It occurs far less frequently than other crimes and is difficult to

analyze statistically. It is difficult to explain
variance among dependent variables that do not differ
much across the units of analysis (Roncek and Block
1985). For this study, the number of homicides on each
block is the dependent variable. The frequency of
homicide occurrence is used because victims do not have
to live on the block where the homicide occurs. It is
important for the public to know where homicides occur.
Low rates of homicide, regardless of the base used,
provide little peace to a victim. Rates based on
population may make some blocks appear to be safe, but
the low rate may be due to a large value of the base used
to calculate the rate.

The homicides in this study are offenses known to
the police. Offenses known to the police may
underestimate the actual amount of crime because of
errors in reporting or lack of reporting, but such data
are still the best city-wide data (Nettler 1974, p. 44).
These records are not as deficient as once believed and
they allow for crimes to be related to city block
characteristics (Roncek 1975; Roncek and Lobosco 1983;
Roncek and Bell 1981). Also, homicide is generally
regarded as the best reported and recorded of all crimes.
The Cleveland police department provided the data for
homicide offenses. The data for the homicide incidents

were assigned census tract and block numbers using Census Bureau programs. Knowing on which blocks homicides occur, however, does not guarantee knowing which homicides occurred in or were related to the taverns or cocktail lounges, but neither does having the original police reports (Hope 1985).

For 1980, Cleveland had a total of 265 homicides on all of its city blocks regardless of whether the blocks were residential. Of this total, 244 homicides or 92.1 percent occurred on the residential blocks and are the basis of this study. The 244 homicides analyzed are located on 211 residential blocks. The average number of homicides on the residential blocks is .055 and the maximum number of homicides is 3.

4. Independent Variables: Taverns and Cocktail Lounges

The addresses of taverns and lounges used for the study were obtained from the 1979 Cleveland telephone directory. The tavern locations were assigned tract and block numbers through consulting the 1980 Cleveland GBF/DIME file and Census maps. The number of taverns on each block was tallied for each block and this was used as a variable in the study. The same was done for cocktail lounges. For 1980, there were 654 taverns in Cleveland on all of its blocks, residential or not.

Also, for 1980, there were 62 cocktail lounges on all the
blocks.

Because of the suppression of data by the Census
Bureau, the total number of taverns in my analyses will
be 547 taverns. These 547 taverns, on residential blocks
with at least 15 people, are located on 471 different
city blocks with a maximum number of three taverns. Of
these 471 blocks, 464 contained 537 taverns but no
lounges with a maximum number of three taverns on these
tavern-only blocks. The ten other taverns which will
remain in the analyses were on the seven residential
blocks which contain both taverns and lounges. The
maximum number of taverns on these blocks was three.

A total of 107 taverns must be omitted from the
analyses because they are on city blocks for which the
Census suppressed critical data. These 107 taverns were
located on a total of 90 blocks. Eighty-four of the 90
omitted blocks with taverns did not contain any lounges.
These eighty-four tavern-only blocks had a total of
ninety-nine taverns with a maximum number of five taverns
on these blocks. Six homicides occurred on these eighty-
four tavern-only blocks which are omitted from my
analyses. The remaining six blocks with taverns which
are omitted also had lounges on them. There was a total
of 8 taverns on these six blocks with a maximum number of

three taverns on these omitted tavern-lounge blocks. No
homicides occurred on the omitted tavern-lounge blocks.

Suppression by the Census Bureau results in the
necessary omission of 25 lounges on a total of 24 blocks.
Thus, the number of lounges in the analyses will be
reduced to 37 lounges on 35 residential blocks on which
the maximum number of lounges was two. Twenty-nine of
the lounges which remain in the analyses are on 28 blocks
on which there were no taverns. The maximum number of
lounges on these lounge-only blocks was two lounges. The
other eight lounges which will remain in the analyses
were on the seven residential blocks which had both
taverns and lounges. These seven blocks had a total of
eight lounges with a maximum number of two lounges.

Eighteen of the twenty-five omitted lounges are on
eighteen blocks which have no taverns on them. No
homicides occurred on these omitted lounge-only blocks.
The remaining seven lounges are on the six omitted blocks
which contain both taverns and lounges. On these six
blocks, the maximum number of lounges is two. As
mentioned above, no homicides occurred on the omitted
blocks.

5. The Control Variables

Data for the nine control variables are from census

summary tapes and measurements from geographic base files (GBF/DIME files). The control variables represent social and physical characteristics of city blocks. These characteristics are important correlates of where crimes occur. Past studies (Choldin and Roncek 1976; Roncek 1981; Roncek Bell and Francik 1983; Wolfgang 1958) have shown the importance of household composition (including age composition), racial composition, the socioeconomic status of the residential areas, which represent these characteristics of residential areas, and the housing environment. The control variables are the same ones used by Roncek and Bell (1981). They are : 1) the percentage of primary individuals, 2) the percentage of female-headed households, 3) the percentage of black residents, 4) average rent, 5) the percentage of residents over age 60, 6) density, 7) the percentage of overcrowded households, 8) the percentage of multi-unit structures and 9) population potential.

5a. Indicators of Household Composition

The first two control variables which are the percentage of primary individuals and the percentage of female-headed families are the two indicators of household composition. The third control variable which is the percentage over 60 is also used as a measure of

the age composition of the blocks to replicate Roncek and Bell (1981).

Primary individuals are household heads with no relatives in the households. The association between household structure and risk of victimization has been identified at the individual, block (Roncek 1981) and other aggregate levels (Cohen and Felson 1979, p. 604). Primary individuals spend time away from home and have higher victimization rates than those of family households. Roncek (1981) and Choldin and Roncek (1976, p. 26) state that the percentage of households with primary individuals on a block is the best or near best indicator of the amount of crime on residential city blocks for all the crimes which they analyzed. The most dangerous areas of the city have high concentrations of primary individuals (Roncek 1981). Roncek argues that higher concentrations of primary individuals contribute to anonymity because primary individuals can affect the amount and types of contacts within a given area (Roncek 1981).

Roncek, Bell, and Francik (1981) and Roncek and Lobosco (1983) have found that the percentage of female-headed families is a social characteristic that affects the amount of crime or vulnerability to crime in an area. Its effect is not consistent across all crimes or cities.

Female-headed families are an important element in routine-activities theory because their presence may result in attracting additional males to an area. An increase in non-related males could affect the amount of homicide.

The percentage of residents age 60 and over is included in the regressions because older people can be easy to victimize and their presence can affect the amount of crime in an area. Cohen and Felson (1979) show, however, that victimization rates are related inversely to age and are lower for persons in a less active status, like retirement. Roncek, Bell and Francik (1981) and Roncek and Lobosco (1983) show that percentage of residents over 60 is negatively related to the amount of crime or vulnerability to crime in residential areas. Their results indicate that the higher the concentration of the aged, the less crime occurs.

5b. The Percentage of Black Residents

Wolfgang (1958) found that blacks of both sexes are involved more frequently in homicide than whites both as victims and offenders. Blacks contributed disproportionately to homicides in Wolfgang's study. Throughout the United States, other research has found significant associations between the racial composition

of an area and homicide. Boggs (1965) identified homicide-assault occurrence rates as being directly related to the percentage of black residents in an area. With regard to crime generally, Roncek, Bell, and Francik (1981) and Roncek and Lobosco (1983) showed that percentage of black residents affects the amount of crime in residential areas and is important in explaining variation in crime across city blocks.

5c. Socioeconomic Status

The mean value of rental housing is the indicator of socioeconomic status for blocks, following Roncek and Bell (1981). Only the average value of owned housing and average rent are reported for city blocks by the census. Roncek and Bell (1981) found that rental value was reported more frequently for blocks with bars than was owner value. To avoid as much as possible estimating of the socioeconomic position of the blocks with bars, they used average rent as their indicator (Roncek and Bell 1981). No accepted method exists for combining owner and renter values into a single index for city blocks. Blocks with taverns or cocktail lounges have rent values reported more frequently than owner values. To avoid any loss of cases due to missing rents, the mean value of rental housing for the census tracts in which blocks with

missing rental values are located are substituted for the
missing block values.

5d.   The Housing Environment

The characteristics of the housing in an area can
also have effects on the amount of crime. The variables
representing the housing environment on the blocks are:
density, overcrowding, percent multi-unit structures, and
population potential. Each of these variables is
important in explaining the amount of crime across city
blocks (Choldin and Roncek 1976; Roncek 1975, 1981;
Roncek and Bell 1981) and were used by Roncek and Bell
(1981) in the study which I am replicating.

5d.1.   Density

Density is defined as the number of persons per
acre. Historically, the density of a population has been
thought to be a cause of crime. For example, the highest
reporting of homicide occurred in areas with dense
residential populations (Pyle et al. 1974). Past studies
made inferences about the effects on individuals
analyzing data for areas in cities. Such inferences are
not correct. While past researchers have viewed density
and overcrowding as positively related to high crime
rates, research by Roncek and his colleagues have shown
no positive independent effect of density on crime

occurrence (Roncek 1975; Roncek and Faggiani 1985; Roncek and Lobosco 1983).

Methodological problems with earlier studies prevented researchers from concluding that density has no independent effect on crime, but this appears to be the case. Roncek's (1981) study of Cleveland found that lower density blocks have more crime. Density appears to have a negative effect on crime, when block population is controlled due to the effect of physical size of the block (Roncek 1981). Stark (1987) proposes that the higher the density of a neighborhood, the higher the level of moral cynicism, leading in turn to decreased surveillance and increased crime levels. In dense urban areas, it is harder to show a continually positive appearance, thus allowing for a breakdown in protection of individuals.

Jacobs (1961) argued that studies of density have erred becaused they do not separate poverty and slum characteristics from density. This has led to incorrect correlation assumed between density and crime. High density can inspire high diversity within an area. Confusion has developed, however, between high density and high overcrowding, on the assumption that they represent the same theoretical idea. They are, however, entirely different concepts. Density is the number of

persons per acre. Overcrowding refers to the number of persons per room in a housing unit. Areas with large apartment buildings can be dense if the units are concentrated in a physically small territory, but need not be overcrowded if there are few people per housing unit. If the following example is employed, the concepts may be better understood. Overcrowding in households can occur in either high or low density areas. As a result of riots in the late 1960's in which many buildings were burned and eventually demolished, overcrowding can occur because residents have few rooms per household. At the same time density can be low because so few buildings remain on a block.

5d.2. Overcrowding

Overcrowding has been found to be related to social disorganization, instability and delinquency, and these findings have been interpreted as supporting theories of anomie (Pyle et al. 1974; Stark 1987). Roncek (1975) identifies overcrowding as a characteristic related to high crime and deliquency rates in past studies. He notes that overcrowding has been an important variable for predicting the residential location of juvenile delinquents. The regression coefficient for overcrowding has been sizable and significant across cities, over time

and with different units of analysis (Roncek 1975).
Overcrowding is a more consistent variable than density
in predicting occurrences of crime, but its effects
appear to be smaller than those of social-structural
variables. Stark (1987) outlines a theoretical
relationship between home overcrowding, density, poverty
and crime. If neighborhoods are dense and poor, homes
will be crowded and there will be a tendency for people
to gather away from home in locations and situations that
present opportunities for deviant behavior (Stark 1987,
pp. 896-897). Overcrowding can be relevant for this
research because people in overcrowded homes could tend
to leave those homes and gather in dangerous places like
streets and bars, places conducive to deviance. Jacobs
(1961, pp. 203-205) argues that overcrowding is
associated with poverty and discrimination against
minorities. Overcrowding can occur in areas of either
low or high density, influencing or affecting crime in
those areas (Jacobs 1961, p. 205).

5d.3. The Percentage of Units in Multi-Unit Structures

I use the concentration of housing units in
structures with ten-or-more units to represent the
presence of apartment buildings on the residential
blocks. The census does not report either the number of

buildings on a block, or the number of different types of
buildings. The variable which most closely approximates
the number of buildings contains data on the number of
housing units in structures containing different numbers
of units. The highest category of units in structures
was structures with 10 or more units. Roncek (1981)
found that the most dangerous city blocks have high
concentrations of units in this category. Using this
indicator, studies of housing projects have also found
that concentrating housing units in a small number of
large buildings is also associated with a high incidence
of crime (Newman 1973; 1980).

5d.4. Population Potential

Population potential is a distributional statistic
measured in persons per mile. Choldin and Roncek (1976,
p. 20) suggest that population potential "permits shift
from consideration of the number of persons within an
area to accessability of individuals at a location to all
other individuals in a given space" (p. 20). Population
potential measures the access of the residential
populations of other places in the universe being
considered based on the distance from each block in a
city. The accessibility of individuals to blocks is
important regardless of whether a block itself has a high

or low residential density. Places with low population density can have high population potentials.

Population potential can affect opportunities for contacts within an area (Choldin and Roncek 1976). Roncek (1981) shows that population potential, which indicates potential contacts possible on a block, strongly affects the amount of crime on city blocks in Cleveland and San Diego: the most dangerous blocks tend to be situated in heavily populated surroundings.

CHAPTER III

METHODS

I use a cross-sectional research design. My analysis will involve four statistical techniques: t-tests for the difference of means, tests for multicollinearity, zero-order correlation and multiple regression. The specific rationales for using each technique are presented below.

1. T-test for the Difference of Means

The t-test for the difference of means focusses on the differences between the average levels of a variable across two different groups of the units of analysis (Nie, Hull, Jenkins, Steinbrenner and Brent 1975, p. 267). The mean for each group is tested to examine the probability that two groups are from the same population. I will compare the groups of blocks with either taverns or cocktail lounges or both taverns and cocktail lounges against the group of blocks without these businesses on them.

The procedure for the t-test for the difference of means involves formulating a null and an alternative hypothesis. The null hypothesis is the statement for which the t statistic is computed. Preliminary support

for my hypotheses about taverns and lounges influencing
crime would emerge if it is possible to reject the null
hypothesis that tavern and lounge blocks do not differ
from other blocks in the average amount of homicide on
them.   The null hypothesis presumes the group means are
the same: that the mean of group 1 is equal to the mean
of group 2.   The alternative hypothesis is that the group
means are not equal, but that one is greater than or less
than the other for a two-tailed test.   For my study, the
null hypothesis presumes that the mean number of
homicides on blocks without taverns or cocktail lounges
is the same as the mean number of homicides on blocks
with taverns or cocktail lounges.   The alternative one-
tailed hypothesis presumes that blocks with taverns or
lounges or both will have a larger mean than blocks
without them.

In examining the difference of means for the two
groups being analyzed, a significance level is chosen for
testing the null hypothesis, based on the smallest
probability that will be accepted as indicating the
differences cannot be due to chance.   The significance
level for this study is .05, based on the seriousness of
type I error (rejecting the null hypothesis when it is
true).

The t statistic is then computed, assuming the null

hypothesis is true, and a probability statistic is computed for getting a more extreme value of the t statistic. The null hypothesis is rejected if the probability computed is smaller than the significance level, .05. If the value is larger, the null hypothesis is not rejected. I anticipate the null hypothesis to be rejected in my study.

2. Correlation Analysis

The objective of correlation analysis is "to determine the extent to which variation in one variable is linked to variation in another" (Nie, Hull, Jenkins, Steinbrenner and Brent 1975, p. 276). Correlation coefficients indicate the degree to which levels of one variable covary with levels of another variable. Correlation analysis provides information that summarizes the strength of association and information concerning the strength of the relationship between two variables before control for other variables. Visually examining the zero-order correlations among the independent variables is the first step in determining if multicollinearity is a problem. The zero-order correlations also provide a baseline against which the standardized regression coefficients can be compared for judging how the effects of an independent variable are

altered after controlling for other independent
variables. Multiple correlation coefficients which
emerge from multiple regression analysis and which will
also be used will be discussed in the section on multiple
regression analysis.

3.   Tests for Multicollinearity

Multicollinearity is the "situation in which some or
all of the independent variables are very highly
intercorrelated" (Nie, Hull, Jenkins, Steinbrenner and
Brent 1975, p. 340). This situation can cause difficulty
in trying to determine the effects of specific
independent variables on the dependent variable. The
measures of the effects may be distorted due to the
intercorrelations among variables. The correct values of
regression coefficients may be difficult to determine.
The estimates of the regression coefficients may tend to
fluctuate and it may be difficult to evaluate the
relative importance of independent variables.

After visually examining the zero-order correlations
of the independent variables, the data in my study will
be tested further for severe multicollinearity, using
Variance Inflation Factors. A Variance Inflation Factor
of less than 4.00 will be the criterion for indicating
the lack of severe multicollinearity. If any is found,

the appropriate technique will be chosen to deal with the
problem. The solution may be to create a new variable to
represent the components or to use only one of the
variables in the correlated set to represent the
underlying concept(s).

4. Multiple Regression Analysis

Ordinary multiple regression analysis "allows the
researcher to study linear relationships between a set of
independent variables and a dependent variable while
taking into account the interrelationships among the
independent variables" (Nie, Hull, Jenkins, Steinbrenner
and Brent 1975, p. 8). The goal of multiple regression
analysis is to determine the best linear combination of a
group of independent variables for statistically
predicting a dependent variable.

Multiple regression, which is based on minimizing
the squared deviations about the geometric surface
defined by the best linear combination, provides three
types of useful information. First, the multiple
correlation which emerges from this technique is used to
identify how closely related the best linear combination
of independent variables is to the dependent variable.
Using this statistic also alerts the researcher to the
importance of yet unknown and unmeasured variables as

well as to the possible inappropriateness of the linear model. Second, the standardized regression coefficients, or beta weights, from this technique allow assessing how important each independent variable is in statistically predicting the dependent variable relative to all other independent variables included in the analysis regardless of the scale on which any of the independent variables were originally measured. Third, the unstandardized regression coefficient, or b, measures the actual difference in levels of the dependent variable across the units of analysis which are associated with a one unit difference in the level of each independent variable. Fortunately significance tests exist for all three statistics to ensure that results which could have occurred by chance are not accepted.

I will investigate how important bars are for predicting the number of homicides across city blocks by using regressions which include control variables. This does not resolve the issue of causality, but assumes bar owners will not select locations because they have high homicide levels (Roncek and Bell 1981).

Lastly, bars may affect homicide occurrence in some areas but not in others because of characteristics of bars or the environment. Because it is difficult to distinguish between bar types beyond taverns and cocktail

lounges, I will test for interaction effects between the number of taverns and/or cocktail lounges on a block and other characteristics of blocks. The interactions examined involve the number of taverns or lounges combined with economic status and racial composition of blocks. This procedure follows Roncek and Bell (1981).

CHAPTER IV

RESULTS

1. T-tests for the Difference of Means

Before beginning the formal statistical analyses, it
is useful to review the distribution of homicide in
Cleveland. In 1980, 244 homicides occurred on 211 of the
4,396 residential city blocks of Cleveland. These 244
homicides are 92.1 percent of the total of 265 homicides
which occurred within the city in 1980. The remaining
twenty-one homicides which are excluded from my analyses
took place on blocks for which no population or housing
data are available from the Census Bureau because the
number of residents on and/or the number of housing units
on the excluded blocks is smaller than the criteria
required for the release of this information. The
average number of homicides on the residential city
blocks which remain in the analyses is .055 and the
maximum number of homicides on these blocks is three
homicides.

My first analysis examines the differences in
homicides and in the social and housing characteristics

between blocks with taverns and blocks without taverns. For this analysis, a tavern block is any block with a tavern on it regardless of whether a lounge is also present. Similarly, non-tavern blocks are city blocks without taverns regardless of the presence of lounges. The analysis parallels Roncek and Bell's (1981) t-test for the differences in homicides. They did not eliminate blocks with lounges from either group since they did not have the data on lounges to allow eliminating these blocks.

The results of the first t-test are in Table 1. City blocks with taverns have a higher average frequency of homicide than the city blocks without taverns. The mean of .0977 for homicides per block for tavern blocks is 1.9 times higher than the mean for blocks without taverns. The difference is significant at the .05 level, indicating that the null hypothesis that the means of both groups are equal should be rejected. This finding supports my hypothesis that blocks with taverns will have more homicides on them than blocks without these uses.

For all the control variables except the percentage overcrowded, there are statistically significant differences between blocks with taverns and those without them. The largest differences for the control variables are for the percentage of multi-unit structures, the

percentage of primary individuals, the percentage of black residents, density, mean rent and the percentage of female-headed households. On the average, blocks with taverns have 33 percent more of their housing in large multi-unit structures than do blocks without taverns. Blocks with taverns on the average have 31 percent higher concentration of primary individuals than blocks without taverns. Thus, taverns are located in areas that have lower concentrations of family households. The concentration of blacks on blocks with taverns is 31 percent less than blocks without taverns on them. The average density is 11 percent less than on blocks without taverns. Blocks with taverns have mean rental values 9 percent lower than blocks without taverns. Thus, blocks without taverns appear to have a higher level of socioeconomic status than blocks with these establishments. Blocks with taverns have 9 percent lower concentrations of female-headed households than blocks without taverns.[1]

-See Table 1 on the next page-

Both groups of city blocks used in the preceding t-tests could have lounges on them. Thus, it is important to re-examine the differences between tavern blocks without lounges and other blocks which have neither taverns nor lounges to remove any effects which could be

TABLE 1

Differences of Means between City Blocks With Taverns
Regardless of the Presence of Lounges and City Blocks
Without Taverns Regardless of the Presence of Lounges

VARIABLE	City Blocks With Taverns	City Blocks Without any Taverns	t	p*
Homicide	.0977	.0504	3.11	.002**
% Primary Individuals	17.7353	12.2634	8.03	.000***
% Female-Headed Households	17.5282	19.1076	-2.92	.004
% Black	27.3061	39.4754	-6.02	.000***
Rent	133.9514	145.9195	-7.08	.000***
% Over 60	19.6596	18.2017	2.72	.007
Density	36.1825	40.4386	-3.30	.001
% Overcrowded	7.7915	7.6404	.39	.699
% Multi-Unit	7.1827	4.8504	2.46	.014
Population Potential	23.3126	23.6469	-2.50	.012
N	471	3925		

*   All probabilities are two-tailed.

**   The one-tailed probability for homicide is .001.

*** The two-tailed probability is less than or equal to .00050.

due to the presence of lounges. The results of this
analysis are in Table 2. The findings are very similar
to those of the first analysis between blocks with
taverns regardless of the presence of lounges and blocks
without taverns regardless of the presence of lounges.
Once again, the mean number of homicides for blocks with
taverns was almost twice that of the mean for blocks
without taverns. The mean of .0927 for homicides per
tavern blocks without lounges is 1.8 times higher than
the mean for blocks without either taverns or lounges.
The null hypothesis that the means of both groups are
equal is rejected. This finding also supports my
hypothesis that blocks with taverns will have more
homicides on them than blocks without these uses.

For the control variables, similar results were also
obtained. All control variables, except for the
percentage overcrowded, are statistically significant
between tavern blocks without lounges and blocks with
neither taverns nor lounges. The largest differences
were found in the same variables as before: the
percentage of black residents, the percentage of multi-
unit structures, the percentage of primary individuals,
density, the percentage of female-headed households and
rent. This time, however, the largest difference was for
the percentage of black residents, with a 32 percent

difference between blocks with only taverns and blocks
without either taverns or lounges. Again, tavern blocks
without lounges have more of their housing in large
multi-unit structures than do blocks without either
taverns or lounges. Tavern blocks without lounges have
higher concentrations of primary individuals than do
blocks without either taverns or lounges. The average
density for tavern blocks without lounges is smaller than
for blocks without either taverns or lounges and the
tavern blocks without lounges have lower average rents
and lower concentrations of female-headed households.

-See Table 2 on the next page-

The next analyses examine t-tests for blocks with
lounges. The first t-tests are for the differences
between blocks with lounges and blocks without lounges.
For this analysis, a lounge block is any block with a
lounge on it regardless of whether a tavern is also
present. Similarly, non-lounge blocks are city blocks
without lounges regardless of the presence of taverns.
This analysis extends the work of Roncek and Bell's
(1981) t-test for the differences in homicide by
examining blocks that have been identified as having
lounges on them. This provides additional information
about the effects of specific types of liquor
establishments on homicide occurrence.

TABLE 2

Differences of Means between City Blocks With Taverns
Only and City Blocks Without Taverns or Lounges

VARIABLE	City Blocks With Taverns Only	City Blocks Without Taverns or Lounges	t	p*
Homicide	.0927	.0511	2.76	.006**
% Primary Individuals	17.4046	12.3122	7.73	.000***
% Female-Headed Households	17.5690	19.1000	-2.81	.005
% Black	27.0946	39.4787	-6.09	.000***
Rent	134.3075	145.8562	-6.78	.000***
% Over 60	19.4226	18.2323	2.21	.027
Density	36.1222	40.4381	-3.35	.001
% Overcrowded	7.8173	7.6376	.46	.648
% Multi-Unit	6.8870	4.8894	2.13	.033
Population Potential	23.3125	23.6463	-2.48	.013
N	464	3932		

*   All probabilities are two-tailed.

** The one-tailed probability for homicide is .003.

*** The two-tailed probability is less than or equal
    to .00050.

The results of the first of the lounge t-tests are in Table 3. City blocks with lounges have a higher average frequency of homicide than the city blocks without lounges. The mean of .2857 for homicides per block for lounge blocks is 5.3 times higher than the mean for blocks without lounges. The difference is significant at the .05 level, indicating that the null hypothesis that the means of both groups are equal should be rejected. This finding supports my hypothesis that blocks with lounges will have more homicides on them than blocks without these uses.

For the following control variables there are statistically significant differences between blocks with lounges and those without them: the percentage of primary individuals, density and the percentage of units in multi-unit structures. On the average, blocks with lounges have 78 percent more of their housing in large multi-unit structures than do blocks without lounges. Blocks with lounges on the average have 48 percent higher concentrations of primary individuals than do blocks without lounges. Thus, lounge blocks are located in areas that have lower concentrations of family households. The average density is 19% less than on blocks without lounges. The remaining control variables are not statistically significant.[2]

Both groups of city blocks used in the lounge t-tests could have taverns on them. Thus, examining the differences between lounge blocks without taverns and other blocks without either lounges or taverns allows removing any effects which could be due to the presence of taverns. The results of this analysis are in Table 4. The findings are very similar to those of the analysis between blocks with lounges regardless of the presence of taverns and blocks without either lounges or taverns. The mean number of homicides for blocks with lounges was almost 5 times that of the mean for blocks without lounges. The mean of .2500 for homicides per lounge blocks without taverns is 4.6 times higher than the mean for blocks without either lounges or taverns. Using the one-tailed probability for the difference in homicides, the null hypothesis that the means for both groups are equal is rejected. This finding also supports my hypothesis that blocks with lounges will have more homicides on them than blocks without these uses.

For the control variables, results similar to those reported earlier are also obtained. Differences for the percentage of multi-unit structures, the percentage of primary individuals and density were all statistically significant. Again, lounge blocks without taverns have

TABLE 3

Differences of Means between City Blocks With Lounges
Regardless of the Presence of Taverns and City Blocks
Without Lounges Regardless of the Presence of Taverns

VARIABLE	City Blocks With Lounges	City Blocks Without any Lounges	t	p*
Homicide	.2857	.0537	2.64	.012**
% Primary Individuals	24.1153	12.7593	3.22	.003
% Female-Headed Households	16.0452	18.9616	-1.37	.170
% Black	38.3753	38.1700	0.03	.979
Rent	141.5502	144.6620	-0.45	.655
% Over 60	21.8487	18.3299	1.22	.232
Density	32.6115	40.0417	-2.29	.027
% Overcrowded	9.6254	7.6408	0.93	.358
% Multi-Unit	22.4041	4.9614	3.15	.003
Population Potential	23.3519	23.6132	-0.56	.574
N	35	4361		

* All probabilities are two-tailed.

** The one-tailed probability for homicide is .006.

more of their housing in large multi-unit structures than
do blocks without either lounges or taverns. Lounge
blocks without taverns have higher concentrations of
primary individuals than do blocks without either lounges
or taverns. The average density for lounge blocks
without taverns is smaller than for blocks without either
lounges or taverns. The differences for the remaining
control variables were not statistically significant.

-See Table 4 on the next page-

The final t-tests were conducted to examine the
differences between blocks with either taverns or lounges
on them and blocks without either taverns or lounges.
These tests indicate the effects of liquor establishments
on homicide occurrence. The results of this analysis are
in Table 5. City blocks with either a tavern or a lounge
have a higher average frequency of homicide than the city
blocks without either taverns or lounges. The mean of
.1062 for homicides per block for tavern or lounge blocks
is 2.1 times higher than the mean for blocks without
these establishments. The difference is significant at
the .05 level, indicating that the null hypothesis that
the means of both groups are equal should be rejected.
This finding supports my hypothesis that blocks with
either taverns or lounges will have more homicides on
them than blocks without these uses.

TABLE 4

Differences of Means between City Blocks With Lounges Only And City Blocks Without Lounges Or Taverns

VARIABLE	City Blocks With Lounges Only	City Blocks Without any Lounges Or Taverns	t	p*
Homicide	.2500	.0543	2.00	.056**
% Primary Individuals	20.2298	12.8024	2.55	.017
% Female-Headed Households	16.3503	18.9550	-1.10	.272
% Black	37.6379	38.1750	-0.06	.950
Rent	149.3503	144.6070	0.61	.543
% Over 60	18.4684	18.3572	0.05	.957
Density	30.7199	40.0419	-3.17	.003
% Overcrowded	10.5112	7.6383	1.12	.274
% Multi-Unit	21.3092	4.9964	2.69	.012
Population Potential	23.3600	23.6127	-0.49	.627
N	28	4368		

* All probabilities are two-tailed.

** The one-tailed probability for homicide is .028.

For all the control variables except the percentage overcrowded, there are statistically significant differences between blocks with either taverns or lounges and blocks without them. The largest differences for the control variables are for the percentage of multi-unit structures, the percentage of primary individuals, the percentage of black residents, density, the percentage of female-headed households and rent. On the average, blocks with either taverns or lounges have 41 percent more of their housing in large multi-unit structures than do blocks without either taverns or lounges. Blocks with either liquor establishment have 32 percent higher concentrations of primary individuals than do blocks without either establishment. Blocks with either taverns or lounges have lower percentages of black residents, smaller average density, lower concentrations of female-headed households and lower rents than do blocks without either taverns or lounges.

2. Tests for Multicollinearity

Tests for multicollinearity were conducted to examine the interdependence among the variables used in

TABLE 5

Differences of Means between City Blocks With Either
Taverns or Lounges and City Blocks Without Either
Taverns or Lounges

VARIABLE	City Blocks With Taverns Or Lounges	City Blocks Without any Taverns Or Lounges	t	p*
Homicide	.1062	.0490	3.70	.000**
% Primary Individuals	17.8753	12.2062	8.51	.000***
% Female-Headed Households	17.4621	19.1274	-3.13	.002
% Black	27.8859	39.4886	-5.86	.000***
Rent	134.8155	145.8949	-6.65	.000***
% Over 60	19.5928	18.1998	2.67	.008
Density	35.8759	40.5084	-3.64	.000***
% Overcrowded	7.9441	7.6198	0.77	.442
% Multi-Unit	7.9754	4.7321	3.34	.001
Population Potential	23.3153	23.6490	-2.56	.010
N	499	3897		

* All probabilities are two-tailed.

** The one-tailed probability for homicide is .000.

*** The two-tailed probability is less than or equal to .00050.

this study. High correlations among the independent
variables can distort the true effects of those variables
on the dependent variable. Thus, if severe collinearity
is discovered, one or more strategies must be used to
correct for this problem.

The first test for multicollinearity employed was the
Haitovsky test (Rockwell 1975, p. 313). This technique
is a chi-square method for testing a null hypothesis of
singularity, that is the condition that the determinant
of the correlation matrix is 0. Small values for the
chi-square statistic indicate the existence of severe
multicollinearity (Rockwell 1975, p. 314).

Two Haitovsky tests were conducted. The first test
included only the census variables: the percentage of
primary individuals, the percentage of black residents,
rent, the percentage of overcrowded household, density,
the percentage of housing units in multi-unit structures,
the percentage of female-headed households, the
percentage of residents over 60 years of age and
population potential. The test results yield a chi-
square of 519.8637 and a Z score of 21.803. These values
indicate that severe multicollinearity is not a problem
and further analysis can be done without statistical
adjustments to the variables.

The second Haitovsky test included not only the

census variables from the first tests, but also the number of taverns and lounges. Results of the second test yield a chi-square of 488.5309 and a Z score of 20.818. Again, the values show that severe multicollinearity is not a problem and adjustment of the variables is not necessary for examining the effects of the independent variables on the dependent variable.

Next, ridge regression programs were run to produce variance inflation factors. Two separate programs were run. The first ridge regression involved only the census variables. The second ridge regression included the census variables and the number of taverns and lounges. The results of the two ridge regressions are in Table 6. The variance inflation factors from each analysis are reported and are well below the maximum acceptable value of 3.99. These results indicate that severe multicollinearity is not a problem. The results parallel the findings for the Haitovsky tests. Further analysis can be done without adjusting the independent variables.

3. Regression Analyses

Multiple regression or OLS (ordinary least squares)

TABLE 6

Variance Inflation Factors Obtained From Ridge Regression

VARIABLE	Value without Taverns and Lounges	Value with Taverns and and Lounges
% Primary Individuals	2.37	2.42
% Female-Headed Households	1.97	1.97
% Black	1.71	1.72
Rent	1.47	1.48
% Over 60	1.45	1.45
Density	1.02	1.02
% Overcrowded	1.17	1.17
% Multi-Unit	1.81	1.82
Population Potential	1.43	1.44
Taverns	n.i.	1.05
Lounges	n.i.	1.01

n.i.-- independent variable not included in this run

is used to determine the effects of the independent variables on the dependent variable, homicide. Each regression which I report has a different independent variable to represent the different types and combinations of liquor establishments.

The results of the first regression including the census variables and the number of taverns are in Table 7. The number of taverns has a positive and significant effect on homicide. The greater the number of taverns on a block, the higher is the incidence of homicide. The beta weight for the number of taverns indicates that taverns are a moderately important predictor relative to other independent variables of where homicides occur. The b-coefficient shows that each additional tavern on a block increased the number of homicides by approximately .03 a year in 1980.

The value of R squared is not large, but is still statistically significant. Homicide has a sparse distribution and because of this, it is difficult to explain statistically. The effect of a sparser distribution on the explained variances and sizes of the effects of the independent variables also are present in Roncek and Bell (1981). They explain more variance for the total of all Index crimes than for the total of violent crimes. Generally, the effects of independent

variables are also larger for the total of all Index crimes than for the subset of violent crimes. It is not surprising, thus, to find very weak effects when trying to predict statistically the location of 244 homicides across 4,396 blocks. It is, however, important that the locations of these incidents does depend on the presence of a non-residential land use which is only on approximately 10 percent of the residential blocks.

Of the census variables, the percentage of black residents, rent, and the percentage of multi-unit structures have statistically significant effects on the occurrence of homicide. The effects of these variables are also not large compared to their effects in studies which use crimes which occur much more frequently as dependent variables (Roncek 1981; Roncek and Bell 1981). A beta weight of .10, such as that for the percentage of black residents, is relatively small especially for this variable for which rather large effects are usually found in urban crime studies. Thus, the finding that the number of taverns is one of the few variables to have a statistically significant effect and that this effect is not dramatically smaller than the percentage black provides support for my hypothesis with regard to taverns.

TABLE 7

Homicide Regression:
Census Variables and Taverns

VARIABLE	beta	b
% Primary Individuals	.022	.0005
% Female-Headed Households	.007	.0001
% Black	.107*	.0006*
Rent	- .076*	- .0005*
% Over 60	- .034	- .0008
Density	- .002	- .000009
% Overcrowded	.012	.0003
% Multi-Unit	.076*	.001*
Population Potential	- .022	- .002
Taverns	.045*	.03*

R = .184

R squared = .034

N = 4396

* Statistically significant at the .05 level.

The second regression analysis includes the census variables and the number of lounges. The number of lounges has a positive and significant effect on homicide. The greater the number of lounges on a block, the higher is the incidence of homicide. The b-coefficient for lounges indicates that each additional lounge on a block increased the number of homicides by approximately .17 per year in 1980. Of the census variables, the percentage of black residents, rent, the percentage of residents over 60 years of age and percentage of multi-unit structures are important and significant predictors of homicide occurrence. Once again, the beta weight for this type of liquor establishment is similar in magnitude to the beta weight for the percentage of black residents. Thus, these findings support my hypothesis that blocks with lounges have more homicides on them than blocks without them.

The third regression includes the census variables and both the number of taverns and the number of lounges. Both the numbers of taverns and the numbers of lounges have positive and significant effects on homicide. The greater the numbers of taverns and lounges on a block, the higher are the incidences of homicide.

While the beta weight for lounges is only slightly

TABLE 8

Homicide Regression:
Census Variables and Lounges

VARIABLE	beta	b
% Primary Individuals	.028	.0007
% Female-Headed Households	.009	.0002
% Black	.102*	.0006*
Rent	- .080*	- .0005*
% Over 60	- .036*	- .0009*
Density	- .002	- .00001
% Overcrowded	.011	.0003
% Multi-Unit	.070*	.001*
Population Potential	- .024	- .002
Lounges	.063*	.171*

R = .190

R squared = .036

N = 4396

* Statistically significant at the .05 level.

larger than that for taverns, the number of lounges has a substantially larger unstandardized coefficient. The unstandardized or b-coefficient is the actual increase in the dependent variable associated with a one unit increase in the independent variable. This coefficient is often described as the "causal" effect. In other words, the presence of a lounge has a more substantial impact on homicide than does the number of taverns. The b-coefficient for taverns show that each additional tavern on a block increased the number of homicides by approximately .03 a year in 1980. The b-coefficient for lounges indicates that each additional lounge on a block increased the number of homicides by approximately .17 a year in 1980.

Of the census variables, the percentage of black residents, rent and the percentage of housing units in multi-unit structures have statistically significant effects on homicide occurrence. The findings of the third regression support my hypothesis that both the number of taverns and the number of lounges on blocks affect homicide after controlling for the presence of the other type of liquor establishment.

TABLE 9

Homicide Regression:
Census Variables Plus Taverns and Lounges

VARIABLE	beta	b
% Primary Individuals	.019	.0004
% Female-Headed Households	.007	.0002
% Black	.106*	.0006*
Rent	- .077*	- .0005*
% Over 60	- .034	- .0008
Density	- .0009	- .000004
% Overcrowded	.010	.0003
% Multi-Unit	.073*	.001*
Population Potential	- .022	- .002
Taverns	.043*	.029*
Lounges	.061*	.168*

R = .194

R squared = .038

N = 4396

* Statistically significant at the .05 level.

The fourth regression includes the census variables and the number of liquor establishments. Blocks with liquor establishments are defined as blocks that have either a tavern or a lounge on them. The number of liquor establishments is equal to the sum of that number of taverns and the number of lounges. The presence of liquor establishments has a positive and significant effect on homicide. The greater the number of liquor establishments on a block, the higher is the incidence of homicide. Again, the size of the beta weight for the number of liquor establishments is close to the sizes of the coefficients for the other variables with statistically significant effects. The b-coefficients show that each additional liquor establishment on a block increased the number of homicides by approximately .04 a year in 1980. Of the census variables, the percentage of black residents, rent and the percentage of housing units in multi-unit structures have statistically significant effects on homicide occurrence. The findings of the fourth regression support my hypothesis that blocks with liquor establishments have more homicides on them than blocks without these uses.[3]

-See Table 10 on the next page-

TABLE 10

Homicide Regression: Census Variables and
the sum of Taverns and Lounges

VARIABLE	beta	b
% Primary Individuals	.019	.0004
% Female-Headed Households	.007	.0001
% Black	.108*	.0006*
Rent	- .075*	- .0005*
% Over 60	- .033	- .0008
Density	- .001	- .000006
% Overcrowded	.011	.0003
% Multi-Unit	.076*	.001*
Population Potential	- .022	- .002
Liquor Establishments	.059*	.039*

R = .190

R squared = .035

N = 4396

* Statistically significant at the .05 level.

4. Interaction Effects

The results of the first set of regressions shows
that the following independent variables have significant
effects on homicide: mean rent, percentage of black
residents, taverns and lounges. These variables have the
largest impacts on the dependent variable. Although
blocks with taverns and lounges have more homicides on
them than do blocks without these uses, some blocks with
liquor establishments are worse than others in terms of
homicide. Indeed, over ninety percent of the blocks with
liquor establishments do not have homicides on them.
This difference suggests that the effects of liquor
establishments may depend upon other independent
variables aggravating the effects of taverns and/or
lounges on homicide. Thus, two of the most consistent
and strongest independent variables, the percentage of
black residents and mean rent, should be examined for
interaction effects.

Roncek and Bell (1981) also examined the interaction
effects for bars with the percentage of black residents
and mean rent. They focussed on the importance of the
increment to the variance explained (unique variance)
rather than on the values of specific coefficients in the

regressions. The unique variance indicates how much more power is derived from including the interaction terms in the regression equation. Roncek and Bell (1981) found that the results of their tests for interaction were not large enough to be of substantive concern. The presence of bars on blocks with low mean rent and a high percentage of black residents made little difference for explaining where the crimes they examined occurred.

I examined the interaction of each type of liquor establishment with rent and the percentage of black residents separately, as well as the three way interaction between type of liquor establishment, rent and the percentage of black residents to discover if results similar to Roncek and Bell's (1981) findings would emerge for homicides in Cleveland for 1980. Except for each of the three way interactions and the interaction term of mean rent with the number of taverns, the interaction terms are statistically significant. The increments to the unique variances, however, are extremely small. The values for the unique variances range from .092 percent for the interaction between liquor establishments and mean rent to .369 percent for the interaction between mean rent and the number of lounges. Again, the presence of liquor establishments regardless of the type of establishment on blocks with

low mean rent and/or a high percentage of black residents makes little difference for explaining where homicides occur.

-See Table 11 on the next page-

5. Tests Between Liquor Establishment Blocks With and Without Homicides

Another way of examining the characteristics of blocks with liquor establishments and homicides on them is to compare their social and housing characteristics to those blocks with the same type of liquor establishments on them but without homicides. The results of the tavern only blocks t-test are in Table 12.

The following variables are statistically significant: the percentage of female-headed households, the percentage of black residents, rent, the percentage of residents over age 60 years, the percentage of overcrowded households and the percentage of housing units in multi-unit structures. The largest differences are for the percentage of units in multi-unit structures and the percentage of black residents. Thus, homicides occur on tavern blocks that have a high concentration of

TABLE 11

Regression Coefficients and Unique Variance
Due to Interaction

	Taverns		Lounges	
VARIABLE	beta	b	beta	b
Rent#	.082*	9.762*	.088*	10.434*
Bars##	.042*	.028*	.063*	.171*
Rent x Bars	.022	7.371	.061*	87.454*
Unique Variance	.046%		.369%	
% Black	.104*	.0006*	.097*	.0005*
Bars##	.059*	.040 *	.062*	.170 *
% Black x Bars	.043*	.0006*	.041*	.002 *
Unique Variance	.165%		.17%	
Rent#	.087*	10.339 *	.087*	10.369 *
% Black	.102*	.0005*	.094*	.0005*
Bars##	.051*	.035 *	.066*	.180 *
Rent x Bars	.021	7.137	.056*	80.014 *
% Black x Bars	.036*	.0005*	.014	.0008
Rent x % Black x Bars	.017	.133	-.008	-.256
Unique Variance	.025%		.004%	

* Statistically significant at the .05 level.
# In the regressions testing interactions with rent,
   the rent variable is scored inversely to permit ease
   of interpretation of the interaction terms.
The term bars is used to represent a particular type
   of liquor establishment, either taverns only, lounges
   only or the total of taverns and lounges.

TABLE 11 (continued)

Regression Coefficients and Unique Variance
Due to Interaction

Liquor
Establishments

VARIABLE	beta	b
Rent#	.082*	9.811*
Bars##	.053*	.035*
Rent x Bars	.031*	9.99 *
Unique Variance	.092%	
% Black	.106*	.0006*
Bars##	.075*	.049 *
% Black x Bars	.055*	.0008*
Unique Variance	.277%	
Rent#	.088*	10.444 *
% Black	.104*	.0006*
Bars##	.064*	.042 *
Rent x Bars	.028	8.907
% Black x Bars	.045*	.0007*
Rent x % Black x Bars	.019	.148
Unique Variance	.034%	

* Statistically significant at the .05 level.
# In the regressions testing interactions with rent,
   the rent variable is scored inversely to permit ease
   of interpretation of the interaction terms.
The term bars is used to represent a particular type
   of liquor establishment, either taverns only, lounges
   only or the total of taverns and lounges.

housing units in large apartment buildings and higher percentages of black residents.[4]

The next analysis examines t-tests for blocks with taverns, lounges, or both on them. The results of the liquor establishment t-tests are in Table 13. For this test only, all but the following control variables are statistically significant: the percentage of primary individuals, the percentage of residents over 60 years of age, density, population potential and the percentage of multi-unit structures. The largest statistically significant differences are for the percentage of black residents, the percentage of female-headed households, the percentage of overcrowded households and mean rent. Thus, homicides occur on liquor establishment blocks that have more apartment buildings, higher concentrations of black residents and female-headed families and lower rents.

The results of the t-tests between the different types of liquor establishment blocks with and without homicides parallel the results of the regressions testing for interaction effects. There are differences between

TABLE 12

Differences of Means between Tavern Only Blocks with Homicides and Tavern Only Blocks without Homicides

VARIABLE	Tavern Only Blocks With Homicides	Tavern Only Blocks Without Homicides	t	p*
Homicide	1.0750	0.0	83.86	.000**
% Primary Individuals	19.4039	17.2160	0.73	.470
% Female-Headed Households	23.1225	17.0451	2.67	.011
% Black	57.5912	24.2176	5.07	.000***
Rent	121.7228	135.4947	-2.48	.013
% Over 60	15.8887	19.7560	-2.24	.025
Density	38.3330	35.9136	.61	.543
% Overcrowded	10.5170	7.5626	2.28	.023
% Multi-Unit	15.4487	6.0793	2.02	.050
Population Potential	23.5051	23.2943	.48	.631
N	40	424		

*   All probabilities are two-tailed.

** The one-tailed probability for homicide is .000.

*** The two-tailed probability is less than or equal to .00050.

TABLE 13

Differences of Means between Liquor Establishment
Blocks with Homicides on Them and Liquor Establishment
Blocks without Homicides

VARIABLE	Liquor Establishment Blocks with Homicides	Liquor Establishment Blocks Without Homicides	t	p
Homicide	1.0816	0.0	83.63	.000**
% Primary Individuals	20.8485	17.5516	1.11	.271
% Female-Headed Households	22.6096	16.9016	2.74	.008
% Black	58.1448	24.5910	5.60	.000***
Rent	119.9871	136.4302	-3.24	.001
% Over 60	17.1088	19.8633	-1.37	.176
Density	37.2447	35.7269	.45	.653
% Overcrowded	11.4273	7.5648	2.47	.017
% Multi-Unit	15.2592	7.1822	1.93	.059
Population Potential	23.5503	23.2897	.66	.511
N	49	450		

*   All probabilities are two-tailed.

** The one-tailed probability for homicide is .000.

*** The two-tailed probability is less than or equal
   to .00050.

blocks with liquor establishments and homicides and
blocks with liquor establishments but no homicides.
Generally, the liquor establishment blocks with homicides
are more frequently in poorer areas or in areas with high
concentrations of black residents. Table 14 lists the 49
liquor establishment blocks with homicides and presents
the number of homicides, type of liquor establishment(s),
the percentage of black residents and the average rent
for these blocks.

Of the forty nine liquor establishment blocks with
homicides, 26 blocks have over 70 percent black
residents. On twenty two of these blocks the percentage
of black residents is over 90 percent. These high
concentrations of minority residents on just over half
the liquor establishment blocks with homicides are what
produce the small but statistically significant
interaction effects between the percentage of black
residents and the different measures of liquor
establishments. The remaining 23 blocks have populations
that are less than 70 percent black. Eighteen of these
blocks have populations less than 50 percent black, 12 of
which have no black residents at all.

Average rents on the 49 liquor establishment blocks
with homicide range from $74.09 to $267.41. Thirteen
blocks (26.5 percent) have average rents below $100.

Thirty two blocks (65.3 percent) show rents between $100 and $150. The remaining four blocks have rent values between $150 and $300. This concentration of low rental values on liquor establishment blocks with homicides is what produces the small but statistically significant effects between average rental values and the different measures of liquor establishments.

6. Spatial Patterns

My final analysis identifies the spatial locations of the 49 liquor establishment blocks on which homicides occurred. These blocks were plotted on a street map of Cleveland using Census Bureau tract and block numbers. Thirty nine of the liquor establishment blocks with homicides (79.6 percent of the blocks) are on the east side of Cleveland (east of the Cuyahoga River). The remaining 10 liquor establishment homicide blocks (20.4 percent) are located in the west part of Cleveland. Of the total of 584 liquor establishments, 340 or 58.2 percent are located on the east side on 285 blocks which are 57.1 percent of the residential city blocks with liquor establishments on them. Thus, the concentration

TABLE 14

Census Tract and Block Numbers of
49 Liquor Establishment Blocks
with Homicides

Tract Block	Number of Homicides	% Black	Average Rent
104200201	2	2.91	102.36
113200207	2	95.61	119.26
117300103	2	53.33	136.63
117300305	2	95.24	136.13
101200115	1	3.43	130.97
102600102	1	1.06	145.50
102600305	1	0.0	119.00
102800101	1	0.0	116.54
102800110	1	0.0	137.59
103200206	1	0.0	99.00
103600214	1	0.0	115.77
103800202	1	0.0	117.00
104900303	1	0.60	123.67
105600307	1	0.0	139.62
107900105	1	0.0	94.23
108500119	1	61.64	95.95
108600105	1	44.87	92.35
108800301	1	56.38	139.05
109300209	1	100.00	80.00
109700101	1	98.96	102.33
110800111	1	0.0	95.0
110800205	1	0.0	97.73
111600204	1	60.74	118.23
111900402	1	73.13	103.07
111900501	1	96.14	114.80
112100204	1	77.34	103.59

TABLE 14 (continued)

Census Tract and Block Numbers of
49 Liquor Establishment Blocks
with Homicides

Tract Block	Number of Homicides	% Black	Average Rent
112300104	1	100.00	103.46
112400506	1	100.00	98.57
112900205	1	99.00	85.93
112900209	1	100.00	83.75
113100205	1	99.41	106.60
113300102	1	96.67	86.14
113600105	1	100.00	104.07
113800309	1	100.00	81.67
114200207	1	100.00	74.09
116200102	1	98.48	110.86
116700201	1	99.43	117.73
116900101	1	92.20	145.21
116900104	1	94.74	142.40
116900302	1	98.02	126.40
117700412	1	0.0	191.00
117900116	1	26.84	148.00
117900407	1	67.57	164.24
119400506	1	74.10	133.43
119800303	1	98.92	103.70
120100104	1	94.19	116.47
121400502	1	89.47	137.27
121900108	1	98.66	175.00
124200501	1	0.0	267.41

of liquor establishment blocks with homicides is higher
on the east side than is that of liquor establishment
blocks as a whole.

Of the 49 residential blocks with liquor
establishments and homicides, four of the blocks had two
homicides committed on them. Three of these four blocks
are in east Cleveland. The one multiple homicide liquor
establishment block which is west of the river is near an
industrial area called the "Flats". The homicide blocks
with liquor establishments on the east side form two
sectors pointing northeast and southeast reaching to the
city border. With only two exceptions the liquor blocks
with homicides on the west side form a southerly pointing
sector approximately 4 miles long. In the twentieth
century, the east side has been the poorer part of
Cleveland (Van Tassel and Grabowski 1987). The central
area close to the river on the west side has also been
disadvantaged traditionally. The results of this mapping
point to the link between social and spatial patterns and
provide a physical reference for the results of the
statistical analyses.

Notes

1. I also examined t-tests between blocks with taverns regardless of the presence of lounges and blocks without either taverns or lounges. This group of tavern blocks had an average .0977 homicides per block which was 1.9 times the mean number of homicides .0504 for blocks without either liquor establishment. This difference is statistically significant with a t of 3.11 and a two-tailed probability of .002. For completeness, a t-test between tavern only blocks and other blocks regardless of the presence of lounges was also computed. For this t-test the average number of homicides on tavern blocks was .0927. This average is 1.8 times the mean number of homicides .0511 for blocks without taverns regardless of the presence of lounges. This difference is statistically significant with a t of 2.76 and a two-tailed probability of .006.

2. I also examined t-tests between blocks with lounges regardless of the presence of taverns and blocks without either taverns or lounges. This group of lounge blocks had an average .2857 homicides per block which was 5.3 times the mean number of homicides .0537 for blocks without either liquor establishment. This difference is statistically significant with a t of 2.64 and a two tailed probability of .012. For completeness, a t-test

between lounge only blocks and other blocks regardless of
the presence of taverns was also computed. For this t-
test the average number of homicides on lounge blocks was
.2500. This average is 4.6 times the mean number of
homicides .0543 for blocks without lounges regardless of
the presence of taverns. This difference is
statistically significant with a t of 2.00 and a two-
tailed probability of .056. This difference is to be
regarded as statistically significant because the
hypothesis was directional and the one-tailed probability
to evaluate the hypothesis has a value of .028.

3. I also conducted regressions using logarithms of
variables with skewed distributions as indicated by
standard deviations which were substantially larger than
the means. The skewed variables are number of homicides,
the percentage of black residents, density, the
percentage of overcrowded units, the percentage of
housing units in multi-unit structures, the number of
taverns, the number of lounges and the total number of
both liquor establishments. The results of these
analyses parallel those of the first set of regression
analyses. An increase in the R-squared values is
obtained, but the difference is minimal.

4. For completeness, a t-test was also computed for
lounge-only blocks with and without homicides on them.

Only the percentage of black residents and mean rent are

statistically significant. Lounge-only blocks with

homicides had an average of 73.23 percent black residents

which was 2.68 times the mean percentage of lounge-only

blocks without homicides. This difference is

statistically significant with a t of 2.55 and a two-

tailed probability of .017. Average rent for lounge-only

blocks with homicides was $116.39 which was 26 percent

lower than the average rent on lounge-only blocks without

homicides. This difference is statistically significant

with a t of -2.73 and a two-tailed probability of .011.

CHAPTER V

DISCUSSION

My concern is to evaluate the effect of the presence of taverns and lounges in residential areas on the number of homicides which occur in these areas. This study replicates the work of Roncek and Bell (1981) who found the effect of bars on the locations of crime in residential areas to be positive and statistically significant. Their findings supported the theoretical arguments that increasing the number of people in residential areas would be associated with more crime.

The present study replicates Roncek and Bell, but differs in three specific ways: 1) it inquires if Roncek and Bell's findings are limited to a specific time or persist ten years later; 2) it analyzes whether there are different effects on homicide for establishments that label themselves as either taverns or lounges; and 3) it investigates if Roncek and Bell's findings are also applicable to a specific crime type, homicide.

Studies by Roncek and Bell (1981); Frisbie et al. (1979) and Hope (1985) suggest that the presence of liquor establishments increases the amount of crime on residential blocks. These findings are consistent with

the emphasis given to the importance of land uses as crime facilitators in the routine activities theory. Hypotheses derived from routine activities theory have been tested by Roncek and his associates (Roncek 1981; Roncek and Bell 1981; Roncek and Lobosco 1983; Roncek and Faggiani 1985) to understand crime patterns. The connections found between several different environmental features and crime particularly by Roncek and his colleagues justifies research into where crimes occur and how this is affected by the uses which people make of specific areas in a city.

The study tests two alternative hypotheses. The first is derived from Jacobs (1961) and states that the presence of non-residential uses (in this case taverns and cocktail lounges) on residential city blocks is associated with lower levels of homicide incidence. The second hypothesis is based on the work of Frisbie et al. (1977) and Roncek and Bell (1981) and states that the presence of taverns and cocktail lounges increases the amount of homicide on residential city blocks.

The findings of my study support the second hypothesis. Blocks with either taverns or cocktail lounges have positive and statistically significant effects on homicide occurrence. These findings are consistent across all of the statistical analyses and

tests to which the data were subjected.

Tests for the difference of means showed that residential city blocks with taverns on them and those with lounges on them had higher average levels of homicides than blocks without these uses. The multiple regression coefficients for the number of taverns and the number of lounges were statistically significant for predicting the number of homicides on residential city blocks. The numerical values of these coefficients, while small, were positive indicating that the presence of either type of liquor establishment on the residential blocks does increase the risk of the occurrence of homicide. The tests for statistical interaction between the number of taverns or lounges or their combined total with the economic and racial composition of the blocks suggest there are no strong unique effects from locating these nonresidential land uses in poor or minority areas.

Although the numerical values of the multiple correlation coefficients and both the standardized and unstandardized coefficients were small, they still point to and confirm important patterns. Of the 244 homicides which took place on the residential city blocks in Cleveland in 1980, fifty-three of these homicides or almost twenty-two percent occurred on blocks with taverns or lounges or both on them. Since the 499 residential

blocks with liquor establishments represent approximately eleven percent of such blocks in the city, the risk of homicide on these blocks is almost double the risk on blocks without these businesses. These statistical analyses are useful because they show that this apparent difference between blocks with or without these businesses is not due to the differences in the social and environmental characteristics between these blocks which the analyses controlled.

As a final means of situating the ecological pattern of homicide with taverns and lounges, I plotted the locations of blocks which had either taverns or lounges and which also had homicides on a street map of Cleveland and found that a discernable spatial pattern was present. Forty two of the homicides (85.7 percent) on residential city blocks with liquor establishments occurred in east Cleveland (east of the Cuyahoga River). The remaining homicides occurred in west Cleveland. This concentration of blocks with both liquor establishments and homicides is much higher than the concentration of liquor establishments on the east side. Of the 584 liquor establishments, 340 or 58.2 percent were on the east side on 285 blocks. The remaining 41.8 percent of these liquor establishments or 244 of these businesses were on the west side on 214 blocks. In addition, three of the

four liquor establishment blocks with two homicides, the
maximum number of homicides on liquor establishment
blocks, were on the east side. The fourth two-homicide
liquor establishment was, or course, on the west side.
As 190 or 77.7 percent of the total of 244 homicides on
residential city blocks occurred on the east side, the
spatial concentration of the total number of residential
homicides and the spatial concentration of liquor
establishment blocks with homicide parallel each other
closely. The east side of Cleveland has been regarded as
more disadvantaged than the west side for most of the
twentieth century (Van Tassel and Grabowski 1987).

Although there is a clear spatial pattern, there is
no apparent problem of spatial autocorrelation. First,
the use of population potential permits measuring the
effects of the number of people in the surroundings of
the blocks. The number of people in the surroundings can
be one cause of spatial autocorrelation because they can
use the blocks to which they are close and thus increase
the problem of maintaining social control which can lead
to a higher levels of crime. Second, other analyses
using an explicit measure of the amount of crime in the
surroundings of the blocks showed no important effects on
homicide.

The non-residential land uses analyzed in this study

are associated with higher levels of homicide on residential blocks. The results of this very closely parallel those of Roncek and Bell (1981). I find smaller values of R-squared and other statistics because of the small number of homicides compared to other types of crime. Such small values are to be expected when a small number of crimes, 244 homicides, are distributed across a large number of units of analysis, 4396 city blocks.

The results of this study are important both for understanding crime and for public policy. They lend support to the theory of routine activities and to urban crime research that focuses on the importance of the environment and the presence of land uses that are crime facilitators. The results also show that the presence of a specific non-residential use in residential areas has an effect on the most serious of all crimes, homicide, a violent crime for which the routine activities approach has had little to say. Furthermore, my results are important because they show that the effects for these specific land uses are not limited to a single point in time.

The results are important for public policy since they point to the importance of selective monitoring of places which can be crime facilitators which are already subject to some regulation. They also point to the need

for care in such monitoring because over 90% of the
blocks with these land uses had no homicides. Thus,
severe regulation or the wholesale removal or prohibition
of taverns and lounges from residential areas finds no
justification from the results of my analysis.
Concentrating non-residential land uses in strips or
areas with only other non-residential uses could have
more detrimental effects than those reported here.

My study meets two of the three commonly-accepted
conditions for demonstrating causality. The condition of
time-order is met because the list of liquor
establishments is derived from a 1979 source, one year
before the occurrence of homicides. Thus, the values of
the dependent variable, the number of homicides, occurred
after the occurrence of the values of the independent
variable, liquor establishments. Second, my study shows
that an association does indeed exist between the values
of the independent variables and the values of the
dependent variable. This association was consistent
throughout the various types of analyses in which the
effects of my major independent variables were tested,
while controlling for a number of other variables.

As usual, several caveats are necessary. Homicide
data for only one year are analyzed. The major
consequence of this is that the effects of liquor

establishments and other independent variables are probably underestimated. Second, I did not have access to the specific addresses of the homicides nor to the original police reports. Thus, I cannot ascertain if the homicides were a direct result of social interactions linked to these establishments. As Hope (1985) notes, the police reports themselves can be inconsistent and ambiguous, so that their unavailability is unlikely to be a serious problem.

The detrimental effects on homicide found in this study pertain only to residential city blocks which have either taverns or lounges. The effects on residential city blocks which are adjacent to those blocks with taverns or lounges were not examined. This study also did not investigate whether the presence of other types of non-residential uses on the blocks with taverns or lounges affects the number of homicides on these blocks. Although such uses may affect homicide occurrence, and remain the major threat with regard to spuriousness, it is not reasonable to examine the effects of the presence of other non-residential land uses without first showing that taverns and cocktail lounges have positive and statistically significant effects. Roncek and Bell found that the presence of other nonresidential land uses on residential city blocks with bars aggravated the impact

which bars had on crime occurrence, but the effects of bars on the amount of crime occurring still was positive and statistically significant while controlling for these other uses. Finally, the study is confined to a single city and its generalizability to other milieus which differ substantially from Cleveland must remain as a topic for further research.

The study has several strengths. First, it is a replication and extension of a previous study (Roncek and Bell 1981) and thus, the consistancy of the results provides additional support for the major findings of previous work. Second, this study extends the earlier work through (1) analyzing the effects of two different types of liquor establishments, and (2) focussing on the effects of such establishments on a specific and highly important type of crime, homicide. This specificity is missing from previous research.

The effect of the presence of taverns and lounges on homicides is strong enough to suggest that policies focus on monitoring and regulating certain areas. Although the results of my study are statistically significant, it is important to note that only ten percent of the residential city blocks with taverns or lounges had homicides on them in 1980. Over 90 percent of these blocks with either taverns or lounges did not have

homicide occur on them.

My study is an addition to the trend of urban crime studies of Roncek and his associates incorporating the routine activities approach and non-residential land use. Further studies are needed to extend this line of research because of the limitations inherent in these analyses. Four very direct expansions of this study would provide even stronger evidence for my hypotheses. First, examining the exact address of where the homicide occurred could show whether the crime actually took place in either a tavern or a lounge, or at least if it happened on the same side of the street as a tavern or a lounge. This information could provide a more direct link between the presence of these types of liquor establishments and the occurrence of homicide. Second, despite the difficulties with police reports, it would be valuable to have them. In some cases they could be useful for establishing a clearer linkage of taverns and lounges with homicide.

Third, examining the presence of other non-residential land uses could help address the problem of spuriousness. Also, supplementing the data from documentary sources with on-site inspections of the blocks with taverns and lounges would be valuable. This would allow identifying any consistent configurations of

housing, land uses, lighting, and activity patterns which could serve to translate the associations found in this study and in Roncek and Bell (1981) into the reality of crime. Such determinations cannot be made as thoroughly even from information on the addresses of other land uses which are present on the blocks.

Fourth, the difficulties in explaining the ecological distribution of a crime as rare as homicide could at least partially be overcome by examining the aggregate number of homicides from 1979 to 1981. Three years of homicide data would be likely to have a more stable frequency distribution than a single year of data and by necessity, would have a larger variance than data for a single year. The effects of these differences would most likely be to increase the variance explained in homicide and would provide more confidence that the effects of taverns and lounges on homicides is not due to fortuitous events in 1980.

The scope of this study could be enlarged by two other closely related extensions. First, the ecological range of the detrimental effects should be investigated. Individuals could become involved in violent conflict which would still be related to their interactions associated with taverns or lounges on blocks near but different from the blocks with these uses. A homicide

could occur across the street from the block with a
tavern or lounge if this is where a disagreement which
began earlier reaches its ultimate climax. The final
denouement could just as well occur on a block which
borders any side of the tavern or lounge block because
individuals may have to go to these locations after
leaving the tavern or lounge for a variety of purposes
such as returning to one's car.

Logically, undertaking such an extension should
begin by first examining if any effects emerge for blocks
which are immediately adjacent to blocks with the taverns
or lounges. If such effects are present then the range
of blocks examined should be expanded until no
statistically significant effects are found. Again,
being able to check the exact addresses of the homicide,
having access to the original police reports and being
able to assess the influence of the presence of other
types of non-residential land uses continue to be
valuable additions to this extension.

Finally, my analyses examine the most severe and
rarest crime, homicide. There are numerous violent
conflicts between individuals which do not end in a
homicide. Indeed, the final outcome of a violent dispute
can depend on accidental circumstances such as the type
of weapon to which the assailant had access, how fast

authorities were notified, how fast medical help arrived, and how long it took to put the victim under full medical care. Because of the importance of such possible effects on whether conflicts become homicides, it would be valuable to analyze the effects of taverns and lounges on other specific types of violent crime. Assaults would appear to have the greatest potential for escalating into homicides. Barroom brawls are a part of common folklore. Thus, it would be useful to examine the association of assaults with the presence of taverns and lounges. Such a study would be even more valuable if it were possible to trace the emergence of homicides from the preceding interactions between the perpetrator and the victim.

All of the extensions proposed above would help to provide further evidence against spuriousness. Yet, even these enhancements cannot provide incontrovertible proof that taverns and/or lounges cause homicide. The necessary proof can only be obtained through an experimental design in which, for example, taverns or lounges are randomly assigned to city blocks and crime levels are measured and compared before and after these establishments are allowed to do business. Clearly, this is not feasible. The best possible approximation to an experimental design would be a longitudinal study of the effects of changes in the number of taverns and lounges

on city blocks on changes in crime.

All of the above suggestions are further improvements in the ecological analysis of the effects of taverns and lounges on crime. Yet, homicide is an interaction between individuals who bring beliefs, values, predispositions and other personal characteristics to every interaction in which they are involved. The importance of these individual-level influences should not be ignored. Individuals are important. Indeed, they are the focus of the voluminous part of Wolfgang's (1958) classic work on homicide which is the foundation for most of the analysis of homicide since its publication. It is worth noting, however, that attempting to predict statistically which individuals will commit homicide at some point in their lives or become victims is unlikely to produce more statistically powerful results than those from ecological analysis. Homicide offending and victimization among individuals have even more difficult statistical distributions to analyze than the distribution of homicide locations across residential city blocks. Ecological analyses, however, can be useful for implementing prevention measures particularly when it is difficult to identify which areas have the most severe needs. Prevention efforts can be directed at these areas with reasonable

certainty that those most in need of them will be reached.

My study represents one way of examining the effects of a specific non-residential land use, liquor establishments, on a specific violent crime type, homicide. My research provides an important step in the investigation of urban crime and helps explain the effects of the environment and routine activities on crime in residential areas. Of course, as in any study many additional issues remain for further research. It is my hope that this study will serve as a useful foundation for further work.

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THE EFFECTS OF TAVERNS AND LOUNGES ON HOMICIDES
IN RESIDENTIAL AREAS

by

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This thesis is a partial replication of an earlier study by Roncek and Bell (1981). They found that bars serving liquor had a detrimental effect on the amount of crime in the residential areas in Cleveland for 1970. Their findings supported theoretical arguments derived from the routine activities approach that increasing the number of people in residential areas would be associated with more crime.

This thesis extends the work of Roncek and Bell by examining the effects of taverns and lounges on the locations of homicides in Cleveland for 1980. I use multiple regression to analyze the incidence of homicide across all of Cleveland's residential city blocks. My findings parallel those of Roncek and Bell (1981). Taverns, lounges, and the total number of both of these liquor establishments have positive and statistically significant effects on the number of homicides.

These findings demonstrate that routine activities theory can be useful for understanding violent crime. Also, they show that this particular land use has criminogenic effects which persist over time. Finally, the results imply that careful monitoring of these establishments would be valuable, but the results do not warrant severe forms of regulation.