

THE EFFECT OF A CONTROLLED PERIMETER SECURITY SYSTEM ON CRIME

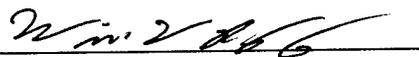
by

Martin Lane Rothrock

Bachelor of Science
United States Air Force Academy, 1990

Submitted in Partial Fulfillment of the
Requirements for the degree of Master of Criminal Justice in the
College of Criminal Justice
University of South Carolina

2000



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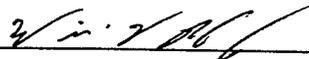
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This work is dedicated to my parents Donald and Margaret Rothrock, who gave me the desire and the tools to pursue an education. It is also dedicated to my wife, Beth Rothrock. I cherish her for her love and commitment to those around her, and I aspire to meet her daily example of personal excellence. Finally, I dedicate this work to my daughter, Grace, who brings me joy every day.

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Abstract

The proliferation of gated residential communities in the United States has generated social criticism, but research to assess the expected crime prevention effect of the perimeter security systems featured in these communities has been lacking. This paper assessed the effect of a perimeter security system on residential crime at a major military installation through a static group comparison with another installation that permitted open access to civilian traffic. Two years of crime incident reports were analyzed to determine the frequency of crime occurring on the bases that was perpetrated by outsiders. It was hypothesized, based upon situational crime prevention theory, that crime would be lower for the controlled access installation. It was found that crime rates were insufficient to test the hypothesis. Descriptive analysis of the incident reports suggested that simple assaults and DUI offenses were related to the operation of controlled access gates, but it was not clear that the presence of manned security gates prevented these offenses.

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Chapter One: Introduction

National indexes indicate that crime is less of a threat to Americans today than it has been for many years. The FBI's Uniform Crime Report (UCR) for 1999 documented 7% fewer reported index crime offenses than had been reported in 1998. The 1999 UCR crime index total was the lowest recorded since 1978 and represented the eighth year that the index has declined (FBI, 2000). Reported violent crime rates in the USA have been steadily falling since 1990 and there has been a 25-year decline in burglary rates. According to National Crime Victimization Survey (NCVS) data, from 1998 to 1999 the overall violent crime rate declined 10% and the property crime rate fell 9%. Victimization rates reported for 1999 were the lowest recorded since 1973, the first year of the NCVS (U.S. Department of Justice, 2000).

In spite of these reported declines, Americans have expressed a growing fear of crime and have shown an increasing interest in security. A 1995 survey indicated that 90% of Americans believed that crime was "getting worse". 55% of respondents feared that they would be personally victimized and expressed the belief that the police could not adequately protect them from crime. Between 1993-1998, "crime and violence" was indicated by respondents to an annual Gallup poll as the most important problem facing the United States (Sourcebook, 2000). In a year Gallup 2000 poll, 27% of respondents identified either guns, drugs, or crime as the most serious problem facing their neighborhood (Saad, 2000).

The private security industry experienced explosive growth over roughly the same 25-year period that reported crime rates have fallen. In 1985, private individuals and corporations in America were estimated to have spent \$35.5 Billion private security (Cunningham, Strauchs, and VanMeter, 1990). The sum of expenditures increased to \$52 Billion in 1990 and was projected to exceed \$91 Billion in 2000 (Cunningham et al, 1990). Three times more persons are estimated to be employed in the American security industry than are employed as law enforcement officers, and this gap is expected widen (Cunningham et al, 1990).

Part of the expansion of the private security industry can be attributed to the popularity of gated residential communities (Blakely and Snyder, 1997). In Fortress America (1997), Edward Blakely and Mary Snyder described the proliferation of gated communities in America as a social phenomenon undergoing exponential growth. They estimated that between 1974 and 1997, 20,000 residential communities, representing over 3 million housing units, were built with gated security system, or retrofitted to make use of them (Blakely and Snyder, 1997). A 1993 survey by Arthur Andersen Consulting found that consumer preference for gated communities grew 17% throughout 1992 (Dillon, 1994). Blakely and Snyder found that consumer demand for construction of gated residential communities was three times greater than for non-gated communities. They stated that eight of ten residential construction projects in urban areas included security gates as of 1997 and 54% of Americans preferred for their next home to be within a gated enclave.

Blakely and Snyder found that the most commonly stated reason for choosing to live in a gated community was for protection against crime. In a survey of residents of

gated communities in California, Texas, and Florida, Blakely and Snyder (1997) found that 63% of respondents regarded security as a “very important” reason for living in a gated area, 29% of respondents regarded security as “somewhat important” and the remaining 9% did not consider it a factor.

The recent popularity of gated residential communities has generated a wave of social criticism. Fotis and Miringoff (1993) identified the trend toward these communities as a sign of America's increasing class and racial segregation. Reich (1998) grouped the trend, along with what he identified as America's increasing intolerance towards immigration, as symptoms of universal retreat from cooperation and concern that would adversely affect American prosperity. This largely echoed the sentiment with which Blakely and Snyder concluded Fortress America:

All the walls of prejudice, ignorance, and economic and social inequality must come down before we can rendezvous with our democratic ideals. The walls of the mind must open to accept and cherish a more diverse nation. Then the walls that separate our communities, block social contact, and weaken the social contract will also come down. (1997:177)

Davis (1990) presented numerous opinions from architects criticizing the trend toward high security urban enclaves on aesthetic grounds. Owen (1997) wrote that laws under which most security gates operate in the gated communities represented the threat of unreasonable search and seizure in violation of the fourth amendment of the . Dillon (1994) viewed gated communities as part of a broader privatization movement based

upon skepticism of the government's ability to provide basic services and set community laws. Blakely and Snyder (1997) also described gated communities as symptomatic of a lack of confidence in the government. They called some of the gated communities in their study "secession communities" with "private microgovernments" (p. 25).

The controversy surrounding the recent proliferation of gated communities in America has hinged on the issue of crime. Proponents of this lifestyle argue that it is appropriate for residents to protect their neighborhoods with physical security measures that create private space from what had once been public domain. Opponents to this view argue that the gated community trend is an irreversible step in the atomization of society based upon class and race. The key issue to resolve this dilemma is summed up in the fundamental question posed by Fortis and Miringhoff (1993) and still remains unanswered. Are gated communities a reasonable response to crime? No research effort has ever been undertaken to adequately address this question.

Security Planning and Definitions

Blakely and Snyder (1997) characterized gated communities according to the categories of "lifestyle communities", "prestige communities", and "security zone communities". This typology may have been useful in organizing social criticism; however, it was inadequate to describe gated communities according to security or crime prevention characteristics. In Situational Crime Prevention: Successful Case Studies Ronald V.G. Clarke (1992) proposed the following typology to categorizing specific security measures as one of twelve techniques of situational crime prevention (pp:

1. Target Hardening: The use of physical barriers to prevent crime.

2. Access Control: Restricting access to authorized personnel.
3. Deflecting Offenders: Channeling criminal behavior into acceptable activities.
4. Controlling Facilitators: Removal of commodities, such as guns, which may contribute to crime.
5. Entry/Exit Screening: Inspecting credentials, searching vehicles and inspecting hand carried items at access control points.
6. Formal Surveillance: Prominent use of uniformed personnel as a deterrent to crime.
7. Surveillance By Employees: Reliance upon employees as guardians against personnel crime or property theft.
8. Natural Surveillance: Reliance upon people performing everyday activities to act as guardians.
9. Target Removal: Cash reduction and other techniques to limit commonly stolen items from an area.
10. Identifying Property.
11. Removing Inducements: Limitation or removal of environmental cues that promote crime.
12. Rule Setting. Improvement of social control by regulating behavior and enhancement of the ability to spot deviance by enforcement of rules.

Clarke's work represents the most complete effort to match security measures in use with theoretical explanation. Clarke's terms are not precise enough however, to adequately describe the particular activities of gated community security. The security

activities at gated residential communities utilize a blend of the security measures Clarke listed to achieve a mixture of the goals he assigned to his various techniques. The security system for a gated residential could be described, using Clarke's typology, as target hardening, access control, entry/exit screening, formal surveillance, and rule-setting. The security measures involved in gated community security have alternatively been described as a technique of the target hardening approach to crime prevention (Weisburd, 1997; Murray, Motoyama, and Rouse, 1981), as opportunity blocking schemes (Sherman, Gottfredson, Mackenzie, Eck, Reuter, and Bushway, 1998), and as a situational crime prevention techniques (Clarke, 1992).

The most inclusive term to describe the security systems of interest in this study is *controlled perimeter residential security system*. Ricks, Tillet, and Van Meter (1988) described a perimeter security as a "physical and psychological barrier to deter unauthorized movement into and out of an area" (Pg. 63). This term describes how these systems:

- Physical barrier target hardening to facilitate access control,
- Seek to allow authorized persons into an area and deny entry to unauthorized persons
- Function by deterring, rather than preventing unauthorized entry
- Use physical security and boundary marking techniques to create a psychological deterrent to unauthorized entry.

This study sought to assess the crime prevention impact of only the first two of these functions for a perimeter security system. I contend that security systems must be

reduced to measurable variables to assess impact. However, as Patankar and Hoelscher (2000) argue, security measures are ideally designed as system of interconnecting components. Even the simple act of locking one's door cannot prevent crime if it is easy for a thief to openly pick the lock without fear of being detected. A lock must be supported by some form of natural or formal surveillance to be effective. The systems approach is even more applicable to perimeter security initiatives. Ricks et al (1988) described perimeter protection as the first line of defense against unauthorized intrusion, and he emphasized that an effective perimeter security system must be supported with guard forces and target hardening features inside the protected area to be effective.

Effective security planning may be conducted "outside-in" by starting at perimeter of an area and working towards the resources to be protected or "inside-out" by starting at the resources and working towards the perimeter (Cherry, 1986). Whichever

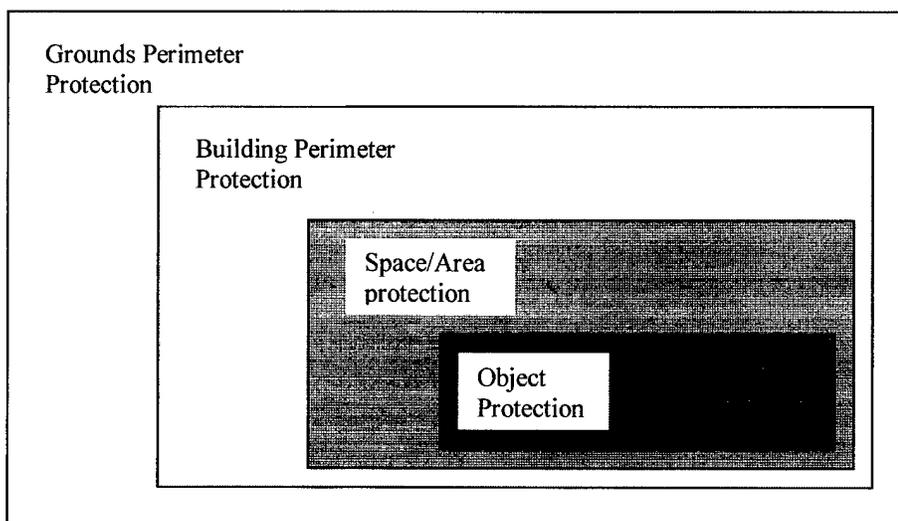


Figure 1. Four zones of protection. From Cherry, D.T. (1986). Total Facility Control. Boston: Butterworth-Heinemann, p.100

strategy is selected, layered security should be planned involving four zones of security as shown in figure 1. Cherry described the zones as 1) the grounds and perimeter zone, 2)

the building perimeter protection zone, 3) the space/area zone, referring to the interior of a building, and 4) the object protection zone, where the contents of a building are protected.

The security planning process described is ideal and is usually only properly executed when the security interest to be protected is extremely valuable (Schultz, 1978). In such cases, private or public security agencies officially designate the four security zones as the 1) security perimeter or boundary, 2) the controlled area, 3) the limited area, and 4) the exclusion area. These security zones relate together in the protection of an asset as illustrated in Figure 2. As shown in Figure 2, the perimeter boundary of an area may be designated, but it is not necessarily protected. An area where access is restricted

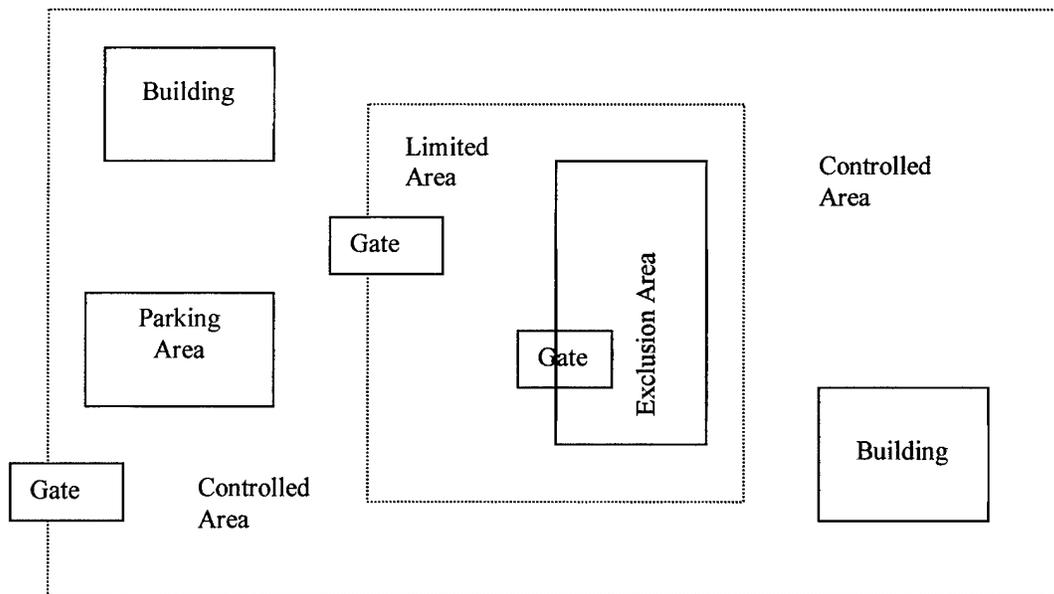


Figure 2. Physical Security Compartmentalization.
From: Shultz, D.O. (1978). Principles of Physical Security.
Houston, TX: Gulf Publishing Co., p. 41.

to authorized persons only, but that allows unrestricted movement within its boundaries, is designated as a controlled area (Schultz, 1978). This is the appropriate term to refer to a residential gated community that utilizes security measures that restrict access to the residential area at the perimeter of the residential area.

Although a gated community security activity may appropriately be called a controlled area because they provide some form of controlled access, this security measure alone does not constitute a planned, layered security system. Blakely and Snyder (1997) found that a significant majority of gated residential communities do not employ a second layer of security such as alarm systems, or roving security patrols. Furthermore, they reported evidence from personal interviews that residents within gated communities pay less attention to personal and home security matters such as locking doors and leaving valuables within open view in autos.

Chapter Two: Review of the Literature

The use of access control security measures dates back at least to medieval times when major cities were walled and access was restricted at the city gates for the purpose of deflecting crime (Murray et al, 1999; Clarke, 1992). The use of access control and other target hardening measures have been so long in practice that they have come to be regarded as “folk remedies” against crime (Akers, 2000, pg. 37), and “nothing more than common sense” (Clarke, 1992 p.9). Sherman et al (1998) stated that opportunity blocking schemes, including access control techniques are the most commonly used crime prevention methods today.

In spite of the widespread acceptance of this approach to crime prevention throughout history, the marriage of physical security techniques to an articulated operative philosophy is a relatively recent development in the study of criminal justice (Akers, 2000). Prior to the 1970’s, academic work directed at crime prevention was almost exclusively focused upon offenders and potential offenders (Wiesburd, 1997). Criminal justice researchers sought to identify ways to deter people from becoming involved in criminal activities and to rehabilitate or incapacitate criminals so they would not commit further crimes (Weisburd, 1997). Several authors in the 1970s began to question the efficacy of the offender-based approach. Robert Martinson (1974) found that rehabilitation programs had failed on a large scale. Although C. Ray Jeffrey’s biosocial theory of crime proposed in Crime Prevention Through Environmental Design (1971) has never gained significant acceptance, his criticisms of the crime prevention effects of

rehabilitation, treatment, and incapacitation strategies were more well received (Clarke, 1992).

Architect Oscar Newman expressed an alternative to offender-centered theories in Defensible Space (1972). Newman found that the differences in crime rates between two public housing projects could largely be explained by variations in the architectural design features of the two estates. Newman's defensible space thesis, that building design emphasizing "real and symbolic barriers, strongly defined areas of influence, and improved opportunities for surveillance" could reduce crime (pp. 3-4) gained great attention by criminologists (Sherman et al, 1997; Murray et al, 1981). Jeffrey's idea that perceptions of the environment determined much of criminal behavior provided some theoretical grounding for the defensible space concept (Murray et al, 1981). Interest in Newman's work has led to greater acceptance of theories that explain crime prevention as a function, not just of the characteristics of individual offenders, but also of the context of time and place (Weisburd, 1997).

Cohen and Felson's routine activities theory provided further impetus for the context-based line of reasoning. Cohen and Felson (1979) hypothesized that crime occurs only in circumstances where a motivated offender comes in contact with a suitable crime target in the absence of a capable guardian. To support this view, they compared social and demographic data indicating post World War II changes in commonly recurring and prevailing pursuits of life, which they termed "routine activities". They found, in congruence with their view that crime must "feed off" of legal activities, that post-war increases in homicide, rape, robbery, and personal contact larceny could largely be explained by changes in routine activities. In particular, Cohen and Felson wrote that

much of the crime increase during this period was positively related to increases in employment outside the home which had the effect of producing more targets for personal crime and reducing protection against burglary during working hours. This thesis was further reinforced by the finding that increases in the availability of portable luxury items and cars both led to increases in various types of crime.

The most extensively developed and widely researched theory to emerge among context based theories of crime prevention is the “situational crime prevention” theories expounded by Ronald V.G. Clarke and his associates. In 1980 Clarke argued that “dispositional” (offender-based) theories of crime dominated criminology and that this bias led to an unjustifiable emphasis on “social” measures of crime prevention. Clarke stated that the alternative to social measures of crime control were “situational” measures predicated upon the idea that criminals chose, within the limits of a bounded rationality, to commit offenses (1980). Furthermore, Clarke argued that people could be influenced in their decision to commit a crime by altering the circumstances of the potential offense through a situational approach to crime prevention (1980). Clarke has described this theory as the idea of simply reducing opportunity for crime by making it more difficult or risky (1992).

Clarke stated that one of the purposes of situational crime prevention was to provide a theoretical basis for “commonsense” approaches to dealing with crime. In works subsequent to his 1980 statement of situational crime prevention theory, Clarke and Mayhew identified a list of eight techniques (1980) to use to reduce criminal opportunities. In Situational Crime Prevention: Successful Case Studies, Clarke expanded the list to twelve techniques (1992). The techniques illustrate that situational crime

prevention is primarily concerned with increasing the difficulty involved in performing crime and/or increasing the chances of getting caught (Clarke, 1992).

Situational crime prevention is closely related to rational choice theory, a contemporary expression of eighteenth century utilitarianism. Rational choice theory is based upon the expected utility principle in economic theory (Akers, 2000). This principle asserts that “people will make rational decisions based on the extent to which they expect the choice to maximize their profits or benefits and minimize the costs or losses” (Akers, 2000, pg. 23). Situational crime prevention literature has, from the very beginning, rejected the concept of strict rationality in favor a softer view of human behavior. Clarke always applied the terms “bounded rationality” and “limited rationality” to describe the model of human behavior in this concept. Situational crime prevention advocates have expressed the view that human rationality is limited by one’s perception of the world, which may be quite inaccurate at times. Nevertheless, the situational crime prevention perspective retains the core concept that a reward and benefit calculus precedes, however imperfectly, any human behavior (Newman, 1992).

The major criticism of situational crime prevention theory has concerned whether or not displacement of crime occurs as result of using situational techniques. It has been stated often that situational crime prevention measures cannot work to reduce crime in a meaningful way because the techniques result in displacement of crime to another time or place (Hesseling, 1994). Gabor described the phenomenon of displacement as “a change in offender behavior....designed to circumvent either specific preventive measures or more general conditions unfavorable to the offender’s usual mode of operating” (Gabor,

1990: 66). Repetto (1976) identified different forms of the phenomena to include displacement to other times, places, methods, targets or offenses.

Research regarding displacement has been mixed. Generally, the effects of displacement, when found, have been limited and have not counterbalanced the overall reduction in crime achieved through the crime intervention technique (Weisburd, 1997, Akers, 2000, Hesseling, 1994; Clarke, 1992). Weisburd suggested that these limited displacement effects could be explained by Cohen and Felson's routine activities theory. He argued that opportunity blocking at the context of convergence is not expected to result in crime in another time or place unless the same convergence without suitable protection occurs elsewhere (Wiesburd, 1997).

Numerous studies have demonstrated that situational crime prevention measures can reduce crime. Barclay, Buchley, Brantingham, Brantingham, and Whinn-Yates (1996) found that the monthly auto theft rate at a commuter parking lot in Vancouver declined by 53% in the year following the deployment of a private security bicycle patrol. Bjor, Knutson and Kuhlhorn (1992) evaluated crime prevention efforts at a Swedish holiday festival that had been the scene of disorder for years prior to police intervention. They found that prohibiting public drinking and refusing access to high risk drinkers resulted in an 8% reduction in arrests for drunkenness and a 64% decline in disorderly conduct arrests comparing the festival pre and post intervention without control. Through time series analysis involving 134 hijacking incidents over eight years, Landes (1978) found that the combined effects of deployment of sky marshals, use of screening procedures, and improved diplomatic efforts to extradite hijackers resulted in a decrease in hijacking in the United States of 82%. Laycock and Austin (1992) examined the effect

of posting an attendant at a parking facility in London resulted in a 52% to 60% reduction in auto theft when compared to a year pre-intervention period. Poyner (1991) found that installation of close circuit television camera at a Birmingham, England parking garage led to a 71% reduction in car thefts after the first year and a 94% reduction in car theft after the second year in comparison to a garage with no security enhancement. As cited in Sherman et al (1998), Tilly found significant reduction in auto crimes (auto theft, theft from autos, and damage) after installation of closed circuit television (CCTV) in five out of six British parking garages during a nationwide test of CCTV installation in 1991-1992. He found no significant results for CCTV installation at Coventry. He found that CCTV installation resulted in an 18- 75% reduction in auto crimes at the other sites. Poyner and Webb (1997) examined the effect of improving the design of two English open-air markets. They found that improvement of lighting and widening of shopping aisles resulted in a 40% reduction in shopping bag thefts the first year after intervention and a 70% reduction the following year. Allatt (1984) examined burglary rates and completed interviews for one year before and two years following a program of police-directed physical security upgrades at a Northumbria, England public housing estate with a history of high burglary rates. Allatt found that burglary rates at the 792 unit housing estate remained nearly steady after the upgrades. These results compared favorably with those for two adjacent housing estates of similar size and composition which had not received the physical security upgrades. Burglary rose significantly in the control estates over the same period. Allatt found evidence of displacement in the control neighborhoods, where burglary rose.

Some situational crime prevention research has attempted to assess the effect of the security approach Clarke termed access control. Security research is heavily context-based and thus limited in generalizability beyond the specific type of security system and the crime problem studied (Manunta, 2000). It is questionable however, how much access control results may be generalized and applied to the more complex system of a gated community. The two scientific efforts to study crime prevention in context most similar to those of a controlled entry gated community did extended beyond the study of property crime prevention. For the first of these efforts, Atlas and Leblanc (1994) collected UCR data to assess the impact of a decision by residents to barricade 67 streets against vehicle traffic. The authors collected data regarding incidences of aggravated assault, robbery, burglary, larceny, and auto theft in Miami Shores, FL, during 1986/1987 and again 1991/1992 after the barricades were installed. They found that property crimes including burglary, auto theft, and larceny decreased significantly in the post-barricade period when compared to overall crime trends in Miami and Metro Dade county for the same periods. They found that robbery and aggravated assault did not decrease within Miami Shores but remained steady while the rate of these personal crimes rose significantly during the period of study. They also found, in keeping with theories of Crime Prevention Through Environmental Design/ Defensible Space theories, that the street closures enhanced the reputation of high crime areas and resulted in a greater sense of territoriality among residents.

In the second study, White (1990) examined the effect of “permeability” on neighborhood burglary rates. He defined the concept of permeability to mean the degree of vehicle access into the neighborhood by outsiders as measured by incoming traffic

lanes. White found that permeability was significantly related ($B= 0.31$) to burglary in a study of 87 Norfolk, VA neighborhoods. White concluded that accessibility by automobile traffic created opportunities for would-be burglars and contributed to the appearance that a neighborhood was vulnerable to burglary.

Blakely and Snyder (1997) stated repeatedly throughout Fortress America that gated community security systems were ineffective against crime. However, their assertions have been sharply criticized on methodological grounds (Kanter, 1999; Pompe, 1998; Purcell, 1998). They based their findings exclusively on personal interviews with residents regarding their perception of the level of crime in their neighborhoods. They obtained no official crime statistics relating to the communities they studied and did not attempt to provide a meaningful basis of comparison for the data concerning perceptions of crime that they did collect. Finally, they used convenience sampling both to select communities to study and to select residents to interview within communities.

Research Questions

Based on the preceding literature, several research questions emerge. This study is directed at the following research questions:

Research Question One: To what extent does the perimeter security system explain differences in crime rates for a residential area?

Research Question Two: Is the perimeter access control security system a reasonable response to crime?

To address both questions, I propose the following hypothesis:

As expected by situational crime prevention theory (Clarke, 1980), I predict that a lower incidence of crime (in comparison to the surrounding civilian community) would be observed at the access controlled military installation, Charleston AFB, than would be observed at Fort Jackson, the open military installation.

Illustrative of the importance of the first question, Giovanni Manunta (2000) expressed the view that security managers consistently fail to justify security initiatives according to impact. He argued that professionalism would not develop within the security industry without better efforts to find meaningful research paradigms. He predicted that, in the absence of better research initiatives, managers would ultimately fail to justify those initiatives that could result in significant savings of life, health and property.

Chapter Three: Research Methods

Secondary analysis of crime report data was conducted to compare crimes occurring at two U.S. military installations in 1998 and 1999. The military installations were chosen as the populations of interest because they were well-defined communities that could be studied and described. Incident reports were available and accessible for the project from both bases. Additionally, the bases were similar in having military populations and using similar law police practices.

The first installation, Charleston AFB controlled access to authorized military and civilian personnel only. The other installation, Fort Jackson is an open access installation. Interviews with key personnel and observations of the security systems at both installations were completed to obtain a thorough description of the entry control and perimeter security features at both military bases. Crime rates were compared between each installation, for eight UCR index offenses (Murder, Forcible Rape, Robbery, Aggravated Assault, Burglary, Larceny, Auto Theft), in addition to DUI offenses and simple assaults. These offenses were selected because records concerning them were available for all four jurisdictions in the study. Additionally, all offenses studied might have been affected by the access control policy of Charleston AFB. There were some offenses, such as fraud, that were not considered because location was not a factor in the crime. Some offenses were not studied because of incompatibility between the way these offenses were documented. Charleston AFB recorded a few incidents of vandalism during the period, but it also classified many of them as "damage to government/ private

property” offenses. This also included minor vehicle accidents and numerous incidents where something had turned up damaged through vandalism or carelessness. Fort Jackson recorded vandalism but did not record vandalism incidents as damage to government or private property. Fort Jackson recorded all offenses where military personnel had failed random or commander directed urinalysis screenings, whereas Charleston AFB included only drug related incidents where illegal drugs had been found, or police had caught drugged individuals.

To account for any differences in crime for the areas where the installations were situated, crime rates were also measured for index crimes, simple assaults and DUIs for the counties surrounding each installation. The effectiveness of the controlled access procedures at Charleston AFB were assessed by comparing crime on the base with crime in Charleston County as a matched pair (Group 2) against the rates of (Group 1), Fort Jackson and its surrounding community of Richland County. Chi Squared was selected because it was a fundamental way to show evidence of association between descriptive variables of the two groups at a macro level. When this relationship was indicated, then further, subjective analysis was completed on the individual incident records. After statistical significance was measured through a Chi Squared test, incident reports were examined to determine the military status of suspects and any other features of the incident to indicate if the incident was affected by the entry control policies of the installation where the crime occurred.

Research Setting

Charleston AFB is a military installation located North of Charleston, SC in the Ashley River area. The base is a 4278 acre reserve containing 1198 buildings and two

runways shared with the Charleston Airport. Approximately 7595 active duty military personnel are assigned to the base, along with 2,300 reservists and 1420 civilian Air Force employees (Charleston Air Force Base Public Affairs,2000). Approximately 5000 military dependent family members also rely upon the base for support, as does a population of retired military personnel in the Charleston area that exceeds 50,000 persons. The mission of Charleston AFB is to provide worldwide airlift services. Forty-two Boeing C-17 Globemaster and fourteen Lockheed C-141 Stratolifter are assigned to the base. Many of these aircraft depart from the base daily to fly military cargo and personnel to locations throughout the United States and the world.

Fort Jackson, located Southeast of Columbia, SC is the home of the U.S. Army Training Center. Fort Jackson is the U.S. Army's largest basic training installation, with an average of 40,000 recruits graduating each year. It is a 57,000 acre reserve with numerous forest covered training ranges.

Charleston AFB has 1465 military family housing units and 7 dormitories that can house up to 535 single Airmen. Police and security services for the installation are provided by the active duty military personnel of the 437th Security Forces Squadron. The unit is staffed by 106 enlisted personnel and four officers.

Fort Jackson has 1294 family housing units and 36 dormitories than normally house over 8,000 recruits and other students at Army training schools. Charleston AFB is entirely surrounded by the city of North Charleston, SC. Areas east of the installation are heavily populated with residential and commercial land use areas abutting U.S. Highway 26. The area to the West of the base, near the Ashley River is mostly rural. The base is located next to the Charleston International Airport, with which it shares a runway.

Access control and police services between the two installations are summarized at table one.

Table 1

Police Comparison

Measure	Charleston AFB	Fort Jackson
Authorized Entry	Vehicle Sticker, ID Card	N/A
Visitor Entry	Phone Call Procedure with a visitor sign-in	N/A
Vehicle Checks	Hourly	Randomly
Vehicle Searches	Randomly	Randomly
Police Patrols in operation at most times	3	8
Directed Police "hot spot" Patrols	Frequently	Frequently
Building Security Checks	Nightly	Nightly
Police Exercises	Frequently	Frequently

Internal Traffic Checkpoints

No

Randomly

From: Hankins, R. (personal communication 30 October, 2000) and Richardson, F.

(personal communication, September 08, 2000)

Both Fort Jackson's law enforcement activity and Charleston AFB's Security Forces take similar approach to policing, except for the access control policies. Fort Jackson averages about eight police patrols on the post at most times, while Charleston AFB has three. However, Fort Jackson military police must patrol a rural area of nearly 57,000 acres, nearly 14 times larger than the area of Charleston AFB. The cantonment areas of both bases, where the concentration of houses and community building is similar in size between the two bases. Both installations have a series of random measures that they perform on a daily basis, as a measure for protection from terrorism. These random measures often include many law traditional police techniques such as random entry control gate checks, traffic checkpoints, and directed police patrols of certain areas.

Access control to Charleston AFB is controlled at the two gates, which provide vehicle entry to the post. Both gates are manned by enlisted Security Forces personnel on a 24 hour basis. Unescorted entry onto the base is limited to military personnel, dependents, military retirees, and Air Force civilian employees. Entry to the base is granted to vehicles displaying a current Department of Defense form 2220 sticker issued from the installation Pass and ID office. Civilian persons with no military affiliation may be granted entry to the base as a guest of a military member. These visitors are granted a written pass at the installation gates if a military member calls the entry control gate in advance of the arrival of the visitor. Civilian contractors performing work on the installation are provided with a written pass through their sponsoring agency

(Richardson, F., personal communication, September 08, 2000). Anyone entering the base is liable to be searched if the entry control guard has a reasonable suspicion that contraband such as weapons or drugs is within the vehicle. The base conducts base entry point checks on a random and frequent basis. These checks can involve either a detailed credential check for all passengers or a complete vehicle search with drug or bomb detector dog.

Fort Jackson is surrounded by the communities of Forest Acres and Columbia to the South and West. The area South of the post is rural and includes parts of Columbia and unincorporated areas. Fort Jackson is an open installation. Vehicle registration with a DD form 2220 is optional for drivers on the post. Fort Jackson's eight gates are not manned. Fort Jackson has gatehouses that can be used to provide entry control. The post does conduct random gate checks on occasion up to, and including, a full vehicle search with a police dog. Otherwise there is no entry restriction to the post (Hankins, R. personal communication, October 30, 2000).

Data Collection

The average annual number of index offenses recorded at both military installations for the years 1998-1999 and their surrounding communities for the years 1994-1997 is shown in Table 1. Fort Jackson provided quarterly listings of offenses recorded by the installation Law Enforcement Activity for the two-year period of interest in the study. Each quarterly report recorded all Part 1 index crimes, some Part 2 index crimes, and several status offenses that were unique to the Uniform Code of Military Justice. Each record also indicated if the incident was considered a "founded offense" by military police and investigators, whether the incident occurred on-post or off-post, and

the military status of the subject detained (arrested) for the incident. Military personnel are subject to the Uniform Code of Military Justice even when they are not on a military installation. It is normal for military police to arrest military personnel, and produce incident reports for personnel who are suspected of committing crimes off-post. Such cases, however, were excluded from this study. Additionally, incidents not considered “founded offenses” (substantiated by preliminary investigation of the military police patrols) were also excluded from the frequencies recorded at Table 1.

Charleston AFB provided a report detailing each incident in the two-year period by descriptive term, location of incident, and military status of the subject detained. Incidents were grouped according to their descriptive term to correspond with index offenses. For example, incidents described alternatively as “shoplifting”, “theft of government property”, and “theft of private property” were recorded as larceny. As had been done with Fort Jackson incidents, all incidents recorded as occurring off-base were deleted from the record.

Chapter Four: Results

As shown in Table 1, the average index offenses for each jurisdiction were

Table 2

Crime Rates and Chi Squared Analysis for Groups

	Group 1				Group 2				Chi Squared
	Ft Jackson		Richland Co.		Chas. AFB		Chas Co.		Set A/ Set B
Population	12917		303106		3728		300394		
Offense	N	RPT	N	RPT	N	RPT	N	RPT	X2
All Part 1 Index Crimes	277	21.48	23325	76.95	166	44.53	25695	85.54	25.5811*
Violent Index Crimes	6	0.54	3751	12.38	0	0.00	3719	12.38	33.2830*
Murder	0	0.00	33	0.11	0	0.00	34	0.11	0.0001
Robbery	0	0.00	1067	3.52	0	0.00	898	2.99	0.0943
Agg. Assault	5	0.46	570	1.88	0	0.00	841	8.64	5.7595*
Rape	1	0.08	218	0.72	0	0.00	191	0.63	0.0884
Property Index Crimes	271	20.94	19574	64.58	166	44.53	21977	73.16	27.5725*
Burglary	4	0.31	4116	13.58	4	0.94	4141	13.78	1.2814
Auto Theft	1	0.08	1828	6.03	0	0.00	2383	7.93	0.5335
Larceny	266	20.55	13630	44.97	162	43.32	15453	51.44	26.0317*
Simple Assault	87	6.74	2434	8.03	29	7.78	2597	12.38	1.6898
Driving Under Influence	30	2.32	853	2.81	15	3.89	1151	3.83	1.3282

Note. RPT = Rate Per Thousand.

* $p < .01$

converted into incident rates for each 1000 persons (Rate Per Thousand or RPT) in the population. Population denominators for Richland and Charleston Counties were

based upon the average of census estimates for the years 1994-1997. Population estimates for the two military jurisdictions were based upon the occupancy of military family and dormitory housing at each installation. The number of all military and civilian personnel who comprise the workforce of each installation or are assigned as dependant family members is considerably higher than these estimates (approximately 20,000 for Fort Jackson and 15,000 for Charleston AFB). Higher still are population estimates that include the military retirees living nearby that are served by installation services. This would increase the population to over 100,000 for each installation. Including these figures in the population totals for the military installations was not consistent with the way the UCR rates are normally calculated and would not have been consistent with the census figures for Richland and Charleston Counties, which are based upon the principle of counting someone based upon the location of their home of primary residence. Fort Jackson's population estimate of 12917 includes 8,000 personnel attending one of the Army training schools on the installation at any given time, excepting a two-week period over the Christmas and New Year's holidays. The bulk of this 8,000 is comprised of young recruits, 40,000 of whom graduate from Army Basic Combat Training at Fort Jackson in the course of a year.

Table 1 presents a comparison of the rates per thousand for the index crimes in the four jurisdictions. Fort Jackson and its surrounding community of Richland County was considered Group 1 and Group two was comprised of Charleston AFB and Charleston County. Chi squared analysis showed that there were statistically significant ($p > .01$) differences between expected results (the null hypothesis assumption that there would be no difference in rates) and the observed rates in overall part 1 index crimes, violent

crimes and property crimes for the two groups. The large Chi square value for property crimes was driven by larceny rates in Group 2. The relationship between larceny rates at Charleston AFB and its surrounding community was in the opposite direction prediction by the hypothesis. Larceny rates at Charleston were *higher* than expected, even when considered the surrounding community to the base. This is illustrated by the facts that Charleston AFB's larceny rate (44.97) was almost as high as Charleston County's, whereas Fort Jackson's larceny rate (20.55) was less than half of Charleston AFB and less than half that of the surrounding community, Richland County. The large Chi square value for violent crimes was based upon aggravated assault, which was less than expected for Group 2.

Violent Crime

Violent crime was less than expected for Group 2 meaning that Charleston AFB had a lower rate of violent crime than expected, even when considering the violent crimes taking place in the county outside the base. Simple assault, not included in the calculation of violent crime indexes, was also lower than expected at Charleston AFB. There were three violent crimes that could not be described as assault during 1998-1999 at Fort Jackson. In each case the suspect in the case was affiliated with the military, and thus would not be affected by a perimeter security system. A murder occurred at Fort Jackson in 1999 and the suspect was a military member. There were two reported rapes at Fort Jackson during the period of the study, one in 1998 and one in 1999. The rape suspect in one case was a military member, and a dependent family member in the other.

A significant number of assaults at both military installations could be classified as domestic violence incidents or as fistfights among military personnel or dependents.

There were no aggravated assault incidents at Charleston AFB in 1998-1999 and there were eleven incidents of aggravated assault reported at Fort Jackson for the same period, with nine reported in 1999. None of the Fort Jackson aggravated assault incidents involved any persons without military affiliation. Fifteen persons arrested for simple assault at Fort Jackson during the two-year period were civilians with no military affiliation. All of the persons involved in simple assault incidents at Charleston AFB had a military affiliation.

Property Crime

The unexpectedly high larceny rate at Charleston AFB was due to incidents classified as shoplifting, theft of government property, and theft of private property. There were 58 shoplifting incidents on the base in 1998 and 65 in 1999. All but six of these incidents took place at the Base Exchange, a large retail facility in the center of the base. All of the Base Exchange shoplifting incidents were perpetrated by military personnel, military retirees, military dependents, or civilian employees working in the exchange. This stands to reason because these are the only persons allowed in the exchange, and it is necessary to show a military identification card or wear a uniform to shop at the facility. A suspect was arrested in all of the shoplifting cases, indicating that the perpetrators were all caught on videotape by store detectives of the exchange and referred to the base Security Forces. Of the six shoplifting incidents committed at commercial facilities other than the exchange, only three were perpetrated by civilians without military affiliation who may have entered the base illegally through the two gates.

There were 82 incidents classified as thefts of private property at Charleston AFB in 1998, and 94 such incidents in 1999. Of these 176 incidents, the overwhelming majority were complaints of items being stolen where no suspect was identified at the time of the incident report. In all likelihood, these cases will remain unsolved. Of the seven cases where a suspect had been identified, three of the suspects had no military affiliation. A large number of these unsolved incidents were bicycle thefts. Senior Master Sergeant Frederic Richardson, the Operations Superintendent of the 437th Security Forces Squadron, confirmed that the squadron investigators have analyzed the bicycle theft problem and determined that it is largely the result of bicycle owners failing to secure their property (personal communication, September 08, 2000). The layout and location of Charleston AFB makes it very unlikely that the bicycle thefts are being perpetrated by anyone other than base residents.

Theft of government property at Charleston AFB followed the same pattern as other types of reported theft. Of the 54 incidents reported, only four suspects were identified, and all had a military affiliation and were authorized access through the security perimeter of the base.

Burglary/housebreaking incidents were rare at both military installations with seven incidents occurring at Charleston AFB and eight occurring at Fort Jackson in the course of two years. There were no suspects identified in any of the incidents, except for one incident at Fort Jackson in 1999, when two military personnel and three dependents were charged.

Driving Under the Influence

Incidents of drunken driving were reported with greater frequency at Fort Jackson than at Charleston AFB. Of 30 incidents reported at Charleston AFB in 1998 and 1999, 19 were detected at the installation gates. Of these 19 drunken drivers detected, 13 were civilian drivers with no military affiliation. The majority of the civilian DUIs were detected at the Dorchester gate, the most heavily used entry to the base. A possible explanation for this is that the Dorchester gate is adjacent to a built up civilian area outside the base, whereas the Rivers gate is at a more isolated location. Senior Master Sergeant Richardson (personal communication, September 08, 2000) stated that Drunken drivers commonly became disoriented and approached the Dorchester gate after drinking in the City of North Charleston. Fifty out the 60 DUIs reported at Fort Jackson were civilian drivers with no military affiliation who were stopped while transiting through the post.

Chapter Five: Discussion and Conclusions

Reliability and Validity Issues

Reliability

This study is largely based upon secondary analysis of data from the FBI Uniform Crime Reports, and incident reports provided by the installation police agencies. Reliability for this study is based upon the consistency with which the data making up the demographic and crime rate variables was compiled. The limitations of using official statistics from the Uniform Crime Reports are well documented. Among these limitations are that the UCR only records crimes known to police and that can be incomplete, as police agency reporting is voluntary and some agencies have poor reporting practices (Seidman and Couzens, 1974). Additionally, the policy of reporting only the most serious offense when several have resulted from an incident can lead to underreporting of lesser offenses (Sherman and Glick, 1984). The private agency records used in this study extend across two years and include documentation of about 900 incidents at both military installations. Eliminating military status offenses (AWOL, etc.) and those incidents that occurred outside the military jurisdiction and selecting only those incidents for the crimes of interest reduced the database to about 300 incidents. For each incident it was possible to examine the incident record for several data points and identify potential inconsistencies which were addressed in each case with the compiling agency. It is unfortunate that vandalism and crimes of drug abuse could not be assessed because the access control policy could be related to variations in these offenses. However, statistics for all offenses

occurring on the installations and reported to the UCR were recorded by hierarchical reporting, with the offense being classified according to the most severe crime. Therefore these offenses did not mask, and therefore affect, other offenses reported.

Validity

The research method employed in this study could most accurately be described, according to the research typology of Campbell and Stanley (1966), as a static group comparison. This term refers to a research design in which data is collected after a treatment (in this case the controlled access policy of Charleston AFB) has been in place for some time. Measurements were also taken at a control group (Fort Jackson) that did not receive the treatment. The major limitation of this research design is non-equivalence between the control and the treatment groups. Since data on the variables of interest was not accomplished before the treatment (access control) was applied it cannot be known for certain if any variation between groups was the result of the access control policy, or the result of a pre-existing difference unrelated to access control between the two groups. One advantage of the study design that may help offset this limitation is the level of access to detailed incident records. Both military installations provided two years of incidents reports that provided a significant level of detail concerning incidents. The statistical test in this study is used to show evidence of a relationship that can be verified or refuted examining individual records identified through Chi squared analysis in greater detail. In this way covariance between the access control policies within the two groups can help direct case study research that can provide greater richness in detail.

The degree to which the results in this study may be accepted as valid is largely dependent upon the degree to which the four jurisdictions can be shown to be equivalent,

or at least very similar to each other. The research is valid if the only significant difference between the two groups is that the military jurisdiction in group 1 is an open access installation and the military jurisdiction in group 2 is a controlled access installation. Other possible explanations for differences in crime between the two groups include:

- Crime is significantly higher or lower in the area outside of one of the military bases than it is in the area of the other.
- Police services are significantly different between the two military bases
- Crime is different between the two military installations based upon internal factors

The argument for the first assertion is that even if there is a difference in crime between the two bases it could be explained by the environment that these two installations operate within, and not by perimeter security. An example to illustrate this line of reasoning would be if Fort Jackson was found to have significantly higher rates of crime, and Richland County was also found to have higher rates. If this was so, it could be said that high crime at Fort Jackson was explained by the fact that a large amount of crime was spilling onto the base. This cannot be a source of invalidity in this research effort for several reasons. First of all, the purpose of collecting UCR data for the counties outside the two bases was to control for the level of crime in the environment of the base. The test of statistical significance is applied, not between crime rates at the two bases, but to ratios expressing the crime rate between each base and its surrounding community. Secondly, Charleston County and Richland County were extremely similar in demographic characteristics related to crime. Both the UCR and the NCVS results have

consistently supported the theory that male crime rates are much higher than female crime rates. Eighty percent of NCVS respondents who reported victimization for violent crime said their assailant was male (NCVS, 1993). Similarity in age between the two counties is significant because the inverse relationship between age and criminality is well documented (Flowers, 1989). The NCVS results for 1999 showed also that becoming a victim of crime was inversely related to age for almost all crimes. The reported rate of violent crime among teens 16-19 (91.1 per 1000) was significantly higher than adults 25-34 (43.1) or adults over 65 (3.0) in 1999. Both Charleston County and Richland Counties have roughly equal distributions for age. Flowers (1989) stated that the relationship between income and crime is also significant, and generally inverse. In this area the two counties are more diverse, with Charleston County having more impoverished persons. However, the average personal and family incomes are very similar.

Table 2
Demographic Information

		Richland Co	Charleston Co.
Age	5 to 17	17.1	16.9
	18 to 20	7.0	6.2
	21 to 24	8.0	8.4
	25 to 34	19.7	19.5
	35 to 44	15.6	14.4
	45 to 54	8.9	9.0
	55 to 64	7.2	7.5
	65 to 74	5.9	6.4
	75 and over	3.6	3.7
Gender	Males per 100	94.6	98.7
	Females		

Income	Median Household Income	\$28,848	\$26,875
	Per Capita Personal Income	\$17,137	\$16,015
	Percentage of Families Below the Poverty Level	10.1	13.8
	Persons with Income Below the Poverty Level	35,783	48,508

Note From: U.S. Bureau of the Census, 1990 Census of Population and Housing, Summary Tape File 1C on CD-ROM.

The argument for the second assertion is that the presence of more or fewer police and more aggressive or less aggressive patrol procedures would result in differences in the numbers of crimes detected at the two military installations. As discussed in chapter two. The police services provided at each installation are highly similar, with the exception of perimeter access control policies.

The argument for the final assertion is simply that crime is different at Fort Jackson due to the people who lived on the base between 1998 and 1999. Does the age, military specialty, branch of service, age, and other variables affect the crime on the base? Certainly a combination of these factors may affect crime. However, the purpose of this study is to assess a controlled access system. All demographic variables for military affiliated personnel refer to persons who, at Charleston AFB, already have authorized access to the base or, at Fort Jackson, would have this access to the post even if a gate was installed. Internal factors are not relevant to address the research questions.

Research Questions

Research Question One: To what extent does the perimeter security system explain differences in crime rates for a residential area?

The perimeter security system did not explain any differences in crime rates between the two military installations for any of the index crimes rates measured. In every case where statistically significant differences in crime between the bases were found, incident reports showed that the crime was overwhelmingly perpetrated by persons with military affiliations who would have free access to the controlled area whether or not a perimeter security system to actively control entry was in place. This was true for violent index crime, where the very few incidents of serious violence studied were all perpetrated by persons with authorized access to the Fort Jackson. This was also true for property index crimes, where only a handful of the suspected thieves had no military affiliation. Charleston AFB experienced no incidents of simple assault involving persons without military affiliation. Additionally, Charleston AFB achieved success in preventing DUIs from transiting through the base. However, crime rate analysis did not detect this difference. Analysis of crime rate data for simple assault produced an X^2 of 1.68, this only weakly ($p = .19$) indicated a difference in simple assault data between the two groups. Analysis also indicated only weakly ($p = .24$) that there was a difference in DUI rates. There was significant difference between the two bases when it came to these crimes, but the difference was found not in the number of offense reported, but in the residency of the perpetrator of the offense. Crime reports were only useful to the extent it could be determined if perpetrators of offense belonged within the perimeter or not.

Research Question two: Is the perimeter access control security system a reasonable response to crime?

Both Fort Jackson and Charleston AFB are extremely safe places to live and work when it comes to crime. Overall, Charleston's AFB's index crime rate of 44 crimes per 1000 persons living on the base was about half that of the surrounding community. Fort Jackson's crime rate of 21.5/1000 was less than 1/3 of its surrounding community. There were no violent index crimes reported at Charleston AFB in 1998 and 1999 and there was a small number reported at Fort Jackson. Incident records indicated that the few rapes, aggravated assaults, and murders that occurred at Fort Jackson were between familiars. Several of these were documented as domestic violence incidents. Victims did not become involved in these crimes because of their residence at Fort Jackson, but rather because of their personal relationships. The violent crime index at Charleston AFB was too low to be measured and at Fort Jackson it was approximately 1/12 of the rate of the Southeastern United States (FBI, 1999).

Even though crime cannot be considered a serious problem at either installation, there is still evidence that Charleston AFB experienced less simple assault enjoyed a measure of success protecting the base from drunk drivers. These variations may be related to the entry control policy at Charleston AFB. 15 subjects identified by the Fort Jackson Military Police as being involved in simple assault did not belong on Fort Jackson. For many of the incidents involving these outsiders, the Military Police also detained military personnel. This may indicate that the outsiders were in the company of military personnel when they participated in the assault. Had there been a manned gate at Fort Jackson, these subjects may have been brought to the post anyway, as guests of

military personnel. However, outsiders were not reported in any of the simple assaults at Charleston AFB, and there were thousands of visitors brought on to the base as guests of military members during 1998-1999. It appeared that the controlled access policy at Charleston, which required military personnel to sign in guests and be responsible for their conduct while on the base, may have served as a psychological deterrent to simple assault. Thirteen drunk drivers with no military affiliation were detected and stopped at the Charleston AFB gates between 1998 and 1999. Fifty drunk drivers were detected on the grounds of Fort Jackson, after they had already been driving on the post.

The marginal cost of operating the two gates at Charleston AFB is reasonably low. Eleven enlisted Air Force personnel are assigned to the 437th Security Forces Squadron to man the two gates on a 24 hour/ 7 day-a-week basis. The Air Force estimated that this manpower represented an annual cost \$286,000 (Richardson, 2000). There are some capital investment costs associated with the gates that cannot be reliably estimated. These would include the yearly marginal cost of building the gate facilities and renovating them every few years, and the yearly marginal costs for installation and upgrade of chain link fencing around the base. The gate/fencing system capital costs were absorbed years ago by Charleston AFB. It is beyond the scope of this thesis to perform a complete evaluation Charleston AFB's perimeter security system. To do so, it would be necessary to evaluate the system for all of its many purposes, including protection from terrorism, presenting a military image to the community, etc. It is not necessary to consider these goals, however, to determine affirmatively that Charleston AFB's perimeter security system is more than worth its annual cost of \$286,000. These costs are

easily justified based upon the benefit the system provides in deflecting simple assaults and preventing DUIs on the base.

Practical and Theoretical Implications

This research effort demonstrated the difficulty of linking accepted security procedures to an articulate theoretical paradigm. The findings neither confirmed nor refuted the theory of situational crime prevention as defined by Clarke (1992)

Opportunity-reducing measures (1) directed at highly specific forms of crime (2) that involve the management, design or manipulation of the immediate environment in as systematic and permanent a way as possible (3) so as to increase the effort and risks of crime and reduce the rewards as perceived by a wide range of offenders. (Pg. 4)

It cannot be said if the perimeter security system studied represented a risk to potential offenders and therefore worked as specified in the theory. In the areas where incident reports indicated that the security made a difference, opportunity blocking was clearly at work. The gates Charleston AFB stopped DUIs and prevented them from transiting the base. The fact that no civilian without military affiliation was apprehended for a DUI on the base, while military associated people were, showed that drunk drivers were most likely stopped. Opportunity blocking that resulted in a lower rate of assaults by outsiders at Charleston was of a different nature. The base was successful in keeping unaffiliated civilians away from the base who might be prone to fight, but it unlikely that this occurred

because of any rational calculus about the security of the base. It is far more likely that the potential offender did not even think of going near Charleston AFB either because it was well known that he/she was not allowed to enter the base, or there was simply no reason to visit the base. The possibility cannot be discounted that the greater ability to enforce visitor control procedures at Charleston AFB helped reduce assault, and this would show a rational deterrence. As for DUIs, there was also no evidence of a rational choice being made by offenders. The opportunity blocking was purely physical. In the words of Senior Master Sergeant Richardson, "they become disoriented and just find themselves at the gate". That is a lot better than finding themselves within the confines of the military installation where they may hurt someone, but it hardly represents a rational calculus.

The other crimes studied for this report were not relevant to assessing situational crime prevention because the security system under study did not, and could not, have an impact upon these crimes. The security system under study was oriented to prevent crime from the outside, not from the inside. The other aspects of installation police services and security that may have impacted these crimes was not studied. But these crimes do offer evidence in support of another theory. The fact that most crime occurring on these two installations was the product of those who had good reason otherwise to be at the base supported the contention, as stated by Cohen and Felson (1979) that crime feeds off routine activities. The leadership of Charleston AFB views the gate system primarily as a deterrent to terrorism (Richardson, F., personal communication, 2000). This illustrates the fact that the situational crime prevention view is widely accepted by

security practitioners. “How to” security textbooks that largely ignore theory are filled with references to deterrence. Even when not specifically stated, the concepts of rational choice and situational crime prevention lay behind the security measures advocated. Routine activities theory is used much less often in the design of security systems. Clarke acknowledged the work of Cohen and Felson for promoting the idea that opportunity is the determinant of crime (Clarke, 1992, Pg. 10). But aside from incorporation in the situational crime prevention technique of commodity limitation, routine activities theory is not well integrated with Clarke’s work. The work of Cohen and Felson should be more in the mind of security planners, as a complement to the traditional mindset of deterrence and target hardening.

Policy recommendations

Based upon the results of this research effort, Charleston AFB can justify the costs of its perimeter security system for crime prevention reasons alone. However, these findings are limited in generalizability, even to other military installations. The chief historian of the USAF security Forces stated There is no U.S. Air base that permits open access and there has not been one for nine years (B. Allen, personal communication, July 12, 2000). The Air Force has maintained this policy at every base, regardless of the extent of security needed at the base, the manpower available, or the crime characteristics of the area. The Air Force has the available information and analysis tools at the installation level to provide police and security services in a more tailored fashion. Patankar and Hoelscher (2000) cautioned against the cookie-cutter approach to security. Drawing on accident prevention/safety theory they argued that security systems should be designed

with the law of requisite variety in mind which states “you must meet variety with variety”. In other words if your threat can proceed in a variety of ways, you must have many overlapping and redundant protection systems in place to prevent systems failure. This is especially important if the goal of security is to thwart terrorism, as terrorists have proven to be ingenious and diverse in their approach to dealing with security. Using U.S. airport pre board screening as an example Patankar and Hoelscher strongly criticized the “single layer” security approach, in which a heavy investment of resources is placed in a single security process. They stated a security system composed of many low-reliability components was better than a system with a high reliability component that was subject to a single event failure.

To craft proper state, local, and municipal policy addressing gated community security it will be necessary to accurately assess the nature of crime within areas and the effectiveness of perimeter security system to deal with the crime threat. The findings of this study have shown that crime rate analysis alone is inadequate to accomplish this task. However, there is promise that such analysis could take place if one had access to incident data, as was the case with this study, and could therefore determine the origin of offenders, the routine activities associated with crime in an area and other relevant details. When it becomes more available to researchers, The National Incident Based Reporting System, should be a far more adequate tool than the Uniform Crime Reports to provide the necessary data for making the policy decisions in this area.

References

- Akers, R.L. (2000). Criminological Theories: Introduction, Evaluation, and Application (3rd ed.). Los Angeles: Roxbury.
- Allatt, P. (1984). Residential Security: Containment and displacement of burglary. The Howard Journal of Criminal Justice, 23 (2), 99-117.
- Atlas, R. and LeBlanc, W.G. (1994). The impact on crime of street closures and barricades: A Florida case study. Security Journal, 5, 140-145.
- Blakely, E.J. & Snyder, M.G. (1997). Fortress America: Gated and Walled Communities in the U.S. Washington, D.C: Brookings Institute.
- Barclay, P., Buchley, J., Brantingham, P.J., Brantingham, P. & Whinn-Yates, T. (1996). Preventing auto theft in suburban Vancouver commuter lots: Effects of bike patrol. In R.V. Clarke (ed.), Preventing Mass Transit Crime. Crime Prevention Studies (Vol. 6). Monsey, NY: Criminal Justice Press.
- Bjor, J., Knutsson, J., & Kuhlhorn, E. (1992).. The celebration of a midsummer eve in Sweden: A study in the art of preventing collective disorder. Security Journal, 3 (1): 169-174.
- Charleston Air Force Base Public Affairs Office (2000). Economic Impact Analysis. Charleston Air Force Base, SC: Author.
- Clarke, R.V. (1980). "Situational" crime prevention: theory and practice. British Journal of Criminology, 20 (2), 136-47.
- Clarke, R.V. (Ed.) (1992). Situational Crime Prevention: Successful Case Studies. New York: Harrow and Heston.

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

Cornish, D.B. & Clarke, R.V. (eds.) (1986). The Reasoning Criminal: Rational Choice Perspectives on Offending. New York: Springer-Verlag.

Bureau of Justice Statistics (2000). Criminal Victimization 1999: Changes 1998-99 with Trends from 1993-99 (NCJ Publication No.182734) Washington D.C.: Author.

Campbell, D.T., & Stanley, J. (1966). Experimental and Quasi-Experimental Designs for Research. Chicago: Rand-McNally.

Cunningham, W., Strauchs, J., & VanMeter, C.W. (1990). The Hallcrest Report II: Private Security Trends 1990-2000. Boston: Butterworth-Heinemann.

Cherry, D.T. (1986). Total Facility Control. Boston: Butterworth-Heinemann.

Davis, M (1990). The militarization of urban space. In M. Sorkin (ed.) Variations On A Theme Park: The New American City And The End Of Public Space. New York: Hilland Wang, 155-180.

Dillon, D. (1994). Fortress America: More and more of us are living behind locked gates. Planning, 60 (6), 13-18.

Federal Bureau of Investigation (2000) Crime in the United States, 1999. Washington, D.C.: U.S. Government Printing Office.

Fotis, J.J.& Miringoff, M.L. (1993). Are gated communities a reasonable response to crime? CQ Researcher, 3 (33), 785-786.

Flowers, R.B. (1989). Demographics and Criminality: The Characteristics of Crime in America. New York: Greenwood Press.

Gabor, T. (1990). Crime displacement and situational prevention: Toward the development of some principles. Canadian Journal of Criminology, 32, 41-74.

Hesseling, R. (1994). Displacement: A review of the empirical literature. In R.V. Clarke (Ed.), Crime Prevention Studies, (Vol. 3). Mosey, NY: Willow Tree Press, 118-131.

Landes, W. M. (1978). An economic study of U.S. aircraft hijacking, 1961-1976. Journal of Law and Economics, 21:1-32.

Laycock, G. & Austin, C. (1992). Crime prevention in parking facilities. Security Journal, 3, 154-160.

Martinson, R. (1974). What works? Questions and answers about prison reform. Public Interest 35, 22-54.

Manunta, G. (2000). The management of security: Just how robust is the justification process? Security Journal, 13 (4), 33-38.

Murray, C., Motoyama, T, & Rouse, W.V (1981). The Link Between Crime and the Built Environment: the Current State of Knowledge (Vol. 1). Washington, D.C.: National Institute of Justice.

Newman, G. (1996). Introduction. In R.V.G. Clarke, G. Newman, & G. Shoham (Eds.), Rational Choice and Situational Crime Prevention. Aldershot, England: Dartmouth.

Newman, O. (1972). Defensible Space. New York: MacMillan.

Owens, J.B. (1997). Westec story: gated communities and the fourth amendment. American Criminal Law Review, 34 (3), 1127-1160.

Patankar, M.S. & Hoelscher, L. (2000). Accessibility vs. security: The challenge to airport security systems. Security Journal 13 (2), 7-19.

Pompe, J.J. (1998). Fortress America: Gated Communities in the United States (book review) Southern Economic Journal, 65 (1), 192-196.

Poyner, B. & Webb, B. (1992). Reducing theft from shopping bags in city center markets. In R.V. Clarke (ed.), Situational Crime Prevention: Successful Case Studies. New York: Harrow and Heston.

Purcell, M. (1998). Fortress America: Gated communities in the United States (book reviews) Urban Affairs Review, 33 (5), 725-728

Reich, R.B. (November 30, 1998). Do Good Fences Make Good Neighbors? The New Yorker, 74 (37): 31-33.

Reppeto, T.A. (1976). Crime prevention and the displacement phenomenon. Crime and Delinquency 22, 166-177.

Ricks, T.A., Tillett, B.G., & VanMeter, C.W. (1988). Principles of Security, (2nd Ed.). Anderson Publishing.

Saad. L. (June 21, 2000) Crime tops list of Americans' local concerns. Gallup Online. Retrieved September 21, 2000 from the World Wide Web:

<http://www.gallup.com/poll/releases/pr000621.asp>

Seidman, D. & Couzens, M. (1974). Getting the crime rate down: Political pressure and crime reporting. Law and Society Review, 8 (3), 456-457.

Sherman, L. & Glick, B. (1984). The quality of arrest statistics. Police Foundation Reports 2. Washington D.C.: The Police Foundation.

Sherman, L. W., Gottfredson, D., Mackenzie, D., Eck, J., Reuter, P., & Bushway, S. (1997). Preventing Crime: What Works, What Doesn't, What's Promising (NIJ Publication No.165366). Washington, D.C.: Office of Justice Programs.

Schultz, D. O. (1978) Principles of Physical Security. Houston, TX: Gulf Publishing Co.

Titus, R. M. (1999). Personal opinion: declining residential burglary rates in the USA. Security Journal, 12 (3), 59-63.

U.S. Department of Justice, Bureau of Justice Statistics (2000). Criminal Victimization 1999: Changes 1998-1999 with Trends 1994-1999, Bulletin NCJ 182734. Washington, D.C.: Author.

Vargara, C.J. (1994). Fortress mentality. New Statesman & Society, 7 (288). 18-21.

Weisburd, D. (1997). Reorienting Crime Prevention Research and Policy: From the Causes of Criminality to the Context of Crime (NCJ Publishing No. 165041) Washington, DC: National Institute of Justice.

White, G.F. (1990). Neighborhood permeability and burglary rates. Justice Quarterly, 7 (1), 58-67.