

Robinson, Matthew B. (1997). Environmental characteristics associated with residential burglaries of student apartment complexes, *Environment and Behavior* 29, 5: 657-675. SAGE - DOI: 10.1177/0013916597295004 (ISSN: 0013-9165)

Environmental Characteristics Associated With Residential Burglaries Of Student Apartment Complexes.

Matthew B. Robinson

ABSTRACT

This study identified environmental characteristics associated with residential burglaries of apartment complexes predominantly occupied by students, located near two major universities and a community college in Tallahassee, Florida. Through observation and measurement of environmental characteristics, results showed that accessibility played little role in differentiating burglarized and nonburglarized apartment units. Yet, burglarized units were disproportionately likely to be located on the corner of the building and on the first floor. Results also showed that apartment units with reported burglaries in 1993 were less surveillable than apartment units with no reported burglaries--i.e., burglarized units were more obstructed by foliage or structure. Finally, through surveying student apartment residents, results suggested that burglaries largely occurred at times when students reported being away from their apartments for purposes of attending classes, engaging in recreational activities, or shopping. The results add additional support for the well-established link between environmental characteristics and residential burglary.

ARTICLE

Over the past several decades, there has been a growing body of theoretical and research literature dealing with environmental factors associated with burglary. This literature seldom has given specific attention to apartment complexes, and studies focusing on privately owned and operated complexes predominantly occupied by college and university students are conspicuous by their absence.

We use the term conspicuous above, because college and university enrollments in the United States presently stand at about 11.2 million, and are projected to increase to about 12.5 million in the next decade (Almanac of Higher Education, 1993, pp. 44-45). Although no national, state, or local figures could be obtained concerning student residence in private apartments, a limited survey involving 320 criminology/criminal justice students at two state universities and a community college (Florida State University, Florida Agricultural and Mechanical University, and Tallahassee Community College, Tallahassee, Florida) revealed that 76% presently lived in off-campus, privately operated apartment complexes, or had previously done so while attending a college or university.

Granting the limitations of this small survey, the findings at least suggest that the phenomenon of students living in apartments is of a magnitude to warrant careful research attention. As college and university enrollments continue to grow, the likelihood that students will live in apartments will also increase. Thus, the primary objective of this article is to begin filling a discernible gap in the criminological literature by shedding light on environmental factors associated with the burglarizing of student apartments.

THEORETICAL CONSIDERATIONS

The primary theoretical questions addressed by most environmental burglary studies deal with how offenders select their targets and decide to carry out the offenses. Several theoretical positions about criminal behavior generally have been examined in burglary research. The most prominent of these are referred to as "rational choice theory," "situational opportunity theory," and "routine activities theory."

Rational choice theory (e.g., Akerstrom, 1983; Bennett & Wright, 1984; Brantingham & Brantingham, 1981; Brown & Altman, 1981; Cornish & Clarke, 1986; Cromwell, Olson, & Avary, 1991; Nee & Taylor, 1988; Tunnell, 1992; Wright & Logie, 1988) posits that criminals first decide to commit an offense, and then weigh perceived environmental risks and rewards in selecting a target and deciding whether to carry out their intent. Situational opportunity theory (e.g., Maguire & Bennett, 1982; Rengert & Wasilchick, 1985; Scarr, 1973; Stack, 1995; Waller & Okihiro, 1978; Walsh, 1986) holds that criminal behavior most often reflects offenders' exploitation of perceived opportunities. Of course, much of the environmental research dealing with burglary can be interpreted with both rational choice and opportunity theory, since, as Cornish and Clarke (1986) have pointed out, "rational" involves evaluation of opportunity.

Routine activities theory (e.g., Cohen & Felson, 1979; Cohen, Felson, & Land, 1980; Kennedy & Baron, 1993; Kennedy & Forde, 1990a, 1990b; Massey, Krohn, & Bonati, 1989; Maxfield, 1987a, 1987b; Miethe, Stafford, & Long, 1987; Roncek & Maier, 1991; Sherman, Gartin, & Buerger, 1989) suggests that crime results from the convergence of three elements in time and space: a presence of potential or motivated offenders; a presence of suitable targets; and an absence of capable guardians to prevent the criminal act. Specifically, a "dispersion of activities away from households and families increases the opportunity for crime and thus generates higher crime rates" (Cohen & Felson, 1979, pp. 588, 593). In the course of routine, normal, or patterned recreational or work activities, suitable targets become more discernible, thus increasing the likelihood of the commission of offenses. Routine activities theory is widely held as a subset of a more general opportunity model (Cohen, Kluegel, & Land, 1981; Sampson & Wooldredge, 1987), since "Routine activities theorists view street crime as a product of opportunity that arises in the ongoing activities that occur on the street," whereby the likelihood of being a victim of crime increases when the three elements above converge in time and space (Kennedy & Baron, 1993, pp. 92, italics added).

ENVIRONMENTAL CHARACTERISTICS OF BURGLARY

Regardless of the theoretical perspective of researchers, research indicates that offenders generally use distinguishing environmental stimuli that function as cues to provide important information about the potential targets' relevant characteristics (Bennett & Wright, 1984; Brantingham & Brantingham, 1978, 1981; Brown & Altman, 1981; Cromwell et al., 1991; Wright & Decker, 1994). Burglars have reported a preference for targets that exhibit "useful" characteristics, such as poor street lighting, lots of bushes obstructing entry points, and quiet streets, which may result in low levels of surveillability and an abundance of hiding places (Letkemann, 1973; Phelan, 1977).

At the same time, certain environmental stimuli may serve as inhibitors to criminal activities. Cromwell et al. (1991, p. 33) found that burglars' decisions to offend against residences were based primarily on environmental cues that were perceived to have immediate consequences. In the study, burglars assessed potential gains versus potential risks. The higher the perception of gain and the lower the perception of risk, the greater the likelihood for an attempted burglary offense to occur. Brantingham and Brantingham (1981, p.65) earlier developed a similar hypothesis regarding burglars' judgments and decisions about the likelihood of successful entry into and exit from a residence. Given an expectation of gain, environmental characteristics that act as cues to offenders to suggest an excess of risk should discourage burglars from offending in the immediate environment.

Some researchers have obtained data about environmental cues directly from burglars, and then used these findings to propose or test theoretical generalizations about offenders' perceptions and thought processes concerning opportunity and risk for committing offenses (see, e.g., Bennett & Wright, 1983, 1984; Cromwell et al., 1991; Walsh, 1986; Wright & Decker, 1994; Wright & Logie, 1988). Others have collected data on environmental conditions under which burglaries occur, and have also used the findings to make inferences about burglars' perceptions and decision-making processes (see, e.g., Hope, 1984; Scarr, 1973).

In both approaches, the emphasis on mentalistic factors of "perception" and "rationality," which cannot be directly empirically tested, makes the theoretical interpretations questionable. Further, the latter approach completely overlooks the necessity for studying burglars, instead of just the environmental conditions at burglary sites, to make inferences about burglars' motivational and decision-making processes. To take the conditions under which burglaries have been committed as indicators of offenders' decision-making processes, and in turn give the decision-making processes as the reason for commission of the burglaries under those conditions, constitutes the logical error of circular reasoning, defined by Akers (1994, p. 8) as "placing a label on a behavior and then using that label to explain the same behavior."

To avoid the above problems, no effort was made in this study to test hypotheses about whether offenders' target-selection is primarily determined by rational choice associated with a pattern of burglarizing behavior, by spontaneous situational opportunity, by target identification in the course of routine daily activity, or by some combination of these circumstances. Because it was not the goal of this research to explain burglary, indicators of environmental variables that have been used in this manner in the literature were utilized in this investigation for descriptive purposes. That is, environmental variables were employed in the conceptual framework of physical vulnerability for burglary, without regard for the relative extent to which potential burglars might perceive the factors as "risk cues." Thus, the study proceeded on the simple, basic premise that environmental factors are indeed important interactive influences with organic factors in burglars' selections of targets, and in their final on-site decisions to attempt, or not attempt, the commission of an offense.

ACCESSIBILITY, SURVEILLABILITY, AND OCCUPANCY

As established by Cromwell et al. (1991), environmental factors related to the crime of residential burglary may be usefully categorized in terms of target accessibility, surveillability,

and occupancy, defined respectively as: "indications of how easily the residence can be entered and how well the site is protected" (p. 37); "the extent to which a residence is overseen and observable by neighbors or passersby" (p. 35); and "any cues that indicate someone is home" (p. 37).

In the body of literature concerning environmental factors associated with burglary, the importance of accessibility of the target has been strongly and consistently emphasized (e.g., Bennett & Wright, 1983, 1984; Bevis & Nutter, 1977; Brown & Altman, 1981; Clarke & Mayhew, 1980; Conklin & Bittner, 1973; Cromwell et al., 1991; Davidson, 1984; Decker, 1972; Girard, 1960; Goodman, Miller, & Deforrest, 1966; Luedtke, 1970; Maguire, 1982; Maguire & Bennett, 1982; Mayhew, Clarke, Burrows, Hough, & Winchester, 1979; Molumby, 1976; Newlands, 1983; Newman, 1972; Newman & Franck, 1981; Phelan, 1977; Poyner, 1983; Rengert, 1981; Rengert & Wasilchick, 1985; Reppetto, 1974; Scarr, 1973; Waller & Okihiro, 1978; Walsh, 1980; Winchester & Jackson, 1982; Wright & Logie, 1988). Essentially, the more accessible a target is to potential and motivated offenders, the more vulnerable it is to criminal victimization.

The environmental factors of primary importance have been identified as location and types of doors and windows, utilization of locks, burglar alarms, fences, walls, burglar bars, dogs, intercom systems, presence of guards or doormen, number of escape routes, gateways, steps, number of entrances, type of street on which residence is located, location of residence on street and in building, and proximity to street.

Surveillability is another environmental variable that has been consistently found to be related to the risk of criminal victimization (e.g., Bennett & Wright, 1984; Brown & Altman, 1981; Clarke & Mayhew, 1980; Cromwell et al., 1991; Dietrick, 1977; Jacobs, 1961; Maguire & Bennett, 1982; Mayhew, 1981; Molumby, 1976; Newman, 1972; Poyner, 1983; Reppetto, 1974; Scarr, 1973; Waller, 1976; Waller and Okihiro, 1978; Walsh, 1980; Winchester and Jackson, 1982). Essentially, the less visible a target is to neighbors and passersby, the more vulnerable it is to criminal victimization.

Finally, prior research has consistently indicated that patterns of nonoccupancy are associated with burglary. For example, burglar interview studies (Cromwell, et al., 1991; Maguire & Bennett, 1982; Walsh, 1980; Wright & Decker, 1994) and analysis of times of burglary (Reppetto, 1974; Waller & Okihiro, 1978; Winchester & Jackson, 1982) have both demonstrated

the importance of occupancy in deterring burglary. Scarr (1973) found in a study, in Washington, D.C., that residential burglary occurred during the daytime and on weekends, following relatively regular patterns of nonoccupancy. Approximately half of all residential burglaries in Scarr's study occurred during a 6-hour period between the hours of 10 a.m. and 4 p.m. Rengert and Wasilchick (1985) also found that occurrence of burglary corresponded with occupants' schedules, because burglaries occurred during times when dwellings were left unoccupied. Reppetto (1974) found that the rate of burglary was highest in buildings with low occupancy. In his study of burglary in Boston, Reppetto concluded that structures that were occupied for less than 35 hours per week had much higher rates than dwellings that were occupied more often.

Offenders also say, "in their own words," that they prefer not to enter residences that are occupied (Cromwell, 1995). According to Cromwell et al. (1991, p. 37), 28 of the 30 burglars in their ethnographic study of breaking and entering indicated they would never intentionally enter an occupied residence. In Wright and Decker's (1994) study of residential burglary, occupancy served as a major risk factor associated with the decision not to enter a potential target residence.

Given the importance of these environmental variables, the present study is aimed at the identification of environmental factors of accessibility, surveillability, and occupancy, if any, which differentiate burglarized student apartment units from nonburglarized units.

RESEARCH DESIGN AND METHODOLOGY

This study focused on a city police zone (Zone 7, Tallahassee, Florida) that is characterized by high rates of reported crime and is located near two state universities and a community college (Florida State University, Florida Agricultural and Mechanical University, and Tallahassee Community College). The original data provided by the Tallahassee Police Department included the addresses of all residential burglaries in the specified area that were reported to the department during the calendar year 1993, plus the points and methods of entry, and the dates and estimated times of the offenses. The area contained 66 apartment complexes, 51 of which were reported by management personnel to have more than 50% student occupancy. In fact, the average percentage of student occupancy in the apartment complexes studied was approximately 85%. These 51 apartment complexes contained a total of 3,570 separate apartment units.

The study specifically analyzed all 94 burglarized units (with a total of 96 reported burglaries) within the 51 complexes, plus a random sample of 140 units that had no reported burglaries during 1993. For complexes without reported burglaries during the year, the number of

apartment units selected for study was based upon the average number of burglarized units for other complexes of the same or nearest size.

The general design of the study focused on three major categories of variables adopted from the work of Cromwell et al. (1991), as noted earlier. These were accessibility, surveillability, and occupancy. Thus, for the present study, the definitions of accessibility and surveillability were accepted as, "indications of how easily the [apartment unit] can be entered and how well the site is protected" (p. 37), and "the extent to which [an apartment unit] is overseen and observable by neighbors or passersby" (p. 35), respectively. The environmental characteristic data were collected in early to mid-1994 through researchers' observations at each site. At the site of each unit, data were collected on 5 selected indicators of surveillability, and 13 indicators of accessibility (for specific indicators of each variable, see Table 1). For example, surveillability measures were taken of the fronts, backs, and sides of individual apartment units from various locations including other apartment units, swimming pools, laundry facilities, parking lots, and streets. Surveillability was categorized as "completely obstructed," "partially obstructed," and "completely unobstructed" (ordinal variable). Judgments regarding the level of surveillability were made by a panel of judges, who independently agreed on measurements in approximately 95% of the cases on sample observations.

TABLE 1 Indicators of Occupancy, Surveillability, and Accessibility

Occupancy

- Days and times of
 - Shopping
 - Dining out
 - Recreation and leisure activities
 - Use of laundry
 - Use of pool
 - Visiting in neighboring apartment units

Surveillability (of front, back, and sides of unit, as applicable)

- Visibility (completely unobstructed, partially obstructed, completely obstructed; by architectural structure, foliage, other) from
 - Other apartments
 - Swimming pool (if applicable)
 - Laundry (if applicable)
 - Parking area
 - Street(s)

Accessibility (from front, back, and sides of unit, as applicable)

- Floor of unit
- Location of unit in building (corner, not corner)
- Entrance location(s) (sidewalk, porch, patio, etc.)
- Number and type of doors

- Number and type of windows (sliding, louver, etc.)
- Number and type of locks on doors and windows
- Special security of windows (bars, screens, etc.)
- Window height(s) from ground
- Distance from unit to parking and parking to street
- Complex security
 - Perimeter wall/fence (height of 6 ft. or more)
 - Controlled entrance/exit (gate, guard, etc.)
 - Roving patrol

The Cromwell et al. (1991, p.37) definition of occupancy was "any cues that indicate someone is home." Because observations regarding environmental variables of 1993 burglaries were made in 1994, no attempt was made to operationalize this definition in the sense of "cues," which might or might not have been perceived by burglars as risk factors at the time of the offenses in 1993. Thus, data were collected by questionnaire on 35 aspects of student lifestyle that were deemed to reflect patterns of apartment occupancy; patterns from which occupancy at certain times might be plausibly inferred (see Table 1). In addition, the questionnaire included items about prior victimizations, reporting of victimization (actual and projected), concern about victimization, security precautions, insurance coverage, and several demographic characteristics (age, gender, race, and academic level).

The questionnaire, aimed at student activity and occupancy patterns, was administered to a convenience sample of 320 students enrolled in criminology/criminal justice classes at the two state universities and the community college. The assumption was made that, for the items of concern, these students were not necessarily unrepresentative of most students enrolled in these academic institutions. As noted earlier, of the total respondents, 242 (76%) were currently living in private apartment complexes, or had previously done so as a student.

Because it was necessary that the questionnaires be given anonymously, and because the occupants of apartments frequently change during a year, it was neither feasible nor appropriate to attempt to gain occupancy information from residents of the apartments that had been burglarized in 1993. However, comparisons were made concerning the times of reported offenses, derived from the police data, and the times of students' activities, derived from the questionnaire responses.

Rates for burglary of student apartment units and other residences were calculated using residences as a denominator rather than the number of persons. Using residence as a denominator

is a more valid base for calculating rates of property crimes, such as burglary, since it is a crime against a household rather than an individual person (see, e.g., Boggs, 1964; Rengert, 1972, 1981). Chi-square was used to test the significance of relationships between variables. Based on the premise that higher level data (e.g., ordinal) encompass the assumptions of lower level data (e.g., nominal), Cramer's V was used to determine the relative strength of relationships between ordinal independent and nominal dependent variables.

FINDINGS

ACCESSIBILITY AND STUDENT APARTMENT BURGLARY

The findings concerning factors of accessibility are most surprising in that they run directly contrary to the weight of previously reported evidence. Accessibility factors seem to play a minimal role in differentiating apartment units with reported burglaries from those with no reported burglaries. As discussed above, the literature has been fairly consistent with regard to the positive relationship of accessibility and burglary--i.e., the higher the degree of accessibility, the greater the chance for the occurrence of burglary. Yet, no significant differences were found between burglarized and nonburglarized units in terms of our accessibility indicators. These included type of entrance to the front of apartment buildings, types and amounts of doors and windows, types and amounts of locks on doors and windows, presence or absence of special security hardware on entry points, height of windows from the ground, distance of the units to nearest parking and to nearest street, and measures of complex security (see Table 1). The absence of this relationship in the sample of student apartment units studied was due largely to the architectural homogeneity of units within complexes. For whatever reason, the population of 51 student apartment complexes in Zone 7 are very similar in terms of environmental characteristics. For example, virtually all apartment units, both burglarized and nonburglarized, suffered from woefully inept security precautions, especially target hardening devices, and only two complexes had stationary or roving security patrols.

The only indicators of accessibility that were correlated with residential burglary were two indicators of location in the building (corner unit or not corner unit, and floor of building). In the total population of student apartments in Zone 7, 26% were corner units, whereas 53% of the burglarized apartments were corner units. In the total population of student apartments in Zone 7, 40% were first-floor units, whereas 59% of burglarized apartments were first-floor units. Thus, burglarized apartment units were disproportionately likely to be located on the corner of the building and on the first floor. However, these differences may actually be more attributable to lower levels of surveillability than to higher levels of accessibility. That is, corner units and first-

floor units were less surveillable than noncorner, second-floor, and third-floor units, primarily due to their obstructed visibility by stairways and shrubbery.

SURVEILLABILITY AND STUDENT APARTMENT BURGLARY

The majority of student apartment units in the sample were either completely obstructed or partially obstructed from view by neighbors or passersby on at least one side. Nevertheless, there was a statistically significant inverse relationship between surveillability and reported burglary in student apartments (see Table 2). That is, higher levels of surveillability were present at units that had no reported burglaries. First, burglarized units were generally less surveillable than nonburglarized units from all locations (other apartments, pools, laundry facilities, parking lots, and streets). Second, the actual points of entry (windows, doors) of burglarized units were less surveillable than similar points of entry for nonburglarized units. Because the majority of student apartment burglaries were nonforcible, surveillability probably did not play as big a role as it would have, had the burglars found it necessary to gain entry by force in more cases. Logically, a burglar seen entering a residence forcibly would look more out of place than an offender nonforcibly entering a residence. But, because students are probably more careless about utilizing their locks (e.g., when using the pools and laundry facilities of their apartment complexes), it is apparent that burglars will be able to locate residences in student apartment complexes where successful burglaries will require no force. When we controlled for method of entry, the correlation between surveillability and burglary increased dramatically. Thus, the relationship between surveillability and burglary is much stronger for forcible burglaries than for nonforcible burglaries.

TABLE 2 Correlations of Surveillability and Burglary by Type of Surveillability and Location

	Chi-square	df	V
General surveillability from all locations	40.02	2	0.16
General surveillability from apartments	18.0	2	0.22
General surveillability from pools	9.86	2	0.21
General surveillability from laundry	13.96	2	0.24
General surveillability from parking lots	5.71	2	0.12
General surveillability from streets	4.74	2	0.11
Point of entry surveillability from all locations	23.82	2	0.14
Point of entry surveillability, controlling for method of entry (forcible or not)	17.63	2	0.40

General surveillability from all locations	[is less than]	.005
General surveillability from apartments	[is less than]	.005
General surveillability from pools	[is less than]	.01
General surveillability from laundry	[is less than]	.01
General surveillability from parking lots	[is less than]	.10
General surveillability from streets	[is less than]	.10
Point of entry surveillability from all locations	[is less than]	.005
Point of entry surveillability, controlling for method of entry (forcible or not)	[is less than]	0.001

It should be noted that the slight to moderate differences in levels of surveillability (values of V ranging from 0.11 to 0.40) become more meaningful in light of the fact that the majority of both burglarized and nonburglarized units in the sample studied were at least partially obstructed on one side. That is, small to moderate differences are the most that could have been found in such an environment where surveillability of apartment units is generally low.

NONOCCUPANCY AND STUDENT APARTMENT BURGLARY

Almost one half (49%) of burglaries on weekdays occurred between the hours of 8 a.m. and 5 p.m., the period during which most students attend classes. Meanwhile, more than three fourths (77%) of burglaries on weekends occurred between 6 p.m. and 7 a.m., a time period when students generally go out for recreational activities on weekend nights. Logically, then, periods of nonoccupancy are associated with the offense of burglary.

Still, assuming nonoccupancy from estimated times of burglary offenses without any independent measures of occupancy is circular. But, responses from the student survey of apartment dwellers also demonstrate the relationship between periods of nonoccupancy and burglary. Hours of recreation and shopping are reflected in Figure 1. Estimated times of burglary of student apartment units in 1993 do roughly correspond with opportune times when students go to class, enjoy recreational activities, or go shopping. This finding supports the relationship between increased target vulnerability of residences due to nonoccupancy and burglary.

CONCLUSIONS

This study attempted to identify and analyze environmental characteristics associated with residential burglaries of apartment complexes predominantly occupied by students, located near two major universities and a community college in Tallahassee, Florida. Through observation and measurement of environmental characteristics, results showed that apartment units with reported burglaries in 1993 were less surveillable than apartment units with no reported burglaries--i.e., burglarized units were more obstructed by foliage or structure. Burglarized units were generally less surveillable than nonburglarized units from all locations where measurements were taken (other apartments, pools, laundry facilities, parking lots, and streets). In addition, the actual points of entry (windows, doors) of burglarized units were less surveillable than similar points of entry for nonburglarized units. Finally, results showed that surveillability was most greatly associated with burglary when the burglary was forcible. This implies that the likelihood for being seen is less important when all that is required for successfully gaining entry for purposes of committing a burglary is walking in through an unlocked or open door. Due to the architectural homogeneity of the units studied, few differences were found between burglarized and nonburglarized units in terms of accessibility. The only indicators of accessibility that were correlated with residential burglary were two indicators of location in the building (corner unit or not corner unit, and floor of building). In the total population of student apartments in Zone 7, 26% were corner units, while 53% of the burglarized apartments were corner units. In the total population of student apartments in Zone 7, 40% were first-floor units, while 59% of burglarized apartments were first-floor units. Thus, burglarized apartment units were disproportionately likely to be located on the corner of the building and on the first floor. However, the disproportionate victimization of corner and first-floor units is just as likely due to lower levels of surveillability, as their visibility was generally obstructed by stairways and shrubbery. Finally, through surveying of student apartment residents, results showed that burglaries largely occurred at times when students reported being away from their apartments for purposes of attending classes, engaging in recreational activities, or shopping.

The results add additional support for the well-established link between environmental characteristics and residential burglary. By studying environmental characteristics of apartment residences occupied by students, a previously neglected aspect of criminological research has been focused on. Certainly, further research of this type needs to be conducted in an attempt to replicate the findings. Future researchers should not be surprised to gather similar findings that are unique to apartment residences and/or student residents. For example, future research might verify that levels of accessibility play little role in burglars' decisions to burglarize one apartment residence over another, due to the fact that security mechanisms on doors and windows do not vary much among apartment dwellers. They might also show that any apartment unit is a vulnerable target for burglary, to the degree that apartments are designed, built, and maintained

with low levels of surveillability by neighbors and passersby. Finally, future research might discover that students' patterns of occupancy are unique to their student status, which may either increase or decrease their susceptibility to burglary victimization.

It is fully recognized that opportunities for criminal offenses, which may be enhanced or constrained by environmental conditions such as the behavior patterns of potential victims, are only one part of an adequate understanding of any type of criminal behavior. Such an understanding must also include knowledge of the motivations, capabilities, and perceptions of potential offenders, and how the factors of organism and environment interact to govern the behaviors of those individuals in specific situations. It is hoped that the findings of this study, although limited to environmental characteristics associated with burglary, in the specific situation of student apartments, will be useful to others engaged in the endeavor to understand and prevent burglary offenses.

REFERENCES

Akers, R. (1994). *Criminological theories: Introduction and evaluation*. Los Angeles, CA: Roxbury.

Akerstrom, M. (1983). *Crooks and Squares*. Lund, Sweden: Studentlitteratur.

Almanac of Higher Education. (1993). Chicago, IL: University of Chicago Press.

Angel, S. (1968). *Discouraging crime through city planning*. Berkeley, CA: Institute of Urban and Regional Development, University of California.

Bennett, T., & Wright, R. (1983). Burglars perception of targets. *Home Office Research Bulletin*, 15, 18-20.

Bennett, T., & Wright, R. (1984). Constraints on burglary: The offender's perspective. In R. Clarke & T. Hope (Eds.), *Coping with burglary*. Boston, MA: Kluwer-Nijhoff.

Bevis, C., & Nutter, J. (1977). Changing street layout to reduce residential burglary. Paper presented at the annual meeting of the American Society of Criminology, Atlanta, GA.

Boggs, S. (1964). The Ecology of Crime Occurrence in St. Louis: A Reconceptualization of Crime Rates and Patterns. Ph.D. dissertation, Washington University, St. Louis, Missouri.

Brantingham, P., & Brantingham, P. (1978). Residential burglary and urban form. *Urban Studies*, 12, 273-284.

Brantingham, P., & Brantingham, P. (1981). *Environmental Criminology*. Beverly Hills, CA: Sage.

Brown, B., & Altman, I. (1981). Territoriality and residential crime: A conceptual framework. In P. Brantingham & P. Brantingham (Eds.), *Environmental Criminology*. Beverly Hills, CA: Sage.

Clarke, R., & Mayhew, P. (1980). *Designing out crime*. London, England: Her Majesty's Stationery Office.

Cohen, L., & Felson, M. (1979). Social change in crime rate trends: A routine activity approach. *American Sociological Review*, 44, 588-608.

Cohen, L., Felson, M., & Land, K. (1980). Property crime rates in the United States: A macrodynamic analysis, 1947-1977: With ex ante forecasts for the mid-1980's. *American Journal of Sociology*, 86, 90-118.

Cohen, L., Kluegel, J., & Land, K. (1981). Social inequality and predatory criminal victimization: An exposition and a test of a formal theory. *American Sociological Review*, 46, 505-524.

Conklin, J., & Bittner, E. (1973). Burglary in a suburb. *Criminology*, 2, 206-232.

Cornish, D., & Clarke, R. (1986). *The reasoning criminal: Rational choice perspectives*. New York: Springer-Verlag.

Cromwell, P. (1995). *In their own words: Criminals on crime*. Los Angeles, CA: Roxbury.

Cromwell, P., Olson, J., & Avary, D. (1991). *Breaking and entering: An ethnographic analysis of burglary*. Newbury Park, CA: Sage.

Davidson, R. (1984). Burglary in the community: Patterns of localization in offender-victim relations. In R. Clarke & T. Hope (Eds.), *Coping with burglary*. Boston, MA: Kluwer-Nijhoff.

Decker, J. (1972). Curbside deterrence. *Criminology*, 10(1), 127-142.

Dietrick, B. (1977). The environment and burglary victimization in a metropolitan suburb. Paper presented at the annual meeting of the American Society of Criminology, Atlanta, GA.

Girard, P. (1960). Burglary trends and protection. *Journal of Criminal Law, Criminology and Police Sciences*, 50(5), 517-527.

Goodman, L, Miller, T., & Deforrest, P. (1966). A study of the deterrent value of crime prevention measures as perceived by criminal offenders. Washington, DC: Bureau of Social Sciences Research.

Hope, T. (1984). Building design and burglary. In R. Clarke & T. Hope (Eds.), *Coping with burglary*. Boston, MA: Kluwer-Nijhoff.

Jacobs, J. (1961). *The death and life of great American cities*. New York: Random House.

Kennedy, L., & Baron, S. (1993). Routine activities and a subculture of violence: A study of violence on the street. *Journal of Research in Crime and Delinquency*, 30(1), 88-112.

Kennedy, L., & Forde, D. (1990a). Risky lifestyles and dangerous results: Routine activities and exposure to crime. *Sociology and Social Research: An International Journal* 74(4), 208-211.

Kennedy, L., & Forde, D. (1990b). Routine activities and crime: An analysis of victimization in Canada. *Criminology*, 28(1), 137-152.

Letkemann, P. (1973). *Crime as work*. Englewood Cliffs, NJ: Prentice-Hall.

Leudtke, G. (1970). *Crime and the physical city: Neighborhood design techniques and crime reduction*. Springfield, VA: National Technical Information Service.

Maguire, M. (1982). *Burglary as opportunity*. Home Office Research Bulletin, No. 10. London, England: Home Office Research and Planning Unit.

Maguire, M., & Bennett, T. (1982). *Burglary in a dwelling: The offense, the offender, and the victim*. London, England: Heinemann.

Massey, J., Krohn, M., & Bonati, L. (1989). Property crime and the routine activities of individuals. *Journal of Research in Crime and Delinquency*, 26(4), 378-400.

Maxfield, M. (1987a). Household composition, routine activity, and victimization: A comparative analysis. *Journal of Quantitative Criminology*, 3(4), 301-320.

Maxfield, M. G. (1987b). Lifestyle and routine activity theories of crime: Empirical studies of victimization, delinquency, and offender decision-making. *Journal of Quantitative Criminology*, 3(4), 275-282.

Mayhew, P., Clarke, R., Burrows, J., Hough, J., & Winchester, S. (1979). *Crime in a public view*. Home Office Research Study. London, England: Her Majesty's Stationery Office.

Miethe, T., Stafford, M., & Long, J. (1987). Social differentiation in criminal victimization: A test of routine activities/lifestyle theories. *American Sociological Review*, 52, 184-194.

Molmby, T. (1976). Patterns of crime in a university housing project. *American Behavioral Scientist*, 11, 376-386.

Nee, C., & Taylor, M. (1988). Residential burglary in the Republic of Ireland: A situational perspective. *Howard Journal*, 27(2), 105-116.

Newlands, M. (1983). Residential burglary patterns in a Vancouver neighborhood. Unpublished honor's thesis, Department of Criminology. Burnaby, British Columbia: Simon Fraser University.

Newman, O. (1972). *Defensible space: People and design in the violent city*. New York: Macmillan.

Newman, O., & Franck, K. (1980). *Factors influencing crime and instability in urban housing developments*. Washington, DC: Government Printing Office.

Phelan, G. (1977). Testing academic notions of architectural design for burglary prevention: How burglars perceive cues of vulnerability in suburban housing complexes. Paper presented at the annual meeting of the American Society of Criminology, Atlanta, GA.

Poyner, B. (1983). *Design against crime: Beyond defensible space*. London: Butterworths.

Rengert, G. (1972). *Spatial aspects of criminal behavior: A suggested approach*. Paper presented at the annual meeting of the East Lakes Division, Association of American Geographers, Geography Division, University of Temple.

Rengert, G. (1981). *Burglary in Philadelphia: A critique of an opportunity structure model*. In P. Brantingham & P. Brantingham (Eds.), *Environmental criminology*. Beverly Hills, CA: Sage.

Rengert, G., & J. Wasilchick (1985). *Suburban burglary: A time and a place for everything*. Glencoe, IL: Thomas Books.

Reppetto, T. (1974). *Residential crime*. Cambridge, MA: Ballinger.

Roncek, D., & Maier, P. (1991). *Bars, blocks, and crimes revisited: Linking the theory of routine activities to the empiricism of "hot spots."* *Criminology*, 29(4), 725-753.

Sampson, R., & Wooldredge, J. (1987). *Linking the micro- and macro- level dimensions of lifestyle-routine activity and opportunity models of predatory victimization*. *Journal of Quantitative Criminology*, 3(4), 371-393.

Scarr, H. (1973). *Patterns of burglary*. U.S. Department of Justice, Law Enforcement Assistance Administration. Washington, DC: Government Printing Office.

Sherman, L., Gartin, P., & Buerger, M. (1989). *Hot spots of predatory crime: Routine activities and the criminology of place*. *Criminology*, 27(1), 27-55.

Stack, Steven (1995). The effects of temporary residences on burglary: A test of criminal opportunity theory. *American Journal of Criminal Justice*, 19(2), 197-214.

Tunnell, K. (1992). *Choosing Crime: The Criminal Calculus of Property Offenders*. Chicago, IL: Nelson-Hall.

Waller, I. (1976). Victim research, public policy, and criminal justice. *Victimology*, 1, 240-252.

Waller, I. & Okihiro, N. (1978). Burglary and the public: A victimological approach to criminal justice. Paper presented at the annual meeting of the American Society of Criminology, Chicago.

Walsh, D. (1980). *Break-Ins: Burglary from private houses*. London: Constable.

Walsh, D. (1986). Victim selection procedures among economic criminals: The rational choice perspectives. In D. Cornish & R. Clarke (Eds.), *The reasoning criminal: Rational choice perspectives*. New York: Springer-Verlag.

Winchester, S., & Jackson, H. (1982). *Residential burglary: The limits of prevention* [Home Office Research Study No. 74]. London: Her Majesty's Stationery Office.

Wright, R., & Decker, S. (1994). *Burglars on the job: Streetlife and residential break-ins*. Boston, MA: Northeastern University Press.

Wright, R. & Logie, R. (1988). How young house burglars choose targets. *Howard Journal* 27(2), 92-103.