

PERCEPTIONS OF CRIME, FEAR OF CRIME, AND DEFENSIBLE SPACE  
IN FORT WORTH NEIGHBORHOODS

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Presented to the Faculty of the Graduate School of  
The University of Texas at Arlington in Partial Fulfillment  
of the Requirements  
for the Degree of

DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF TEXAS AT ARLINGTON

December 2006

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## ACKNOWLEDGMENTS

First and foremost, I must acknowledge the sacrifice and support of my family. Mark, during all the ups and downs you have been my sounding board and technical support; I am honored to be your wife. Karly, my beautiful baby girl, you have inspired me to see the world through new eyes and you give my life new purpose and direction. Mom and Dad, I am who I am because of you. Thank you for all you do. Barb and Joe, you are a steadfast and wise mentors and I'm lucky to have you as in-laws.

Next, I could not have completed this dissertation without a team of academics. Dr. Alejandro del Carmen, you saw in me what I could not see in myself, and I am a changed person because of that. Dr. Nancy Rowe, you taught me more than anyone about research and statistics; you are truly a magician. To my other committee members—Dr. Rodney Hissong, Dr. Edith Barrett, Dr. Maria Martinez-Cosio, and Dr. Robert Bing—I have learned valuable lessons from each of you and I appreciate your time and efforts in serving on this committee.

Last but not least, I must acknowledge my amazing friends, Vickie and Robyn. Thank you for always listening and believing in me. Joanna, I could not have made it through this process without your understanding and friendship. To my new colleagues at Fayetteville State University, thank you for your support

and encouragement during this time. I look forward to a rewarding and successful future together.

November 17, 2006

## ABSTRACT

### PERCEPTIONS OF CRIME, FEAR OF CRIME, AND DEFENSIBLE SPACE IN FORT WORTH NEIGHBORHOODS

Publication No. \_\_\_\_\_

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The University of Texas at Arlington, 2006

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This research used descriptive, written scenarios to test the perceptions of crime, fear of crime, and defensible space of residents in three Fort Worth, Texas, neighborhood associations. The survey instrument included two different measures of fear of crime: a) fear of crime in hypothetical scenarios, and b) fear of crime in resident's own neighborhoods to examine whether residents who were fearful in their own neighborhood also reported high levels of fear in hypothetical neighborhoods. The instrument also tested whether residents perceived certain neighborhoods as defensible and if residents recognized what crime prevention scholars defined as "safe" environments. The multiple regression models controlled for actual crime by asking about personal crime victimization and

acquaintance crime victimization. Numerous demographic characteristics were also regressed on fear of crime in hypothetical neighborhoods, and perceptions of defensible space in hypothetical neighborhoods. The results suggested that the presence of adequate maintenance, presence of signs of community investment, and gender were the most significant variables in explaining fear of crime in hypothetical scenarios. In terms of defensibility of the space, the most significant predictors were maintenance, signs, marital status, and education. Policy implications were discussed as well as suggestions for future research.

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## CHAPTER 1

### INTRODUCTION

“Everyone has a right to live in a community that is safe.” Just as it should not pose threats to the health of residents, people should not have to fear for their personal safety and/or the safety of their belongings. (du Pleissis, 1999, p. 1)

The overwhelming need to feel safe and secure in our homes and neighborhoods remains persistent, maybe even more so in today’s troubled times. It is evidenced in the increase in security systems, gated communities, and private security forces. We want to make it difficult for offenders to invade our domiciles. We want to protect ourselves from crime. These desires are so strong that they have translated into numerous public policy and governmental interventions. Since the September 11, 2001 attacks on American soil, we have seen the creation of a new federal agency in the U.S. Department of Homeland Security, the passage of the USA Patriot Act (Public Law No. 107-56) in 2001 and its renewal in 2006, and an increase in federal funding for state and local first responders in the form of training in emergency management and biological warfare issues.

The atmosphere since 9/11 may have led to the increased interest in crime prevention methods that focus on security systems, gated communities, private security forces, and making potential targets “harder” to attack. The broad

theoretical foundation on which these circumstances are based is referred to as crime prevention through environmental design (CPTED), for which Oscar Newman's famous work *Defensible Space* (1972) set the groundwork.

Accordingly, the purpose of this dissertation is to examine whether the physical features in the residential environment, specifically, lighting, maintenance, and signs of community involvement, impact perceptions of fear of crime and perceptions of defensible space in neighborhoods. Three main questions will be answered by this research: (a) Which characteristics of the built environment in particular are associated with perceptions of fear? (b) What measures can be taken to reduce the feelings of fear in these particular neighborhoods? and (c) How do certain demographic characteristics and previous crime experience impact fear of crime in residents' actual neighborhoods.

Some critics of defensible space theory have argued that it ignores the social aspect of crime prevention (Mawby 1977; Mayhew 1979; Cozens 2000). This dissertation seeks to fill that gap by examining residents' perceptions of crime, fear of crime, and defensible space, thereby putting the "people" into the theory. Measurements of these perceptions will provide valuable information at the micro-local level and will stress the importance of dealing with neighborhood issues individually.

Attitudes and behaviors of residents are said to be related to the defensibility of the space. When there is a sense of community among residents,

the physical aspects of the space may be more effective in deterring crime than when the sense of community is nonexistent or weak (Booth, 1981; Greenberg, Rohe, & Williams, 1982). In this dissertation, sense of community is tested through the presence of signs of community investment. When the signs of community investment are present in a neighborhood, it is argued that the residents of said neighborhood have a strong sense of community and are advertising to others that this is a neighborhood that is involved and actively “guarded.” Sense of community is indirectly tested by the manipulation of maintenance of homes and grounds as well. When a neighborhood is adequately maintained, it presents a perception of cohesion and cooperation. An image that says to potential offenders that this area is defended, and the risk of apprehension too high to be worth the benefit of committing a crime here.

The goal of this research is to explore what is most important to residents in different neighborhoods with regard to levels of fear and crime. For example, if residents in Neighborhood A think lighting is the most important variable in reducing crime and fear of crime in their neighborhood, it would make the most sense to address the lighting concerns instead of something else. If residents in Neighborhood B view lighting to be of secondary importance, addressing the lighting there would not likely do much to reduce fear and crime in that neighborhood. A secondary goal of this research is to determine whether residents perceive a neighborhood as defensible when certain variables are present. In essence, this means comparing residents’ definitions of defensible

space with defensible space scholars and CPTED practitioners, who argue that a) housing design, b) territoriality, c) physical deterioration and c) previous experience with crime affect residents' perception of the defensibility of their neighborhoods. It is important to determine if the modifications suggested by the theoretical models are recognized by residents as having the ability to impact crime and fear of crime.

This research attempts to build on the concepts espoused in CPTED and defensible space theory, especially those calling for collaborative and cooperative relationships among the community and government agencies to prevent and address crime in neighborhoods. Crime prevention strategies are most effective when residents, police, planners, policy makers and other officials recognize they have important roles to play in reducing fear and crime. Residents' roles include participating in cleanup and beautification activities; joining organized neighborhood watch programs; identifying neighborhood problems and then communicating those problems to relevant government officials, (Fleissner & Heinzelmann, 1996).

The police departments' roles consist of working with urban planners and architects to review the designs and plans to improve community security; prepare educational materials for building owners and managers to enhance the livability and security of rental units; conduct security surveys for residents and provide security improvements such as adequate lighting and locks. Local governments' roles include encouraging the use of building codes, inspection



and enforcement authority to increase environmental security. The owners of dilapidated or abandoned buildings can be required to repair or demolish them. Building codes can be written to include target hardening methods such as locks and lighting, (Fleissner & Heinzelmann 1996). Effective collaboration is a key element of CPTED and the success in reducing fear of crime in neighborhoods and can also increase informal social control and enhance the quality of neighborhood life, (Greenberg, 1984).

This dissertation concentrates on four different approaches to making residential environments safer in the eyes of their residents. The first approach focuses on housing design by making it more difficult for offenders to commit crimes through reducing the availability of targets, removing barriers that prevent easy detection of offenders or offenses in progress, and increasing the physical obstacles to committing crime. Jacobs (1961) and Newman (1972) are the two prominent scholars who first put forth the concept that housing design can make residents feel safer in their neighborhoods. In essence, these scholars argued that neighborhoods with adequate surveillance opportunities, clear separation of public and private space and territorial control over personal spaces, and the proximity to well-used institutions led to stronger resident-based informal control of their areas. Such informal control should lead to less delinquency, less fear, and less victimization (Taylor & Harrell, 1996).

The second approach used in this dissertation addresses issues of territoriality. This involves encouraging residents to use territorial signs to create

an image that the neighborhood is protected by concerned residents (Jacobs, 1961; Jeffery, 1971; Newman, 1972; Taylor & Harrell, 1996). Taylor (1988) has stated that neighborhoods which encourage residents to maintain their areas well, keep them clean, and make them appealing increase the chances of the residents themselves initiating conditions that will show their involvement and watchfulness over a certain location.

When a neighborhood has the presence of territorial influence, it signals to other residents as well as nonresidents that the people living there care about what happens and are willing to intervene if needed. In addition, territoriality causes residents and outsiders to interpret environmental cues as to how residents will act in various situations. Residents perceive that stronger signs of territoriality mean a safer environment; the more threatening the environment, the greater number of territorial signs required to make residents feel safe, (Brower, Dockett, & Taylor, 1983).

The third approach employed in this dissertation maintains that failure to reduce and then control physical deterioration, leads offenders to perceive areas as vulnerable to crime, and residents as so fearful they would do nothing to stop a crime. Physical improvements may reduce the signs of vulnerability and increase commitment to a unified effort at protective activities. Physical deterioration is hypothesized to influence cognition and behavior of potential offenders as well as shape how residents behave and their thinking about other residents (Taylor & Harrell, 1996; Wilson & Kelling, 1982).

This dissertation concentrates on the micro-level of resident-controlled spaces rather than the macro-level incivilities concentration. Reducing neighborhood wide incivilities usually addresses larger physical problems that might require significant involvement from city agencies or community development agencies (Taylor & Harrell, 1996). Citizens and neighborhood associations often play roles in requesting and assisting in such macro-level efforts, but often the incivilities concentration is outside of the residents' control (Taylor & Harrell). For instance, citizens are not held responsible for preventing the proliferation of vacant houses or businesses in their neighborhood, or removing graffiti from structures. Likewise, Hunter (1978) stated that many people blame deterioration of this scale on public agencies, not on the residents themselves.

The fourth approach focuses on the impact of previous crime experience or victimization on fear of crime in residential neighborhoods. Scholars such as Terance Miethe (1995) stress the importance of studying crime victimization because of the potential traumatizing results for some people. Miethe says that some victims of crime completely restructure their lives, become suspicious of strangers, take great precautions against future risk, and experience decreasing feelings of personal autonomy and control.

These four approaches are not mutually exclusive; they can impact and reinforce each other either separately or collectively. For example, increasing encouragement for territorial markers (the sense of responsibility and ownership

felt by users of the space) will likely lead to less physical deterioration. An additional result may be that perceptions of crime and fear of crime will diminish. The interrelatedness of the three approaches has implications for criminal justice officials, urban planners, and others who have the power and authority to change residential environments when considering which approach is most suitable to each particular setting.

Chapter 2 presents a review of the historical development of criminological theory and how these developments influence today's crime prevention ideas. Chapter 3 conducts a background discussion and review of the literature relevant to fear of crime. Chapter 4 explains the research methodology employed in this dissertation. Chapter 5 presents the data analysis that was conducted to test the hypotheses. Chapter 6 discusses limitations of the study, conclusions, and policy implications.

CHAPTER 2  
BACKGROUND AND DEVELOPMENT OF  
CRIMINOLOGICAL THEORY

2.1 Historical Background

The study of crime and place is not a new one. By the mid-nineteenth century, officials began documenting the distribution and location of crimes and identifying “dangerous places” in that century’s cities. The purpose of this chapter is to review the development of criminological theory as related to the built environment and fear of crime. This review will provide focus and background and highlight the original contribution of this research.

*2.1.1 The Classical School*

Historically, the criminal justice system emerged from a legal system based on revenge and just desserts while ignoring crime prevention. The classical school of criminology was a reaction against the barbaric system of law, justice, and punishment which existed before the eighteenth century. It provided an emphasis on free will and human rationality, and was not a study of criminals but rather one of lawmaking and legal processes. Crime existed because individuals had free will and weighed the consequences of their actions. This system of criminal justice relied on a hedonistic model of pleasure and pain as the primary method for controlling human behavior. Punishment was necessary

to deter individuals from committing crime, and the pain of it had to be greater than the pleasure derived from the criminal gains (Vold, Bernard, & Snipes, 2002; Williams & McShane, 2004).

The philosophical ideals of Thomas Hobbes permeate the classical school of thought through the principle that the power of the state is necessary for political and social order (Jeffery, 1990; Jeffery & Zahm, 1993). Also entrenched in classical thinking are John Locke's ideal of the social contract to protect basic rights to life, liberty, and property and Jeremy Bentham's utilitarian idea of the greatest happiness for the greatest number by maximizing pleasure and minimizing pain for members of society. Scholars of this time period called for a new modern criminal justice system to guarantee equal treatment of all people before the law. They also argued that punishment should be merely a trace in excess of the pleasures derived from an act, and not any more than that. Thus, because the law exists to create happiness for all, the unhappiness generated by punishment can be justified only if it prevents greater evil than it produces (Jeffery & Zahm, 1993; Williams & McShane 2004).

Despite the radical changes made to the criminal justice system from the employment of classical school principles by scholars, there are four main weaknesses which need to be addressed to provide a complete picture of this orientation. First, the classical school's view of human nature as rational is somewhat simplistic. Even though people may sometimes weigh the costs and benefits of their actions, they will act emotionally at other times. For example, the

assumption of rationality does not explain crimes of passion. Second, although some people attempt to maximize pleasure and minimize pain, there rarely is agreement on the determination of what is pleasurable and what is painful. Therefore, it is impossible to create an environment that is impermeable to crime because it has addressed rational concepts. Third, classical thinking assumes the criminal justice system is fair and unbiased so that it will treat everyone equally. This fails to take into account the possibility that decisions can be influenced by biases based on race, gender, or socioeconomic status. And, fourth, the classical view does not take into account the interaction of forces operating both within and outside the individual to influence behavior criminal behavior (Barkan, 2005; Vold & Snipes 2002; Williams & McShane, 2004).

The idea of pain and pleasure as basic human behavior is popular in many theories that will be considered later in this dissertation (e.g., CPTED, routine activities, and rational choice). Next, a more scientific perspective than free will and rationality, the positivist school of criminology, will be discussed.

### *2.1.2 The Positivist School*

The positivist school of criminology developed in the nineteenth and twentieth centuries as a response to the emergence of science and the empiricism found in the natural sciences by such scholars as Isaac Newton, Charles Darwin, August Comte, Sigmund Freud, and Ivan Pavlov. The scientific method was becoming popular in Europe at this time and, rather than relying on pure thought and reason, people began to use careful observation and analysis

to determine the way the world worked. There are two basic elements associated with the positivist school of thought (Siegel, 2005; Vold & Snipes 2002; Williams & McShane, 2004):

1. Human behavior is a function of forces beyond a person's control.

Some forces are social, such as wealth and class; others are political and historical, like war and famine. Still other forces are more personal and psychological, such as a person's brain structure, biological makeup, and mental ability. Each of these forces influences human behavior.

2. Positivism involves using the scientific method to solve problems and the strict employment of empirical methods to test hypotheses. Positivists believe in factual, firsthand observation and measurement of conditions and events.

The positivist school replaced punishment with therapy; that is, prisons with clinics (Jeffery & Zahm, 1993). Two major branches of treatment emerged. One design was based on the study of offenders in psychology and psychiatry, where the purpose of science was to rehabilitate the ill individual through a medical model. The second came from sociology and Marxian ideology, where reforms were aimed at the ills of society and not the individual offender (Jeffery & Zahm, 1993).

Critics of the positivist school of thought are primarily concerned with the idea that criminals are viewed as being abnormal and non-criminals as normal. This assumes that criminals are inherently different than non-criminals in their biological, psychological, or social characteristics. Opponents also point out that



positivists paint an overly deterministic view of human behavior, thereby denying free will completely. Finally, positivists place the focus of deviant or criminal behavior on the “illness” of the individual and ignore the premise that the social system itself may contain serious injustices.

The next phase in the development of criminological theory came from the Chicago school, which was still positioned under the umbrella of the positivist school. Scholars in the Chicago school were concerned with the study of human behavior as determined by social and physical environmental factors. Consequently, pathology in the city was viewed as the cause of crime. Humans are social creatures and their behavior is a product of their social environment (Vold & Snipes 2002). The work of scholars from the Chicago school, which came to prominence in the 1920s and 1930s, will be reviewed next.

### *2.1.3 The Chicago School*

Positivism was further advanced by research conducted by Robert Park and Ernest Burgess (1921) at the University of Chicago. These urban sociologists studied the social ecology of Chicago and argued that neighborhood conditions, such as poverty levels, influence crime rates. They found that the social forces operating in urban areas created a crime-promoting environment; thus, some neighborhoods were “natural areas” for crime. Social institutions, such as schools and families, in those areas lost their traditional ability to control behavior due to the high poverty and crime levels (Jeffery & Zahm, 1993; Siegel, 2005; Vold & Snipes 2002; Williams & McShane, 2004).

The urbanization and industrialization of U.S. cities during the 1920s was blamed for the breakdown of older, more cohesive patterns of values, thus creating communities with competing norms and value systems. The collapse of urban life resulted in basic institutions, such as family friendships and other social groups, becoming impersonal and almost anonymous. As values fragmented, opposing definitions about proper behavior arose and came into conflict with socially unacceptable behaviors. Disorganization was more prevalent at the center of an urbanized city and decreased with distance from it, so crime developed through frequent contact with criminal traditions, goals, and values that emerged over a period of time in disorganized areas of the city (Vold & Snipes, 2002).

This brief historical overview is relevant to the present research in that concepts from the Classical and Positivist orientations form the foundation for many crime prevention policies and initiatives throughout the United States and around the world. Crime prevention theories are based on many assumptions of the classical school, the most relevant being, offenders are rational. In this way, offenders view the risks (of apprehension) of committing crime in a defensible neighborhood as greater than the benefits. At the same time, crime prevention theories draw from the positivist school in that factors in the physical environment impact criminal behavior.

The historical development of criminological theory has focused primarily on an approach to why offenders engage in crime. Jane Jacobs (1961) Oscar

Newman (1972; 1973), and C. Ray Jeffery (1971) all contributed to a new way of thinking about crime. These works were concerned with preventing crime before it occurred by making it difficult or undesirable for potential offenders to engage in crime. This type of research affords potential solutions for citizens, criminal justice officials, and urban planners to use in designing and interacting with their environment. The next part of this chapter provides the basic elements of rational choice theory. Since the crime prevention theories used in this dissertation assume rationality, it is necessary to understand this foundation.

#### *2.1.4. Rational Choice Theory*

The perceived failure of rehabilitative ideas, and the increase in officially recorded crime rates during the 1970s and 1980s, returned attention to analyzing criminal decision-making processes that were first espoused in the classical school (i.e., offenders as rational and calculating). The significant increase in reported crime during those two decades frightened the public, and the media portrayed criminals as callous and dangerous rather than people deserving of public sympathy. The public response was to frighten criminals with severe punishment rather than waste community dollars on rehabilitation programs that did not work. Politicians in the 1980s embraced this approach by passing "Get Tough on Crime" measures to bring the crime rate down. Punitive new laws were passed that demanded mandatory prison sentences for drug offenders and, as a result, prison populations skyrocketed. From these roots, rational choice theory emerged (Barkan, 2005; Siegel, 2005).

The basic elements of rational choice theory are:

1. People are rational.
2. People freely choose both law-abiding and criminal behavior based on their rational calculations.
3. People's choices are toward maximizing pleasure and minimizing pain.
4. Individuals choose to commit a crime after calculating whether the potential rewards outweigh the potential risks.
5. Criminals can be deterred from committing crimes if the potential risks seem too certain or severe (Barkan, 2005; Siegel, 2005).

The weaknesses of rational choice theory echo the weaknesses of the classical school, because the classical school relies heavily on the concept of rational thought. Rational choice theorists fail to address the fact that numerous factors go into decision making, which might make it more complex than a straightforward calculation of costs versus benefits. Rationality is also practically impossible to test. How does one know what an offender was thinking right before he or she committed a crime? Finally, not all offenders and not all behaviors are rational (Barkan, 2005; Vold et al., 2002; Williams & McShane, 2004). This theory cannot explain crimes committed by offenders with mental illnesses or offenders with mental retardation, or even by offenders under the influence of alcohol or drugs.

In short, rational choice theory assumes that the decision making of offenders is rational and that offenders respond to environmental cues (Cornish & Clarke, 1986; Pascoe & Topping, 1998). L. Cohen and M. Felson (1979), R.V.

Clarke and M. Felson (1993) are scholars who believe that offenders also respond to cues in the environment which influence their behavior. Closely connected with rational choice theory is opportunity and routine activities theory, which will be outlined in the next section.

### *2.1.5 Opportunity Theory and Routine Activities Theory*

A theoretical model developed primarily by economists or sociologists using an economic model is known as an opportunity model or a routine activities model for crime control. Classical criminology connects routine activities with other crime prevention models, such as defensible space and CPTED, through the idea that humans are dominated by a rational choice of pleasure over pain (Jeffery & Zahm, 1993). Gary Becker (1968) published his rational choice economic model, the first in modern economics, in his paper titled "Crime and Punishment: An Economic Approach." He argued that crime can be understood in terms of pleasure and pain or, as economists put it, utility and cost. *Criminal behavior* is behavior that maximizes gain over cost at a particular point in time. "A person commits a crime if the expected utility to him exceeds the utility he could get by using his time and other resources at other activities, (p. 169)." Some people become criminals because their benefits and costs differ, not because they possess different motivations.

L. Cohen and Felson (1979) developed a model of criminal behavior known as routine activities. *Routine activities* refers to what individuals do during the course of a day in terms of going to work, being at home, heading out to the

shops, and so forth. These authors looked at the interaction of targets, potential offenders, and control agents as producing the crime event. They cited the growth in the number of automobiles and popular electronics as affecting crime rates, because they make attractive targets, are portable, easily stolen, and sold or traded for drugs without difficulty.

Routine activities theory focuses on criminal events and ignores the importance of criminal motivations in behavior. As the principle proponents of the theory, L. Cohen and Felson (1979) did not deny the existence of criminal inclinations, but took them as a given, thereby virtually dismissing what was central to most contemporary criminology at the time. This is one factor which set routine activities theory apart from other criminological theories of the 1960s and 1970s. It is primarily concerned with criminal events instead of socioeconomic issues or racial motivations for an attack (Clarke & Felson, 1993).

Routine activities theory assumes that, for a crime to occur, there have to be three minimal elements: a motivated offender, a suitable target, and the absence of capable guardians (Clarke & Felson, 1993; Cohen & Felson, 1979). A likely offender is anyone who for any reason might commit a crime. A suitable target of crime is any person or object likely to be taken or attacked by the offender. The word "target" was selected to avoid the moral implications of the word "victim," and to treat persons and property exactly the same as objects with a position in time and space. The third minimal element, the capable guardian, in most cases is not seen to be a policeman or security guard. That is because, in

their view, the persons likely to prevent a crime are not policemen who are seldom around to discover crimes in the act, but rather neighbors, friends, relatives, and bystanders or even the owner of the property targeted (Clarke & Felson 1993). The absence of the capable guardian is a crucial element to this theory. An offender must find a target in the absence of guardians. The moment that happens, a crime may occur (Cohen & Felson).

The rational choice, opportunity, and routine activities theories are all integral to the urban design and crime literature, because they assume that potential offenders are rational and will recognize environmental cues that prevent him or her from committing a crime. Building on the idea that potential offenders are rational enough to understand environmental signals which will influence their behavior is the background of the urban design and crime literature discussed in the following section.

#### *2.1.6 Background: Urban Design and Crime*

Historically, criminologists have ignored the role of places and targets in criminal events, focusing instead on offenders (Eck & Weisburd, 1995; Weisburd, 1997). This omission has produced a lack of understanding about criminal events (Garofalo, 1987). When criminologists ignore the place and target of crime and focus on the offender, the role that victims play in criminal events is neglected (Fattah, 1993). Logically, no crime can occur without a target (i.e., the victim or the victim's property) (Robinson, 1996). The focal point of this dissertation is the importance of the physical residential environment, or the role of places plus the

perceptions of residents who may be viewed as attempting to prevent a potential offender from making him or her a victim of crime. As stated previously, the contribution of this research is introducing the “people” into the crime prevention theory.

While Elizabeth Wood (1961) worked for the Chicago Housing Authority in the early 1960s, she attempted to make residential environments of lower class citizens more rich and fulfilling. Specifically, she tried to implement design changes to enhance the quality of life for residents and increase the aesthetic qualities of the residential environment as well as develop security guidelines to increase safety in these surroundings (Newman, 1973). Wood’s design goals included improving visibility of apartment units by residents and generating spaces where residents could gather, thereby increasing the potential for resident surveillability. She assumed that effective control of residential areas required the presence of and natural surveillance by residents. Areas out of view and unused were simply not controllable. Building on her work, Newman and Jacobs argued that certain types of designs could translate into loss of opportunity for informal social control by residents (Robinson, 1996). Newman considered Wood the foremost practitioner of social design in the field of housing (Robinson, 1996).

Jacobs’ seminal work, *The Death and Life of Great American Cities* (1961), was the earliest writing on urban decay and its relationship to crime as well as a harsh critique of modernist planning policies that she claimed were



ruining many existing inner-city communities. This work emphasized diversity as the key to safety in urban space. Living in Greenwich Village, Jacobs experienced an urban environment in which different social environments could be found within only a few city blocks from one another. She attributed this to the mix of land uses, consistent building setbacks, and short blocks among other characteristics resulting in 24-hours-a-day activity and eyes on the street. Jacobs argued that the continual use of public areas is the most effective way to assure informal surveillance, what she referred to as a basic supply of activities and eyes. Conversely, the dominance of single land use, regardless of what it is, results in a scheduling of use so that the area is deserted for long periods of time. The more people use the streets, the more opportunities there are for informal surveillance. That, in turn, discourages criminal activity. The underlying assumption of Jacobs' argument is that people who use the streets have a sense of responsibility toward one another and would be willing to intervene in a suspicious or criminal event, or at least that is what potential criminals perceive to be the case, (1961).

Scholars such as Jeffery (1971) have cited Jacobs as sparking widespread interest in ways that environmental conditions could be related to crime prevention. Jacobs hypothesized that urban residential crime could be prevented by reducing conditions of anonymity and isolation in those areas (Murray, 1994). She criticized urban planners and their policies which called for reliance on the automobile in exchange for fostering community life. She argued

further that the manner in which cities were designed and built meant their citizens would be unable to maintain the informal social control networks necessary for self-policing. In other words, crime flourishes when people do not know and meaningfully interact with their neighbors, because they will be less likely to notice an outsider (Robinson, 1996).

Jacobs (1961) work discussed how high levels of natural surveillance create safer environments. She called for city streets to have three main characteristics to make them safer: (a) clear demarcation between public and private space, (b) diversity of street use, and (c) fairly constant sidewalk use or eyes on the streets. Active streets serve as deterrents to crime (Jacobs, 1961). To Jacobs, the best protection against crime is to live in a community where neighbors watch out for each other and are willing to contact the police or intervene directly when they spot a criminal or criminal behavior (Robinson, 1996).

Schlomo Angel followed Jacobs and argued that crime could be prevented through effective planning. He wrote *Discouraging Crime Through City Planning* in 1968 and utilized concepts from rational choice theory to understand crime prevention. Angel, like scholars yet to come like Jeffrey and Newman, argued that citizens should take an active role in preventing crime, beginning with a diagnosis of which environments offer the most opportunities for crime to occur. He assumed that certain areas had higher levels of crime, because of higher levels of opportunity for rational offenders to take advantage. Offenders were

thought to choose their targets through a decision-making process where they weighed the effort and risk against potential payoffs. Similar to Jacob's eyes on the street argument, Angel argued that deterring crime requires high-intensity use of an area which provides large numbers of effective witnesses and low-intensity land use which decreases crime because of lower numbers of potential victims (Newman, 1973). Angel advocated changing the physical environment by channeling pedestrian traffic and zoning businesses into areas with nearby mass transit and parking facilities (Robinson, 1996).

Continuing with a discussion of the impact of environmental factors on crime is the literature that stresses the importance of location. Broadly, this literature is referred to as "environmental criminology" and is relevant to the current research in that it places emphasis on the spatial dimensions of criminal behavior, including the importance of the environment, on criminality.

### *2.1.7 Environmental Criminology*

As a group, the theories under the environmental criminology umbrella attempt to predict crime based on elements such as target distribution, land use patterns, transportation pathways, and offender residence distributions (Rengert, 1992; Rhodes & Conley, 1981). Environmental criminologists have proposed models of decision making that lead potential offenders to specific targets and specific locations (P.J. Brantingham, Brantingham & Molumby 1977; Brown & Altman, 1981). Mayhew (1979) reviewed empirical data on crime in public places and called for an examination of how potential offenders search for and decide

on a target to promote understanding of the crime rate. Bottoms and Wiles (1992) both argued that neighborhood reputation and the consequences of ecological labeling have powerful effects on the urban crime pattern.

*Environmental criminology* places much greater emphasis on the spatial dimensions of criminal behavior, and has been defined as the study of crime, criminality, and victimization as they relate: (a) to particular places and (b) to the way that individuals and organizations shape their activities by place-based or spatial factors (Bottoms & Wiles, 1992). It assumes that the two most important dimensions to crime are the target and the place. P.J. Brantingham et al. (1977) discussed a concept called sense of place referring to people's development of an attachment to a location over time, given normal activity. This sense of place is usually associated with positive environmental appraisals of a particular location; however, places may also carry highly negative associations and be fear inducing. Sense of place is relevant to the current research in that perceptions of hypothetical neighborhoods are measured to determine which aspects of the neighborhoods are fear inducing and which are not. One might assume fear of a certain place equates with crime in that place, but research has shown the most crime-ridden places are often the places where people say they feel safest (e.g., university campuses) (P.J. Brantingham & Faust 1976; Brantingham et al., 1977). Fear of place may be associated with isolation, darkness, lack of escape routes, hidden niches, tunnels, alleys, or empty parks

at night, according to Brantingham et al. (1997), Nasar and Fisher (1992, 1993), and Painter (1994).

The criminality of place is most often connected to level of activity, ease of access, the presence of juveniles, and the presence of easy targets or victims. The sense of place is temporal by nature. People may feel fear in a dark parking lot at night, but completely safe in the same parking lot during the daytime. In essence, criminal places as well as criminal activities have a temporal dimension in accordance with environmental criminology (P.J. Brantingham et al., 1977).

Environmental criminologists have also explored potential offender decision making by arguing that crime is associated with offender awareness of space and cues that lead to decisions about target attractiveness. Crimes occur where and when the immediate environment makes the offender feel that a crime can be committed with reasonable safety and ease. Conversely, victim decision making can affect crime patterns. Victims' choices about where to work, shop, or play affect their chances of coming in contact with offenders (P.L. Brantingham & Brantingham, 1993). The next important step will be a discussion of perceptions, because one of the stated goals of this dissertation is to understand residents' perceptions of crime, fear of crime, and defensible space. The following section provides a brief description of the environmental psychology of perceptions.

### *2.1.8 Environmental Psychology of Perceptions*

Greene and Hicks (1984, p.15) stated that the notion of perception is a highly complex issue, and they defined it as “the process by which the

information from our senses is perceived by us.” Some researchers (e.g., Ackerman, 1996) have claimed that 70 percent of the human body’s sense receptors are located in the eyes (p. 54). Ackerman has argued it is mainly through sight that humans appraise and understand the world. Further, the psychology of interpersonal attraction and the determinates of liking are relevant to understanding and measuring perceptions of crime in the built environment. Similar processes may exist when people evaluate the nature of the built environment and those determinates are based on physical attractiveness, proximity, familiarity, and similarity (Ackerman, 1996).

Studies of physical attractiveness in children conducted in the early 1970s found that attractive children were believed by respondents to be less likely than unattractive children to commit an aggressive act (Dion, 1972). The correlation of this type of study with the current research on perceptions of the built environment is that well-maintained, attractive housing is probably going to be perceived more positively than a rundown area exhibiting obvious signs of decay (Wilson & Kelling, 1982). In addition, R.L. Atkinson, Atkinson, Smith, Ben & Hilgard (1990) argued that attractive people are thought to have better personalities, and the evidence suggests they actually do because of the positive way that others treat them and their according reactions. So, by the same token, housing that is well maintained will likely enhance a safe and desirable image in people’s minds.

The determinant of proximity is relative in that people tend to know and befriend many of those in close proximity to them, which increases familiarity and liking. Similarity is revealed as an important determinant, because evidence has revealed that 99 percent of married couples in the United States marry within their own race (Atkinson et al., 1990). This correlates with perceptions of the built environment, since environments that are similar to those routinely experienced by the respondents may be viewed more positively than others. In addition, positive thoughts are not as likely to induce perceptions of the fear of crime (Cozens, 2000).

Another important aspect of the study of perception is referred to as the “psychology of experience.” Almost 200 years ago, Immanuel Kant observed that “we see things not as they are but as we are” (quoted in Sperling & Gill, 1972, p. 73). Kant’s statement is pertinent to the influence of experience on perceptions. Sperling and Gill said that everything people do, from hearing a familiar voice to tasting food, is projected on some past experience. Further, the way people perceive a situation is related to some previous experience and, if an event occurs frequently enough, people form habit reactions. This is agreeable with the argument made in this dissertation is that previous personal or acquaintance crime experience (victimization) will impact how residents perceive neighborhoods and how those perceptions relate to fear of crime.

Some scholars (Sperling & Gill, 1972) have argued that, in reacting to cues and symbols, people have trained themselves to jump to conclusions from

partial and familiar stimuli where common sensory perceptions are concerned. Perceptual mistakes are made when humans perceive something based on their past experience and habit rather than unbiased observations. For the purposes of this research, previous personal crime experience or knowing someone who has been a crime victim, especially, a property crime, may impact perceptions about the type of neighborhood where those kinds of crimes occur.

Sperling and Gill (1972) have contended that the perceptions of individuals depend not only on the nature of the actual stimulus, but also on the background or setting in which it exists (i.e., our own previous sensory experiences, feelings of the moment, general prejudices, desires, attitudes, and goals). Powerful positive or negative images from the past may include relationships with specific urban design features and therefore influence perceptions of those environments (Cozens, 2000). The environmental psychology literature also has examined environmental and landscape preference. Scholars focusing on this topic have primarily been planners, architects, and geographers. They have posited that environmental preference is based on the presence or absence of open views and protection from potential danger, protection from natural elements in nature, and, in some cases, existence of lighting (Appleton, 1996; Kaplan & Kaplan, 1982).

This dissertation examines the previously untested defensible space notion of image and perception. The theoretical foundation and elements of



defensible space theory (territorial reinforcement, natural surveillance, and the image and perceptions of residential environments) will be reviewed next.

### *2.1.9 Defensible Space Theory*

Newman's (1996) groundbreaking book, *Defensible Space*, resulted from a culmination of earlier works, primarily by Jacobs (1961), and is considered an operationalization of crime prevention themes. Newman focused on smaller scale units of analysis than Jacobs: the building and immediately surrounding lot, rather than the block or neighborhood. But, they shared the idea that certain elements of physical design could release, reinforce, and express the latent sense of territorial control (Greenberg & Rohe, 1984). *Defensible space* occurs when design characteristics of the physical environment have clear articulation of boundaries between public and private spaces. Such design characteristics then promote feelings of territorial control and capability of surveillance of spaces (Brown & Altman 1981). If achieved, this approach would result in increased policing of residential neighborhoods by the residents themselves, and therefore would reduce opportunities for crime.

Defensible space as a concept describes a residential environment designed to allow and encourage residents to supervise it themselves and be perceived by outsiders as being responsible for their neighborhoods (Newman, 1973). The goal of defensible space is to release the latent sense of territoriality and community among residents in order to allow these traits to be translated into residents' assumptions of responsibility for preserving a safe and well-

maintained living environment (Cozens, 1999; Newman, 1973; Robinson, 1996). In addition, the concept of defensible space increases the potential for residents to see and report likely offenders, thus enabling residents to control the physical environments in which they reside. Newman's ideas represented an attempt to reduce both crime and the fear of crime in a specific type of environment, by means of decreasing the opportunity for crime and fostering positive social interaction among legitimate users (Newman, 1973; Robinson, 1996).

Defensible space researchers have hypothesized that areas low in defensible space are more vulnerable to crime. The reason for this is that the large size of certain living areas relative to others does not generate feelings of ownership and community spirit by residents, and they are thus less able to recognize outsiders as potential criminals (Robinson, 1996). This dissertation argues that the neighborhoods with fewest defensible space characteristics lead to higher levels of fear by residents, because these neighborhoods are perceived as not being well cared for and not possessing territoriality. In essence, increasing the effectiveness of informal social control makes crime less likely.

Defensible space principles do not rely heavily on government interaction, but rather on the self-help of citizens. In this way, communities do not become vulnerable to government withdrawal of support or funding. Residents are expected to get involved in their communities to help reduce crime and remove criminals. Defensible space is all about individuals taking control of their neighborhoods to reduce crime, stimulate private investment, and increase the

quality of life (Newman, 1972, 1973). Newman's work assumed that physical space can be designed in such a way that it influences both residents' and offenders' perceptions of criminality. Residents feel a sense of ownership and responsibility by actively providing natural surveillance and reporting suspicious behavior. Offenders view the built environment as unsuitable for opportunities to commit crime and are deterred by the risks of apprehension.

Newman attempted to reduce both crime and fear of crime in specific environments by diminishing the opportunity to commit crime and fostering positive social interactions among legitimate residents. Newman (1973) argued that "defensible space is about an alternative, about a means for restructuring the residential environments of our cities so they can again become livable and controlled not by police, but by a community of people sharing a common terrain" (p. 11). Thus, Newman (1973) was asserting a position that the design of the built environment is an important causal factor relating to criminal behavior.

Design can hinder or assist the criminal in the selection of a crime site and a criminal act. All defensible space elements share the goal of creating an environment in which latent territoriality and sense of community in the residents is translated into responsibility for ensuring a safe, productive, and well-maintained living space (Greenberg & Rohe, 1984). Brower (1980) identified three aspects of the territoriality concept that make up the causal factors by which physical design is believed to affect crime: (a) occupancy, (b) defense, and (c) attachment. Occupancy is communicated to outsiders by the use of signs,

badges, logos, and adornments that indicate the exclusionary nature of the space. Defense involves actions that attempt to ward off potential trespassers. Attachment refers to the feelings of possessiveness that a resident has toward an area, because of its associations with his or her self-image and social identity (Brower, 1980, p. 25). When an individual expresses “territorial influence” over an area such as the home, yard, or neighborhood, potential offenders are deterred.

There are four elements of defensible space which are not mutually exclusive in establishing a safer urban setting. These elements are:

1. The capacity of the physical environment to create perceived zones of territorial influence.
2. The capacity of the physical design to provide surveillance opportunities for residents and their agents.
3. The capacity of design to influence the perception of a project’s uniqueness, isolation, and stigma.
4. The influence of geographical juxtaposition with “safe zones” on the security of adjacent areas (Newman 1972 p. 17).

Defensible space theory was the first to mention building design as an important factor in the causality of crime. Newman (1972, 1973) used empirical data and offered practice guidelines to reduce crime and as a result received a lot of attention and funding for his research (Robinson, 1996). His concepts came to be the core of most environmental design planning related to crime prevention, including a series of demonstration programs funded by the U.S. Department of Justice’s Law Enforcement Assistance Administration during the 1970s. The

relevant literature that has tested defensible space theory is reviewed in the next section.

#### 2.1.9.1 Defensible Space Research

Cozens, Hillier, Prescott, and Cynon (1999) conducted a research study with the intent of reevaluating the concepts proposed by Newman and later CPTED researchers. The study focused on perceptions of crime associated with numerous characteristics of British housing designs. Using concepts from Newman's defensible space theory, these researchers argued that the beliefs of criminals and the police are important gauges to provide insight into how defensible space is perceived by these contrasting stakeholders. The view of offenders is deemed vital, since they interpret urban space in order to respond to its stimuli. Also, the opinions of law enforcement officers may influence their on-the-job behavior and reduce the likelihood of intervention in low-income, rundown areas with a negatively stigmatized image. Cozens et al. (1999) hypothesized that both the design and image of residential housing will have a powerful influence on the perceptions of crime and deviance, defensible space, and fear of crime.

The research plan utilized by Cozens et al. (1999) was composed of five housing designs most commonly found in a British city. Photographs were taken of these designs and presented to respondents in the form of a slide show projection. Two contrasting versions of each design were selected (where possible): one well maintained and the other poorly maintained. Several

qualitative and quantitative questions were crafted to investigate perceptions of defensible space, crime, and deviance. Socioeconomic associations were presented in the form of a survey questionnaire. Cozens et al. questioned two groups: One consisted of 10 convicted burglars and the other 10 police officers.

A similar but narrower study was conducted in Canada by Kathleen Ham-Rowbottom, R. Gifford, and K.T. Shaw (1999). These researchers examined how defensible space theory applied to assessments by police officers of single-family dwelling vulnerability to burglary. Ham-Rowbottom et al. (1999) showed 50 photographs of detached houses to police officers and asked the officers to score the photos on specific physical cues. Thereby, they were assessing police officers' perceptions about the vulnerability of one specific type of housing to one specific type of criminal behavior (burglary). The most significant finding in this study was that police and burglar perspectives were not similar. These authors assumed that the differences were related to dissimilar experiences between the two groups. For instance, burglars seemed to have learned what to look for when they "case" a target house and what to expect when they break into that house. Conversely, police officers are trained to observe crime scenes and interview criminals. Because the police obviously do not experience burglaries as the perpetrators, they do not learn from breaking into a house but instead from observing the aftereffects. Residents' experiences with burglary are also secondhand in that they receive their education from the police. Residents' and police officers' perceptions did not differ significantly in the importance they

placed on any of the cue categories, and the authors hypothesized this was because police and residents share experiences and values unlike those of burglars (Ham-Rowbottom et al., 1999).

A study conducted about the perceptions of police in Canada and the built environment suggested that police officers' images of different areas can influence their professional behavior (McGahan, 1984). The primary researcher in this study, McGahan (1984), said that the distinction between "respectable" aspects of an environment influences the images in the minds of police and impacts their daily activities. Brown and Bentley (1993) studied territoriality and vulnerability in burglarized and nonburglarized properties, and found that perceptions of territorial concern, neighborhood reactivity, and homes judged as "difficult to enter" characterized nonburglarized properties. The observations of environmental professionals such as architects, urban designers, and city planners can presume resident income and fear of crime from photographs of street fronts with a certain degree of accuracy (Harries, 2000).

Despite their popularity and interest in the scholarly research, crime prevention theories focusing on defensible space have numerous critics. Many of the criticisms revolve around the methodologies and the lack of generalizability of the findings. Scholars like Mawby (1977) and Mayhew (1979) attempted to replicate Newman's findings in the United Kingdom and were not able to do so. Mawby's results showed that high-rise residential housing did not have higher crime rates than low-rise housing; actually in his case, the reverse was true.

Others like Taylor, Gottfredson, and Brower (1980) maintained that the assumption of surveillance was based on the belief that residents will exercise the policing function by intervening during the commission of a crime. They argued that only those with the authority to employ such tactics (i.e., the police) will do so.

Greenberg and Rohe (1984) have been very vocal critics of these crime prevention theories with regard to their displacement effects. They said that preventing crime from occurring in one location does little to deter criminal motivation. What it does is displace crimes to areas that are not well defended. As a result, crime is not prevented, but only shifted to another location that is unable or unwilling to defend itself with target hardening devices, such as security systems and gating. The main and most often cited problem with both CPTED and defensible space theories has been their inability to produce actual reductions in crime. Bearing this criticism in mind, the CPTED theory will be reviewed.

#### *2.1.10 Crime Prevention through Environmental Design Theory*

Writing at the same time as Newman (1973), but without influence, was a criminologist from Florida State University, C. Ray Jeffery (1971). His CPTED theory differs from other crime prevention theories, like defensible space, in that it focuses on the internal as well as the external environments and their interaction as a cause for criminal behavior. Matthew Robinson (1996) said it succinctly:



[While] Jeffery's work has recognized and advocated the importance of studying both the environment and the organism which behaves in it, most of the literature related to CPTED over the last twenty-five years has not followed suit. Much of this subsequent work ignores the evolution of the CPTED concept as illustrated by Jeffery's more recent work, and neglects the internal, physical environment of individuals in doing so. On rare occasions, when the internal environment of the organism is taken into account, it is typically treated as non-physical or "mental." Thus, most of the theoretical CPTED literature drifts away from the basic premise that crime prevention involves both the psychobiological aspects of human nature and the role of the external physical environment in human behavior. (p. 1)

In 1971, Jeffery published *Crime Prevention through Environmental Design*, which was an early attempt from academic criminology to argue for a crime prevention model of crime control (Jeffery & Zahm, 1993). Jeffery's CPTED model implies social control through the manipulation of environmental characteristics. The model rejects the concepts of revenge; just retribution; deterrence; punishment; and the use of the police, courts, or prison system to control crime. Instead, it attempts to identify conditions of the physical and social environment that provide opportunities for criminal acts and alter those conditions so that future crime does not occur (P. J. Brantingham & Faust, 1976). Further, the model focuses on the environment in which crime occurs and on the techniques for reducing the vulnerability of those settings. CPTED's central premise is that crime can be facilitated or inhibited by features of the physical environment (Clarke, 1992; Taylor & Harrell, 1996).

The two basic principles of CPTED are: (a) *target hardening*, defined as controlling access to neighborhoods and buildings, and conducting surveillance

on specific areas to reduce opportunities for crime to occur; and (b) *territorial reinforcement*, defined as increasing the sense of security in settings where people live and work through activities that encourage informal control of the environment (Fleissner & Heinzelmann, 1996). CPTED not only focuses on altering the built environment to reduce the opportunity for crime, but also on other outcomes, such as reducing fear of crime, increasing the aesthetic quality of the environment, and enriching the quality of life for law-abiding citizens, especially by diminishing the propensity of the physical environment to support criminal behavior (Clarke, 1993; Crowe, as cited in Robinson, 1996).

CPTED proponents have argued that the logic of the theory follows from the inability of reactionary criminal justice methods, such as specific and general deterrence, do not take into account that the placement of people in the physical environment is temporary due to the increasing mobility of people. Buildings and other physical features of the environment are, however, “relatively” permanent (Nasar & Fisher, 1992). CPTED differs dramatically from the traditional reactive strategies employed by many criminal justice agencies in that it focuses on crime prevention.

The theory of CPTED applies to both the external and internal environments; that is, to the environments of place and the offender, respectively (Jeffery, 1971; Robinson, 1996). As a result, CPTED as a theory has the ability to produce effects on crime and on perceptions of personal crime risks, which

accords well with the goals of this current research to examine perceptions of various groups in the community.

The National Crime Prevention Institute (1986) stated that Jeffery's work encourages crime prevention strategies aimed at changes in the physical environment and increased citizen involvement and proactive policing. Jeffery (1971) reasoned that the most effective way to prevent crime was to design the "total" environment to reduce opportunities for crime. Deeply rooted in the psychological behavior modification techniques espoused by B. F. Skinner, Jeffery's work emphasizes the role of the physical environment in the development of pleasurable and painful experiences for the offender that will alter behavioral responses. He stresses material rewards and the use of the physical environment to control behavior; in other words, by removing reinforcements for crime, it will cease to occur. His model utilizes an integrated systems model of human behavior that denies the logic of time-ordered causal reasoning, and instead accentuates the importance of interactive effects of organisms and environments, which have reciprocal influences on each other (Jeffery & Zahm, 1993; Robinson, 1996). Some important research, which utilizes CPTED theory, is discussed below.

#### 2.1.10.1 Crime Prevention Through Environmental Design Research

For the past 20 years, the National Institute of Justice (NIJ) has sponsored crime prevention research focusing on ways to make neighborhoods safer

through the use of environmental design, police-community problem solving, block watch, and other neighborhood-based strategies (Fleissner & Heinzelmann, 1996). During the 1970s, NIJ funded studies in support of the idea that proper design and effective management of a physical environment can control, and even prevent, crime.

CPTED came about as a new approach to crime control with respect to both residential neighborhoods and commercial areas. Several early CPTED demonstration projects were initiated in a residential area of Hartford, Connecticut (F. Fowler & Mangione, 1979, 1982), a commercial corridor in Portland, Oregon (Wallis & Ford, 1980a); and a school in Broward County, Florida (Wallis & Ford, 1980b). These experiments typically consisted of modifications to the physical environment (changing street design and traffic flow), initiation of community organizations, and strategies to enhance police and community relations (Greenberg & Rohe, 1984). The Hartford project successfully incorporated resident initiatives, community policing, traffic diversion, and the development of neighborhood enclaves. CPTED strategies reportedly helped residents gain more control over their neighborhood with citizen patrols, increased lighting, and cleanup campaigns to enhance quality of neighborhood life (Fowler & Mangione, 1982). In addition to the information gained from these demonstration projects, several handbooks have been written that translate the principles of CPTED into concrete suggestions for urban planners (Gardiner, 1978; Wallis & Ford, 1980a, 1980b).

Since CPTED principles focus on reducing crime and fear of crime in neighborhoods, cooperative partnerships with local police departments has been a logical evolution. The concept is that, to successfully implement crime prevention strategies, it is critical CPTED be incorporated into action not only with police officials, but with community, government, educational, and social agencies. CPTED and community policing call for a problem-solving model: identify the problem, study the problem, and identify possible solutions; implement a custom designed response; and evaluate the action taken. This type of model provides an easy and understandable framework for forging the partnerships necessary to succeed (Fleissner & Heinzelmann, 1996). General trends for CPTED and community policing strategies include comprehensive problem solving, promotion of working relationships with the community, and development of education and orientation programs that can assist residential groups as they address their specific neighborhood problems.

Similar to defensible space theory, critics of CPTED theory have highlighted four primary issues in opposition to its implementation: (a) shortage of scientific data, (b) hostility of key parties, (c) aesthetic concerns, and (d) existing buildings. The first criticism, lack of systematic testing and evaluation, has hindered development of CPTED (Cozens, 2000). Valid statistical analysis has been encumbered by the few examples of large areas designed with crime prevention in mind and the low frequency of many types of crime. Even if crime data has been available, it often has been difficult to isolate the effect of any one

deterrent, because a standardized approach is not well suited to architectural design (Hope, 1986). In general, more data is needed to ascertain the relationship of the built environment on crime and fear of crime.

The second criticism of CPTED has resulted from the difficulty in encouraging collaborative partnerships among different groups. Peter Olasky (2004) has argued that architects may not understand how to properly incorporate crime prevention into design plans, not believe it is their responsibility to do so, or not want to be restrained in their design philosophies. Developers, on the other hand, often fear that CPTED will cost too much, take too long to implement, and produce no guarantee of success.

The third criticism of CPTED has been the concern that it will create fortress-type living spaces, with bunkers and 360-degree surveillance. These critics often have been citizens who oppose governmental control over the architecture of the city (Ellin, 1999; Olasky, 2004).

The fourth criticism of CPTED has been the fact that much of the urban environment is already built. It would be easier to use macro-level CPTED strategies in new development than in rebuilding existing structures, such as in accordance with new zoning ordinances that call for mixed-use communities. Smaller scale modifications have been discussed most often in the research, including within this dissertation (e.g., enhanced lighting, more obvious signs of territoriality, and more well-maintained neighborhoods (Olasky, 2004; Jeffery & Zahm, 1993).

Both Newman (1972, 1973) and Jeffery (1971, 1990, 1993) advocated for an integrated model for understanding crime, including insight into the importance of the physical design of a person's space along with the social interrelationships that make up a community. To obtain a more complete picture of crime, Jeffery's CPTED theory not only called for study of the external physical environment, but also the internal physical organism, as well as the interaction between the two. Most proponents of CPTED have agreed that, to prevent crime, citizens must take pride in their territory and come together to provide surveillance which will deter offenders from perpetrating crimes. The reliance on law enforcement or other criminal justice officials has been too great; residents must now take a stand against crime and do their part to maintain the safety of the community (Jeffery, 1971; Newman, 1972). Resident satisfaction in their neighborhood also involves preventing physical disorder and decay, since good maintenance is also crucial in preventing crime. These ideas are elaborated on next with broken windows theory, which contributes to the crime prevention literature by concentrating on physical disorder on resident's perceptions of crime and fear of crime and the outcomes of such attitudes

#### *2.1.11 Broken Windows Theory*

Wilson and Kelling's (1982) far-reaching work on the thesis of broken windows viewed the environment as a crucial indicator of levels of social cohesion and informal social control. It Subsequent research developed signs of physical and social incivilities and fear of crime, which demonstrated the

significance of the physical condition and image of design (Wilson & Kelling 1982). Broken windows theory relates to this dissertation, because it concerns whether the image of neighborhoods with the presence of lighting, good maintenance, and signs leads to lower scores on the fear of crime scale.

Closely related to broken windows theory and its discussion of image, Olasky's research (2004) suggested that architecture is critical to crime prevention, not only in reducing the physical opportunity for crime, but in shaping social norms. He argued that tall fences and burglar bars express a community norm of fear while broken windows express a community norm of tolerance for crime, both of which increase the negative image of crime. Changing these social norms may reduce crime by threatening potential offenders with punishment (Olasky, 2004).

Kelling and Coles (1996) addressed the concepts of disorder in the community and crime by using the image of broken windows to explain how neighborhoods decay into disorder, and even crime, if no one attends faithfully to their maintenance. These authors focused on citizens' perceptions and presumed that decay meant no one had taken on the territory or responsibility for the area, or that no one cared. As a result, the decay will continue, and citizens will perceive the area as unsafe and separate themselves from it. Kelling and Coles (1996) contended that the reactive model of the criminal justice system has failed because it does not recognize the connections between disorder, fear,



serious crime, and urban decay. They also believe the model has failed, because it ignores the role of citizens in crime prevention.

Broken windows theory is linked to the defensible space and CPTED theories in that a rundown quality of the environment in which people live can negatively influence the sense of pride in belonging and ownership of their environment, thereby making them less likely to act on both environmental problems and crime. Broken windows theory attempts to explain the loss of community involvement as a result of physical disorder and crime and the fear that results from crime. All three of these theories claim that, when there are significant indicators of territoriality, community investment, and maintenance, residents will interact differently within their neighborhood environment. Wilson and Kelling's (1982) broken windows theory provides a model for crime in which visible signs of neighborhood deterioration negatively impact residents' perceptions of the area, resulting in a withdrawal from community life, a reduction of social control, and increased crime. New York City adopted the broken windows theory in 1993 and, from it, enacted a no-tolerance policy for graffiti, littering, and vandalism, and reportedly experienced drastically lower crime rates (Cozens et al., 2000).

Examination of the relationship between the environment and perceptions of fear leads to a focus on notions of community, social support, and social networks. The hypothesis of the interaction of fear of crime and the physical environment, such as in Newman's (1972) defensible space theory and Wilson

and Kelling's (1982) broken windows theory, supposes that management of the environment by cleaning up dilapidated housing, litter, and graffiti can go a long way in reducing fear of crime. Nasar and Fisher's (1992) research concluded that dilapidation reduction has a positive effect on fear of crime, which is also supported by Peterson (1967). Nasar and Fisher (1992, 1993) observed further that previous experience in dilapidated areas may create negative associations with the areas. Additionally, although there can be some differences in terms of class, ethnicity, gender, race, and environmental experience, there are a number of universal principles underlying evaluation which most people share. However, other environmental management studies have concentrated on the effectiveness and quantity of street lighting, path widening and shrub removal and found these measures failed to produce significant increase in citizen feelings of safety (P. L. Brantingham & Brantingham, 1993).

Critics of broken windows theory have attempted to discredit the sweeping claims of success brought about by zero-tolerance policies in New York in the 1990s. They have pointed out that rates of major crimes also dropped in many other U.S. cities during the 1990s, in both those that had adopted zero-tolerance policies and those that had not. Other research has suggested that the zero-tolerance effect on serious crime is difficult to pinpoint from other initiatives happening at around the same time in New York. These steps were: (a) police reforms, (b) longer sentences for drug offenses, (c) programs that moved over 500,000 people into jobs from welfare at a time of economic stability, and

(d) housing vouchers that enabled poor families to move to better neighborhoods (Thacher, 2004; Levitt & Dubner, 2005).

Thacher (2004) and Levitt and Dubner (2005) were skeptical of the assumption that the broken windows theory was unilaterally responsible for New York's drop in crime. They attributed the drop in crime to other reasons not already mentioned above. Harcourt and Ludwig (2006) looked at the later Department of Housing and Urban Development program that rehoused inner-city project tenants in New York into more "stable" middle-class neighborhoods to see if the broken windows theory held up. The theory would have expected these tenants to commit less crime once moved, due to the more stable conditions on the streets. Harcourt and Ludwig found instead that the tenants continued to commit crime at the same rate. A summary of this chapter's review of the background and development of criminological theory follows.

## 2.2 Summary

This chapter has been an attempt to synthesize the relevant theoretical literature that applies to the impact of the built or physical environment on perceptions of crime, fear of crime, and defensible space. It has demonstrated how the theories are connected to each other and therefore how they are relevant to the current design affects crime and fear of crime thesis. This research assumes that physical traits in the environment influence behavior of potential offenders and residents or users in the setting. It presupposes that offenders operate in a rational fashion, and that they prefer to commit crimes

which require minimal effort with the greatest gains. Drawing from the positivist school, crime prevention theories also address the idea that crime is a result of forces (physical environment), outside of the individual. An extension of the positivist school is routine activities theory which assumes that people have the ability to influence whether they will become crime victims by altering their daily lifestyles.

Continuing the focus of environmental determinates of crime and fear, environmental criminology argues that the physical environment influences whether or not crime occurs. Environments impact potential offenders' perceptions about a possible crime target, their evaluations of the circumstances surrounding a prospective crime site, and the availability and visibility of one or more natural guardians at or near a site. Offenders might decide whether or not to commit a crime in a particular location after determining the following: (a) How easy is it to access the area? (b) How attractive or vulnerable do the targets seem? (c) What are the chances of being seen? (d) If seen, will the people in the area do something about it? and (e) Is there a quick, direct route for leaving the location after the crime is committed?

Potential offenders contemplate the presence of capable guardians in an environment. Taylor's (1988) research on the topic maintained that residents or users of an environment may respond to possible offenders. The probability and type of response depends on numerous social, cultural, and physical circumstances. Physical features may influence reactions to potential offenders

by altering the chances of detecting them and by shaping the public versus private nature of the space in question.

The following chapter considers the relevant background and literature on fear of crime. It focuses on individual characteristics such as age, gender, and race and their relationship to fear of crime; neighborhood image and fear of crime; and neighborhood characteristics, such as Neighborhood Watch programs and lighting, as they relate to fear of crime. The discussion highlights the original contribution of this research by adding to the relatively small amount of literature that tests the connection between subjective perceptions of fear of crime and the built environment. Other studies have measured the perceptions of crime and fear of crime among different user groups using photographs. This study uses the written, descriptive scenario to probe perceptions of residents (i.e., the users of the residential space) to determine what factors in the residential environment lead them to feel safe and if they recognize defensible space cues that are hypothesized by scholars and practitioners to create a safer environment.

### CHAPTER 3

#### BACKGROUND AND REVIEW OF LITERATURE OF FEAR OF CRIME

Many people in today's society express anxiety and fear about crime and being victimized, despite the Uniform Crime Reports by the Federal Bureau of Investigation (FBI) indicating that crime has been steadily declining since 1994 (2004). Reducing and controlling fear of crime is an important public policy concern for police departments. Research has shown that 88% of police officers consider decreasing fear of crime an important police task (Vrij & Winkel 1991). Both government and the police have launched attempts to reduce the public's fear of crime. Police services have created numerous programs including education about victimization risks and protective behaviors, Neighborhood Watch, CPTED, and foot patrols (Hale, 1996).

This dissertation seeks to examine perceptions about the residential environment on fear of crime, crime, and defensible space and how these perceptions lead residents to evaluate a neighborhood as safe or unsafe. The goal is to relate the perceptions of fear to the environmental factors which are correlated with that fear. While individuals obviously possess different perceptions based on their individual reality, the argument made in this research is that there are some universal guidelines in evaluation which most people share.

### 3.1 Fear of Crime Background and Research

People respond to crime in different ways. Some may avoid certain places at particular times; purchase crime prevention equipment, form neighborhood groups against crime; modify daily routines and lifestyles; or generally withdraw from participation in urban life (Miethe, 1995).

The decade of the 1960s brought with it increased interest in the study of fear of crime in the United States and Britain, because it was a time of racial tension, rioting, and increasing urban violence (Zedner, 1997). Academic research and policy initiatives in the form of household crime surveys and victimization studies attempted to provide meaningful explanations for the level of crime victimization as well as information concerning citizens' beliefs and attitudes toward crime (Zedner, 1997). Scholars, such as Walkate (2001), Karmen (1990), and Harries (2000), argued that the increasing interest in crime victims has occurred largely because research has shown that victimized people and places represent a significant proportion of all crime. Historically, criminological research has focused on offender behavior, not on victim behavior or crime prevention. Another reason for the increased interest in studying fear of crime is the consequences of this fear. A certain degree of awareness and caution about crime is reasonable but, taken to extremes, it may have negative emotional effects on people, producing a significant loss in personal well-being. For example, Moore and Troganowicz (1988) reported that, in extreme situations, people invest time and money in defensive measures to reduce their

vulnerability, and they stay indoors and avoid activities more than they would like to do.

A broader negative influence with fear of crime is at the community level in that the potential exists to undermine quality of life. Fear may increase social divisions between rich and poor; that is, between those who can afford defensive or crime prevention methods and those who cannot. Deterioration of community life may also lead to a decline in society's ability to deal with crime (Cozens, 2000; Hale, 1996). Miethe (1995) addresses withdrawal from urban life by asserting that although crime has become a fact of life for many urban residents as a result of being a direct victim or knowing someone who has been, it does not necessarily mean that increased crime leads to greater fear. He argues that residents may become desensitized to crime because of its occurrence in their neighborhood and because they have accepted it as a part of urban life. Therefore these people do not completely withdraw from urban life, it just becomes part of everyday living. Further he considers the collective reaction to crime as coping with crime rather than total withdrawal, (p. 27) Coping occurs because many residents who lack financial resources for transportation, or to move to safer areas, crime is something they learn to live with. Changing routine activities and lifestyles are not available to many urban residents. This research assumed that there was some degree of involvement in urban life because the sample consisted of neighborhood association members, and by definition were participating by attending these meetings.



Seminal fear of crime studies concentrate on two main correlates of fear: first, the concept of vulnerability (physical, psychological, or economic) and, second, the level of crime experienced directly or through knowledge from neighbors' experiences or popular media coverage. Some unexpected results of many studies were that fear of crime was more prevalent than the actual crime levels and that those who had the highest levels of fear were often those least at risk, including women and the elderly (Hale, 1996). This point was also illuminated by Vrij and Winkel (1991) when they suggested little distinction has been made between locations that actually are criminal and therefore truly unsafe and locations that are perceived as unsafe but where in reality no crime occurs.

Despite growing research in the area of fear of crime, the results are often contradictory. Theoretical problems with the concept lie in defining and measuring fear of crime. Researchers have not reached consensus on a precise definition of fear of crime or how it should be measured (Hale, 1996; Koskela & Pain, 2000). In addition, Hale identified four issues central to fear of crime studies. First, criminological research focuses on ordinary or street crime, rather than corporate or white-collar crime. Second, researchers have been conceptualized fear as something that is merely present or absent in people. According to Fattah and Sacco (1989), this limits a detailed discussion of the ephemeral, transitional, and situational nature of fear. Third, over reliance on quantitative methods causes fear to be treated as a static and simple process. Fourth, most recent research considers fear of crime to be a social problem,

which can damage social and psychological stability. Fattah and Sacco maintained that it is important to distinguish between fear and caution; some residents may report being fearful when they mean being cautious in attempts to prevent victimization. In essence, the difference between fear and caution or concern needs to be illuminated in future research.

It has been well documented that measuring crime is problematic (Barkan 2005; Berg 1998; Box et al 1987; Hale 1996). Moreover, measuring fear of crime is equally as difficult. Cozens (2000) pointed out that most global measures of fear make no reference to specific crimes. An example of such a global measure would be: “How safe do you feel being alone in your area at night?” According to Ferraro and LaGrange (1987), questions similar to this are attempts to measure the likelihood of individual victimization rather than a more broad fear of crime. Garofalo (1979) claimed that crime and the area or neighborhood should be specified explicitly, even in questions like “Is there anywhere around here—that is within a mile—where you would be afraid to walk alone at night?” (p. 81). Questions that include activities such as “walking alone at night” have been criticized in terms of relevance, since most people rarely if ever engage in this activity. Questions such as “Do you or would you feel safe?” (p. 43) measure general crime concern or a worry about crime separate from crime risk (Furstenburg, 1971).

Garofalo and Laub (1978) and Lupton (1999) have posited that the aforementioned attempts at measuring fear of crime are in actuality getting at

fear of strangers instead. Research respondents have continually identified “threatening images” and the idea of the “unpredictable stranger” as the focus of their fear. This idea of the unpredictable stranger helps maintain symbolic boundaries and cultural identities Garofalo and Laub (1978).

As mentioned previously, the fear of crime is difficult to measure, because there are multiple and divergent meanings of the concept. As a result, researchers (Hale, 1996; Fattah & Sacco, 1989) have developed three broad categories of measures of fear of crime. First, cognitive measures involve the perceived probability of victimization and are concerned with judgments of risk and safety. Second, affective measures relate to worry or fear of victimization by specific crimes; in essence, fear reactions. Third, behavioral measures judge levels of fear by means of the actions of people. Behavioral measures indicate the difference in what respondents say they experience and what they actually do experience.

In addition to developing a thorough understanding of the problems in both measuring and defining the fear of crime concept, it also is necessary to explore the various models that attempt to explain fear of crime. The influence of image and signs of community investment are discussed next.

### *3.1.1 Image, Signs of Community Investment, and Fear of Crime*

This section discusses how the image of the physical and social environment relates to fear of crime. The literature on this topic relates to this

dissertation in that it has explored how perceptions of hypothetical neighborhoods influence questions on fear of crime. The goal is to see if respondents would feel fearful in neighborhoods with low levels of maintenance and signs of disorder.

A study of fear in public housing by Rohe and Burby (1988) revealed that the image of the housing is important. The negative reputation that housing is crime ridden has the potential to create fear itself. Studies in Britain determined that the lowest income and deprived regions in urban areas have the highest levels of fear of crime (Rohe & Burby, 1988). Smith and Hill (1991) stated that the fear is not within individual groups, but instead is characteristic of the neighborhood itself. Additional research suggested that people often view other neighborhoods as more dangerous and criminal regardless of the actual crime levels in their own neighborhood. Brantingham et al. (1977) found that many people thought that crime was committed by outsiders. This type of research highlights the importance of understanding different perceptions in order to comprehend resident behavior in neighborhoods.

Along these same lines, Merry (1981) conducted research on urban neighborhoods and argued that fear of crime expresses and legitimizes the fear of the strange and unknown. Essentially, cultural differences exacerbate feelings of danger. Furthermore, Merry stressed the importance and impact that increased population density and heterogeneity of urban life have on social ties leading to isolation and antisocial behavior. Encounters in urban environments

are encounters with strangers, both culturally and personally. Increased social diversity leads to greater social uncertainty. Fear, in this case, does not reflect a specific concern about crime, but rather a more general urban unease. Urban conditions, and not necessarily crime, are problematic and motivate concerns about personal safety Merry (1981). This argument runs counter to Jacobs (1961), mentioned earlier where she calls for mixed uses and consistent activity (eyes on the street) to prevent crime.

Living in an urban environment with strangers can eventually create conditions that foster fear. These conditions are not necessarily crimes, but rather *incivilities*, which refer to issues in an environment, such as panhandling, public drinking, abandoned houses, vacant lots, graffiti, vandalism, and broken windows. These conditions create fear of crime, because residents perceive them as signs of disorder or social disorganization and that reflects the erosion of the mechanisms of social control in the community. This in turn increases the sense of vulnerability to victimization. Fear may not be of specific offenses or crimes, but born of incivilities that occur much more frequently in urban neighborhoods than actual criminal events (Lewis & Salem, 1986).

A weakness of this incivilities thesis is that, in the absence of actual crime, it fails to explain an absence of fear in the presence of disorder and crime. Intuitively, it might be assumed that neighborhoods with high levels of disorder will have residents who report higher levels of fear. To the degree that environmental factors and fear of crime are related to weakening social ties, the

relationship may be mediated by residents' social support, their sense of living in a cohesive supportive community, and their integration into local social networks. In this case, the neighborhood may be a protective environment rather than a threat. The perception that social and emotional support is available may reduce fear of crime and make people feel less vulnerable to crime. Also, if fear of crime is related to the presence of physical disorder, community involvement and attachment may familiarize residents with such signs and consequently mute their impact. Integration into the community may further lead to more accurate mental maps of safe and dangerous places within the neighborhood. The accumulation of reliable information about neighborhoods helps to reduce the stress resulting from the threat of crime. Encouraging participation in community life may reduce fear indirectly, which has been one of the major arguments in support of the proliferation of Neighborhood Watch programs.

### 3.2 Environmental Characteristics and Fear of Crime

#### *3.2.1 Neighborhood Programs*

As this dissertation asserts, interest in crime prevention programs in recent years has led to a shift in thinking about crime. Before crime prevention theories like defensible space and CPTED were extensively tested, criminological theory focused on the motivations of offenders and thus was much more reactionary in nature. The crime prevention models focus on individual-level solutions such as target hardening and other self-protection initiatives and at the community level. Reducing fear of crime is considered a secondary goal of these

programs. Programs that were initiated to reduce actual crime in residential neighborhoods have had unexpected outcomes of reducing fear (S. Walkate, 2001; D. Rosenbaum, Lewis & Grant, 1986).

The cornerstone of community crime prevention programs is the active citizen; for instance, his or her involvement in Neighborhood Watch programs. These programs are also referred to as cooperative partnerships between police and the community to reduce crime and fear of crime. For the police, the main goal is to reduce crime; especially, burglaries that are committed because of soft targets or high opportunity. Police achieve this crime reduction goal in two ways: first, by the willingness of citizens to look out for and report suspicious incidents to deter potential offenders from operating in those areas; and, second, by improved arrest and conviction rates that result from the increased reporting and deplete the pool of offenders. If fear is related to neighborhood decline, signs of physical disorder or lack of maintenance, and absence of community cohesion, crime prevention programs address these problems by encouraging individuals to participate in group activities and inspiring community spirit (Walkate, 2001; Rosenbaum et al, 1986).

Despite these positive intentions for neighborhoods, there has been minimal scholarly research to support the hypotheses. The limitations of the neighborhood crime prevention programs are discussed next. Walkate has suggested that Neighborhood Watch programs may be unpopular in areas with high crime rates, because people who live there believe offenders are local and

view the threat as indefensible if it is internal to the community, rather than defensible if it is external to the community. In these circumstances, community crime prevention programs will not help build trust to reduce fear.

Rosenbaum (1986) cited evidence suggesting that, if given the opportunity to participate, residents in many high-crime neighborhoods choose not to participate. And, when they do participate, the social interaction occurring at meetings may lead to increases rather than decreases in fear of crime, because involvement may fuel sensitivity to risk and other crime-related perceptions or feelings. Mayhew et al. (1979) conducted an in-depth examination of neighborhood association participation and found that members were generally more fearful than nonmembers. Additionally, Rosenbaum (1986) claimed there is no hard core evidence to prove that Neighborhood Watch schemes increase residents' involvement in surveillance, social interaction, bystander intervention, and specific crime prevention activities.

### *3.2.2 Lighting*

CPTED theory posits that fear of crime might be reduced by modifying the built environment. The idea is that better illuminated streets and public places deter crime and reduce fear of crime. This presumes that good lighting must signal to a potential offender that he or she is more likely to be identified either by the victim, an observer, or the police. Fleming and Burrows (1986) asserted that two main issues are usually addressed in lighting research. First, the quantitative impact of lighting on crime explores whether upgrading lighting by given



amounts, or in certain defined areas, reduces the number of recorded crimes. One study of this type was performed by R.L. Jones (1975) in the attempt to determine the relationship between increased street lighting and nighttime crime in two police areas in New Orleans. Jones concluded that the effect of new high-intensity lights was negligible. Patterns of offenses before and after installation of the new lights were not significantly different. In contrast, another major study of this type by J.E. Hartley (1974) looked at the effect of high-intensity street lighting installed in four high crime areas in the District of Columbia. Here, a 30 percent reduction in crime was experienced over the following year. Hartley reported that, based on this impressive finding, other lighting installations were completed and resulted in a 54 percent reduction in night crimes over the next 2 years.

A comprehensive study was carried out by R. Wright, M. Heilweil, P. Pelletier and K. Dickinson after a major relighting program in Kansas City between 1970 and 1973. It showed that robberies and assaults were significantly reduced by the new lighting, although property crimes were unaffected. These researchers attempt to explain the extent of crime displacement, and concluded that almost a quarter of the prevented robberies were displaced to blocks not affected by the relighting program.

The second type of lighting research, which refers to qualitative assessments of people's perceptions of the changes in their environments, has produced more promising results (Fleming & Burrows, 1986). Factors, such as increased lighting and lighting uniformity, the general issue of physical planning

of open spaces, and proper design have been found to decrease fear of crime (J.M. Tien, V.F. O'Donnell, A. Barnett, & P.B. Mirchandani, 1994).

Most research focusing on the positive effect of improved street lighting on fear of crime employs a pre- and post-test design that measures perceptions before lighting has been added or improved and again after the modification. Kate Painter (1988, 1994) conducted numerous studies in London and frequently reported dramatic reductions in criminal victimization following the installation of improved street lighting.

S. Atkins, S. Husain and A. Storey (1986) performed a study which was the largest in scope to that date. Many previous street lighting projects had involved relighting one or two streets or dark alleys, but the Atkins et al. research concerned relighting the entire area of Wandsworth, England, with 3,500 new lights. These authors collected detailed data on crimes reported to police and monitored them for 12 months before and after the relighting. A fourfold increase in intensity of street lighting was achieved, yet no evidence supported the hypothesis that improved street reduced crime. There also was minimal evidence of general fear reduction, although the findings pointed to an increase in perceived safety of women walking alone after dark in the experimental group.

Vrij and Winkel (1991) found that perceived unsafe locations are quiet, deserted, and poorly lit. As a result, these scholars conducted an experiment to measure the impact of improved street lighting on fear, perceived victimization risk, and perceived likelihood that a stranger would intervene if a crime was

committed. The first phase of their study included collecting inventory data on the locations that respondents considered unsafe in their city. These findings led Vrij and Winkel to choose the location that was defined as the most unsafe by residents. The second part of this research involved uniformed police officers collecting data from users of this most unsafe location. Their findings suggested a positive relationship between increasing the amount of street lighting and fear of crime. Fear of crime was reduced, victimization risks were considered smaller, and intervention from strangers was more likely to be expected. Vrij and Winkel argued that these results correspond best with Jacobs' (1961) work on the built environment where she emphasized that quiet, deserted locations are perceived as unsafe, but become safer when used more intensively.

Nair, Ditton, and Phillips (1993) attempted to address the limitations of previous lighting research by allowing a longer follow time after the treatment was received, as well as controlling for the effect of interviewing at different times of the year. Their findings were somewhat surprising, because street lighting did not have a significant impact on feelings of safety, even when tied with several other environmental improvements. Nair et al. concluded that fear of crime is a complex phenomenon that is extremely difficult to measure, and implementation of environmental modifications to reduce fear may actually undermine feelings of safety and highlight dangers. The most valuable information to come from this research was that respondents called for greater consultation before environmental improvements are undertaken. Several of those interviewed said they

rarely, if ever, used the routes that were relit and the net effect was negligible in their opinion. The respondents remarked that they would have preferred to see environmental improvements on other, more heavily used, areas. This supports the hypothesis of this dissertation as exploring perceptions of residents in their neighborhoods in the effort to determine what is most important to them will increase the effectiveness of any modifications that are completed. It is all about giving the users of the space what they want or perceive that they need.

### 3.3 Individual Characteristics and Fear of Crime

#### *3.3.1 Gender*

Much of the fear of crime literature has indicated that some groups are more vulnerable to fear of crime levels than others. People who feel unable to protect themselves, either because they lack the physical ability to get away or ward off attackers, they cannot afford to protect their homes, or it would take them longer to recover from material or physical injuries, might be expected to fear crime more than others. Fear of crime researchers place women, the elderly, and the poor in this group (Hale, 1996). In addition to gender, age and socioeconomic status, this research found that marital status and education were also significant predictors of fear. Let us begin with a discussion of the gender variable.

Numerous studies have attempted to ascertain why women continue to express higher levels of fear of crime than men, especially when victimization surveys and other official crime statistics indicate that they are less likely to be

victimized. Hale (1996) explained that victimization of women is probably underestimated in that official statistics and victim surveys do not measure the full depth and breadth of victimization, their fear is socially overconstructed, and there is a difference between perceived risk and fear and heightened perceptions of vulnerability. Stanko (1988, 1995) argued that women are more fearful, because of the wide range of hidden violence against women (e.g., domestic violence and sexual assault, threats of violence and sexual harassment), which do not appear in official statistics or victim surveys. In effect, Stanko suggested that women are more afraid, because they are more likely to confront situations which threaten them. Conversely, feminist scholars have conducted research showing that men generally hold an irrationally low level of fear, despite their higher degree of likelihood of victimization. This irrationality has been attributed to socialization processes that teach boys to be careful about expressing feelings of vulnerability (J. Goodey, 1997; Walkate, 2001).

### *3.3.2 Age*

Age is the second factor that significantly influences fear of crime and vulnerability. Fear of crime and its impact on quality of life of the elderly has been well documented in the research. The general consensus has been that, as people grow older, they become more fearful. A small number of studies have found this relationship to be small or dependent on other factors, such as low income, living alone, and poor health. One of the most in-depth examinations of fear of crime among the elderly was conducted by Fattah and Sacco (1989).

Their results suggested that the fear expressed by older people is greater than that reflected by people in other age groups, while their objective risk of victimization is less. Some of the explanations for this mismatch are explained below.

Fear among the elderly varies across different environmental conditions, being higher where there is greater risk and weaker or nonexistent where risk is less. Researchers have determined that the effect of age is strongest in inner cities and weakest in small towns and rural areas (Baumer, 1985; Clemente & Kleiman, 1976; Lebowitz, 1975). Older people have also been found to be more fearful than younger people in low-income areas, but less fearful in high-income areas.

### *3.3.3. Socioeconomic Status*

In addition to gender, social class and socioeconomic factors have been utilized in developing an understanding of fear of crime. S. J. Smith (1987), Miethe and Lee (1984) all found fear of crime, in particular, property crime, to be inversely related to income. People in lower socioeconomic groups may be less able to protect themselves or their property or to avoid situations which might produce fear. In addition, the shortage of material and social resources may mean people are less able to cope with victimization at an individual level and, at a community level, not have the contacts, organizational ability, and political networks available to higher status neighborhoods. This increases the sense of loss of control and, possibly, fear of crime (Hale, 1996).

### *3.3.4 Race and Ethnicity*

The available research has generally supported the premise of a relationship between racial composition of place and fear of crime. Studies involving residential proximity of Blacks and Whites also have indicated that fear in White people increases when Blacks are nearby (Chircos, Hogan, & Gertz, 1997; Skogan, 1995). However, Ward, LaGory, and Sherman (1986) reported alternate findings: Among predominately White elderly respondents, racial composition of the census tract was unrelated to fear except in those with health or physical mastery problems.

Fear can produce behavior that is indistinguishable from racism. It is not racism that makes whites uneasy about blacks moving into their neighborhoods, it is fear. It is not racism that leads white parents to pull their children out of schools with man black students, it is fear. Fear of crime, of drugs, gangs and violence. (James Q. Wilson, quoted in Chiricos, Hogan, & Gertz, 1997, p. 108)

The effect of the respondents' race in relation to fear of crime was studied by Liska, Lawrence, and Sanchiroco (1982). These authors found that Blacks and Whites reported significantly higher fear when living in cities with a higher percentage of non-Whites; the relationship was greatly diminished for Whites, but not for Blacks, when controls were introduced for rates of interracial robbery. Moeller (1989) also reported that living in all Black or mostly Black neighborhoods elevated fear for White and non-White residents. She noted the effect was especially acute for Whites and concluded that White respondents living in racially mixed neighborhoods were the most likely to be fearful.

Covington and Taylor (1990) determined that people living in predominately Black Baltimore neighborhoods were more fearful than those living in other neighborhoods in that city. This effect was independent of direct or indirect crime victimization experience. These researchers used a measure of disparity between an individual's race and the racial mix of his or her neighborhood, finding that those whose racial identity (whether Black or White) diverged more from neighborhood racial composition were more fearful.

### *3.3.5 Previous Crime Experience*

“The victimization perspective is based on the principle that fear of crime within a community is caused by the level of criminal activity or by what people hear about activity—either from conversations with others or from the mass media” (T. Bennett, 1990). This section relates fear of crime to people's experience with crime. Encounters may be either direct (having been a crime victim themselves) or indirect (knowing others who have been a victim). Such a discussion is pertinent to this dissertation, because it measures previous crime experience by asking respondents if they have been the victim of several specific crimes in the past year. The survey instrument also asks if respondents know anyone close to them who has been the victim of several specific crimes in the past year. These two questions serve as control variables for actual crime in residents' neighborhoods.

Miethe and Lee (1984) used a crime-specific victimization measure and ascertained that direct experience of victimization is significant for fear of violent



crime, but not for fear of property crime. In addition, previous victimization experience did not affect fear of mugging or assault, but people who had been burglarized were more fearful of future burglary than nonvictims. Belyea and Zingraff (1988) and Smith and Hill (1991) used measures combining personal victimization and acquaintance victimization to ask about crime-specific victimization experiences and weighted responses according to seriousness. Their findings suggested that property victimization was significantly related to fear, but personal victimization was not.

Agnew (1985) indicated that, to help them cope with their experiences of victimization, victims of crime use techniques of neutralization similar to those used by criminals to justify their offenses.. These techniques include: denial of injury, either physical or emotional (I wasn't hurt); denial of vulnerability (I know how to prevent future victimizations); acceptance of responsibility (I'm at least partly to blame for the crime); belief in a just world (the offenders will get what they deserve); appeal to higher motives (I was victimized because I was protecting my friend). Agnew (1985) believed that the use of these techniques depends on the nature of the victimization, characteristics of the individual, the degree of social support, and the community climate.

The relationship between fear of crime and acquaintance crime experience for the purpose of this dissertation means having a close personal acquaintance who has been the victim of specific crimes in the past year. The fear of crime literature often has yielded more significant relationships between

indirect crime experiences and fear than the direct experiences mentioned above. Hearing of victimization from a friend or neighbor allows a person to make comparisons between himself or herself and the victim, which might reinforce his or her sense of vulnerability (Hale, 1996). Tyler (1980) and Box, Hale, and Andrews (1987) found that, when crimes were heard about from others, fear of crime significantly increased, but direct crime experience did not significantly increase fear of crime. Knowing someone who has been victimized in a local area or learning about criminal victimization from the local media appears to have a more immediate impact than personal victimization or knowledge of victimization. Hale (1996) maintained that knowledge of local victims who share similar characteristics and live in similar neighborhoods will likely increase levels of fear. A summary of this chapter about the background and review of literature of fear of crime follows.

### 3.4 Summary

This chapter has reviewed the literature relevant to perceptions of the residential environment and fear of crime. Fear of crime is a serious and distinct subdiscipline within criminology that may be explored separate from crime itself. The conclusions drawn from this chapter are discussed below.

First, fear of crime may have severe and detrimental effects on individuals and communities. When fear is taken to extremes, quality of life in neighborhoods diminishes and people may develop a fortress mentality that reduces informal social control, because it relies too heavily on external devices and the

police for protection. This loss of informal control and surveillance may lead to increased risk of victimization. Second, an individual's sense of vulnerability is related to individual factors, such as gender, age, and race. Third, knowing someone who has been the victim of a crime appears to be more important to fear of crime than personal victimization. And, finally, fear of crime is related to perceptions of the physical environment. Neighborhoods with a lack of maintenance, or having broken windows, lead residents to perceive the neighborhoods as unsafe and deficient in social control.

Residents of neighborhoods with weak social ties may feel isolated and report higher fear of crime. Because fear of crime is such a complex topic, with numerous dimensions, it will take the cooperation of multiple groups in the community to address it. Intergroup collaboration between neighborhood groups, the police, urban planners, code enforcers, architects, and so forth can provide the expertise necessary to address specific problems in a neighborhood. Identifying what makes residents in different neighborhoods more fearful is a first step in addressing those fears. Chapter 4 describes the methodology used for this dissertation, including the survey instrument, factor analysis, and cross-tabulations, to illustrate some descriptive findings of the analysis in order to understand the composition of this sample.

## CHAPTER 4

### METHODOLOGY

This research attempted to explain the variation in the perceptions of defensible space and fear of crime across neighborhoods. It focused on residents' definitions of defensible space and the factors that caused them to feel fearful or not in their neighborhoods. Ultimately, it sought to determine which defensible space variables correlated with levels of fear of crime and whether those variables differed across neighborhoods. To that end, 56 residents from three different neighborhood associations in Fort Worth, Texas, were interviewed regarding their perceived safety and the defensible space characteristics of their neighborhoods.

The task of measuring perception is complicated in that it is an experienced-based, individual concept, which suggests that subjective data would be useful in addressing this difficulty (Cozens, 2000). Measuring residents' perceptions of fear of crime and defensible space through the manipulation of scenario variables provided the qualitative nature of the study. The measures of previous crime experience and fear of crime based on residents' own neighborhoods, along with the demographic variables, provided the quantitative part of this research.

This research design was a pre-experimental, posttest only, design. Pre-experimental designs follow basic experimental steps, but do not include a control group. In other words, a single group is often studied, but no comparison between an equivalent non-treatment group is made. Berg (1998) and Dey (1993) have referred to this type of design as a one shot design, because subjects are presented with some type of treatment (in this case, the neighborhood scenarios) and then the outcome measure is applied, such as the fear of crime and defensible space scales. Like all experimental designs, the goal is to determine if the treatment has any effect on the outcome.

This purpose of this chapter was to explain how the research was accomplished; that is, what the data consisted of and how data was collected and organized. It described the instruments and procedures used for this research, and the operationalization of each variable. A description of the instruments and procedures used is first.

#### 4.1 Instruments and Procedures

The city of Fort Worth provided a list of neighborhood associations on their Neighborhood Office database (City of Fort Worth, 2006), which included contact information for officers and members of these associations. For sampling purposes, the database was organized by zip code and at least one neighborhood association was contacted per zip code. A total of 40 neighborhood associations were contacted via an e-mail that presented a brief

overview of the research, requested permission to attend the next meeting, and asked for authorization to solicit residents to participate in the survey. The e-mails were sent to presidents, vice presidents, and secretaries of the associations to increase the chances of response. Of the 40 originally contacted, 10 associations responded, but only 3 of those 10 met the general requirements for participation; namely, (a) they had a meeting scheduled in April 2006, and (b) they agreed to let me attend their meeting and distribute the survey. Members of the respective neighborhood associations who were present at the meeting I attended and were willing to participate served as the respondents of the survey. From these three meetings, the sample size yielded 56 respondents. Based on the  $2 \times 2 \times 2$  design of this study, it was determined at the outset that a minimum of 15 cases per cell would be required, which equaled a minimum of 42 subjects.

The respondents received an informational sheet (see Appendix C) explaining the issues related to confidentiality. They were not asked to sign informed consents, because no items on the survey identified the subjects and no sensitive information was collected. The Institutional Review Board at the University of Texas at Arlington exempted this study from signed informed consents because it deemed the material of minimal harm.

A quasi-experimental design was used to collect this research data. Part 1 of the instrument required respondents to answer questions pertaining to descriptive scenarios of hypothetical neighborhoods (see Appendix A). This part of the instrument used a  $2 \times 2 \times 2$  design that manipulated the presence or

absence of lighting, presence or absence of maintenance of homes and grounds, and presence or absence of signs of community investment. The randomization of the scenarios was as follows. There were eight different scenarios, including the base (see Appendix A). Every survey packet included questions based on the base scenario. The rest of the seven scenarios were randomly assigned to survey packets. The seven scenarios were placed in seven piles and compiled in packets, where each packet contained two different scenarios. The first packet contained scenarios 2 and 3; then, subsequently, scenarios 3 and 4, 4 and 5, 5 and 6, 6 and 7, 7 and 1. Next, packets were compiled so the order of the scenarios was also random; scenarios 3 and 2, 4 and 3, 5 and 4, and so on until all permutations were completed and all packets were completely random. I took the necessary number of packets to each particular meeting with the randomization already done.

The actual research was carried out as follows. First, a base scenario describing a middle-class neighborhood was read to all subjects. The scenarios probed the impact of adequate lighting, adequate maintenance of homes and surrounding areas, and the presence of signs of community involvement on perceptions of fear of crime and defensible space. Second, subjects answered eight questions relating to the base scenario, which measured the underlying constructs of defensible space and fear of crime. Third, subjects read a second random scenario on their own and at their own pace, then answered the same eight questions based on their perceptions of the second scenario. Fourth,

subjects read a third scenario on their own and at their own pace, and answered the same eight questions based on their perceptions of that scenario.

After completing the scenario section of the survey, subjects were instructed to forget about the hypothetical neighborhoods and answer the remaining questions based on day-to-day life in their own neighborhood. The rest of the survey probed issues of previous crime experience of the subjects themselves and their acquaintances, how often they worried about certain criminal acts, how likely they thought it was that various criminal acts would occur in their neighborhood in the next year, and, finally, general demographic questions. An explanation of the operationalization of variables used in this research will be articulated next.

#### 4.2 Neighborhood Characteristics

Residential environments have the potential to impact residents' attitudes and behaviors that will ensure security and constrain antisocial behavior (Newman, 1972). Therefore, it is crucial to study residential environments to understand how they influence people's perceptions and attitudes.

Neighborhood characteristics were measured and manipulated using the scenarios to ascertain the perceptions of importance of lighting, maintenance, and signs. This research sought to determine which factors (lighting, maintenance, and signs) influenced a respondent to perceive a neighborhood as defensible or possessing of traits that made him or her feel fearful.



United States Census Bureau (2000) data was used to identify important neighborhood characteristics by zip code. The Central Meadowbrook Neighborhood Association provided the largest number of respondents and is composed of two zip codes (76103 and 76112). Table 4.1 compares demographic information for each neighborhood area by zip code as well as national census data on demographic information for comparison purposes.

**Table 4.1. 2000 Census Data by Zip Code**

<b>Demographics</b>	<b>Central Meadowbrook</b>		<b>Alamo Heights</b>	<b>River Trails</b>	<b>U.S.</b>
Zip code	76103	76112	76107	76118	—
Median age	33	33	36	35	35
<b>Gender</b>					
Male	(33%)	(27%)	(11%)	(64%)	(49%)
Female	(67%)	(73%)	(89%)	(36%)	(50%)
<b>Race/Ethnicity</b>					
Non-Hispanic White	(88%)	(80%)	(100%)	(91%)	(69%)
White Hispanic	(0%)	(7%)	(0%)	(0%)	(13%)
Black/African American	(6%)	(7%)	(0%)	(9%)	(12%)
Asian	(6%)	(6%)	(0%)	(0%)	(4%)
<b>Housing Status</b>					
Owner-occupied housing	(50%)	(60%)	(55%)	(74%)	(66%)
Renter-occupied Housing	(50%)	(40%)	(45%)	(26%)	(34%)
<b>Education</b>					
High school graduate	(17%)	(0%)	(12%)	(9%)	(80%)
Some College	(4%)	(40%)	(44%)	(9%)	-
2 Year Degree	(0%)	(7%)	(11%)	(0%)	-
4 Year Degree	(28%)	(40%)	(11%)	(64%)	(24%)
Advanced Degree	(11%)	(13%)	(22%)	(18%)	-
<b>Income</b>					
Median household income	\$34,300	\$33,019	\$35,419	\$50,372	\$41,994

The 2000 census indicated that 75 percent of the U.S. population was white. For the neighborhoods surveyed for this research, River Trails exceeded that percentage with 90 percent of its residents being white, as did Central Meadowbrook with 89 and 80 percent for all zip codes; as well as Alamo Heights with 100 percent. While 12 percent of the national population was Black or African American, Central Meadowbrook residents consisted of 5.6 and 6.7 percent respectively, while only 9 percent of River Trails residents were of that race/ethnicity.

This indicated that Fort Worth neighborhoods provided a diverse landscape for measuring the perceptions of different racial and ethnic groups. River Trails had the highest percentages of owner occupied housing at 74 percent; national average was 66 percent, while Central Meadowbrook and Alamo Heights had averages below that. Since renters were a significant proportion of residents in these neighborhoods, it may be prudent to measure their perceptions of crime, fear of crime and defensible space as well. The subsequent section discusses the demographic characteristics of this specific sample.

#### *4.2.1 Demographic Variables*

General demographic information was collected and measured in this study in order to understand the characteristics of the respondents. Year born (age), number of dependent children, current zip code, and length of time at residence were open-ended questions, while race/ethnicity, marital status, education, household income, and living situation were multiple choice responses with various categories for respondents to select. Gender was the only original dichotomous variable in the demographic section. However, after the exploratory analysis indicated that there were not enough cases in most of the variable categories, all of the demographic variables were recoded into dummy variables of 0 and 1.

#### *4.2.2 Demographic Characteristics of Respondents*

The current sample includes 56 residents from three different Fort Worth neighborhoods (Table 4.2). The majority of the respondents were female (64%), White (88%), married (62%), and homeowners (93%). By design, this research sought to measure the perceptions of Fort Worth residents and, through collection of data from members of neighborhood associations, most likely led to the high numbers of married, white, homeowners rather than a more representative sample of single renters and other race/ethnicities. Based on the original 5-level scale, the mode for educational level is 3. The distribution for level of education is close to normal with most responses clustering in the center of the scale (the some college categories). The smallest percentages are located in the tails (9%

have a high school diploma and 15% have an advanced degree). Sixty-three percent of these respondents have an annual household income in the range of \$30,000 to \$90,000. Fourteen percent reported having an annual household income of less than \$30,000, and only 4% said their household income was greater than \$90,000 per year. The average length of time at the residence for all respondents was 20 years. The average age of respondents was 59. Whites were more likely to live at their residences longer than all other races (-.27) and age was correlated with length of time at current residence (.45\*\*), with older residents having lived at their residences longer than younger residents.

#### *4.2.3 Cross-Tabulations of Demographics by Neighborhood Association*

A cross-tabulations procedure analyzing demographic traits by neighborhood association provides more detailed information on the demographic traits of the respondents. Table 4.3 indicates that thirty-four people from the Central Meadowbrook Neighborhood Association completed the survey. This group provided the largest percentage of respondents (N=34, 63%), followed by Alamo Heights (N=9, 20%) and River Trails (N=11, 17%). Central Meadowbrook and Alamo Heights each had more women who answered the survey than men, while River Trails had almost double the number of men participating as women.

As mentioned previously, a large proportion of the respondents were White, and thus the race/ethnicity categories were recoded from the original six down to Whites and all others. Specifically, Whites made up 88 percent of all respondents.

**Table 4.2. Demographics of Respondents**

	<b>Frequency</b>	<b>Percent (%)</b>
<b>Gender</b>		
Male	20	36
Female	36	64
Total	56	100
<b>Race</b>		
White	49	88
Non-Hispanic White	1	2
White Hispanic	2	4
African American	3	5
Asian	1	2
Total	56	100
<b>Education</b>		
High school diploma	5	9
Some college	20	36
Two-year degree	2	4
Four-year degree	20	36
Advanced degree	8	15
Total	55	98
<b>Income</b>		
< \$30k	8	14
\$30-60k	17	30
\$60-90k	18	32
\$90-120k	8	14
\$120-150k	1	2
>150k	1	2
Total	53	94

**Table 4.3 Cross-Tabulations by Neighborhood Association**

	<b>Total</b>	<b>Central Meadowbrook</b>	<b>River Trails</b>	<b>Alamo Heights</b>
<b>Total</b>	54 (96%)	34 (63%)	9 (17%)	11 (20%)
<b>Gender</b>				
Male	19 (35%)	11 (32%)	7 (64%)	1 (11%)
Female	35 (65%)	23 (68%)	4 (36%)	8 (89%)
<b>Age</b>				
57–86	30 (56%)	23 (68%)	2 (18%)	5 (56%)
37–56	19 (35%)	9 (27%)	8 (73%)	2 (22%)
24–36	5 (9%)	2 (6%)	1 (9%)	2 (22%)
<b>Marital status</b>				
Married	35 (65%)	20 (59%)	9 (82%)	6 (67%)
All others (single, separated, divorced, widowed, live-in partner)	19 (35%)	14 (41%)	2 (18%)	3 (33%)
<b>Time at residence</b>				
	54			
1–25 years	37 (69%)	21 (62%)	11 (100%)	5 (56%)
26–50 years	17 (32%)	13 (38%)	0 (0%)	4 (44%)

The majority of respondents reported being married (63 percent). The second largest category of marital status was single (16 percent), followed by widowed (11 percent) and divorced (9 percent). The sizeable proportion of respondents who reported being widowed is probably due to the large number of older residents in attendance at the Central Meadowbrook meeting. The majority (N=57) of respondents were between age 57 and 86. Therefore this sample is comprised of primarily older residents either retirement age or approaching retirement age. Based on the literature reviewed previously, these respondents should report high levels of fear as age is consistently related to increases in reported fear. Thirty-four percent were between age 37 and 56, and only 9 percent were age 24 to 36.

Length of time at residence was recoded into two categories: 1 to 25 years and 26 to 50 years, based on the range of responses given. Almost 70 percent of respondents had lived at their current residence 1 to 25 years. Substantial percentages of residents from both Central Meadowbrook and Alamo Heights were people who had resided in their current homes for more than twenty-five years. It was hypothesized that the longer a person had lived in a place, the more of a stake he or she has in the place or a stronger sense of territoriality; thus, he or she would be more likely to take action in reducing crime and fear of crime.

Residents with a strong sense of ownership may be more actively involved in their neighborhood associations and in crime prevention efforts such as Neighborhood Watch and Code Blue. Both of these programs are supported by local police departments and encourage residents to take a more active approach in policing their neighborhoods and reporting suspicious behavior, thereby aiding the police in reducing crime (Fleissner and Heinzelmann 1996).

#### 4.3. Operationalization of Variables

##### *4.3.1 Dependent Variable: Fear of Crime*

Although the subjective feeling of fear may not accurately reflect actual crime, it has significant harmful effects on individuals and communities. It has been found to limit activities and territory, heighten stress, make people feel like prisoners in their homes and neighborhoods, disrupt neighborhood cohesion, and, in doing so, may actually increase crime (Hale, 1996; Newman, 1972;

Taylor, 1988; Wilson & Kelling, 1982). Fear of crime causes people to drastically change their lifestyles in the following ways: staying in at night, avoiding strangers, moving to perceived safer neighborhoods, and implementing crime prevention techniques (Newman 1973).

Miethe (1995) argued that the magnitude of fear of crime depends largely on how it is measured. His research on fear of crime (1995) suggested that a majority of U.S. adults were fearful of walking alone in their neighborhood at night. His research also argued that controlling for crime rates and media coverage of crime, the proportion of residents in national surveys who report being afraid is consistent over time (34 percent in 1965, 42 percent in 1972, 45 percent in 1981, and 43 percent in 1993). Miethe (1995), LaGrange, Ferraro & Supanic,(1992) have questioned whether measures of fear accurately reflect the concept or perceived vulnerability to or risk with respect to crime or the dangerousness of one's neighborhood.

In addition to measuring magnitude of fear, the nature of fear for particular offenses should provide an interesting component of fear. Levels of fear for particular offenses have remained fairly constant from the early 1980s and mid 1990s. Ferraro and LaGrange (1987) found that people feared crimes like burglary more than assault and murder. Crimes that caused the greatest fear were those perceived as the most serious and perceived as highly likely to occur. Using this framework, people are less fearful of personal assault and murder than residential burglary because:



1. Violent crimes are not considered quite as serious as burglary.
2. Residential burglary is perceived more likely to occur than physical assault or murder.

Because fear is a difficult concept to measure, this research, utilizes four measures to operationalize fear of crime. The first measure is based on the hypothetical scenarios and uses a linear numeric scale for respondents' level of agreement ranging from 1 (*strongly agree*) to 6 (*strongly disagree*). This question asked respondents if they would fear for their personal safety in each of the three scenarios. (See section 1 of the survey in Appendix B to view the actual survey instrument).

The second measure of fear of crime is a categorical variable that asks respondents if they would be afraid to walk in areas around their neighborhood at night, and if they felt safe and secure in their homes. (Appendix B.)

The third dimension of fear asked subjects to indicate how often they worry about certain crimes being committed against themselves, their property, and their children in their own neighborhood. The specific crimes probed were property crimes, violent crimes against the respondents and their children, and gang affiliation and drug abuse by their children. (Appendix B.)

The fourth and final dimension asked how likely subjects thought it was that, within the next year, crimes would be committed against subjects in their neighborhood. The crimes included three property crimes and one violent crime. (Appendix B.)

#### *4.3.2 Descriptive Statistics and Fear of Crime*

This section briefly discusses the descriptive statistics used to explore the fear of crime concept. The nominal or categorical variables that asked respondents if they had personally been the victim of specific crimes in the past year, or if they know someone close to them who has been the victim of a crime in the past year (burglary, robbery, assault, theft, vandalism). These variables were dummy coded to represent those who had been victims and those who had not. The frequencies indicated that 75 percent of the respondents report no crime experience or victimization in the past year. The highest proportions of crime victimization were for theft (10 percent) and vandalism (8 percent). Less than 2 percent of these respondents had been the victim of a burglary, robbery or assault.

In terms of knowing someone close to them who have been a crime victim in the past year, 20 percent (N=9) reported knowing someone who had been the victim of a burglary. Ten percent knew someone who had been assaulted. The highest percentages of acquaintance crime experience were for theft (24 percent) and vandalism (18 percent). Half of this sample reported knowing someone who had been a crime victim in the past year.

Seventy-three percent of the sample reported feeling fearful walking alone at night within one mile of their home. Conversely, 93 percent said they felt safe and secure in their own homes. This could be because they view their homes as defensible and have taken steps to prevent crime from occurring there.

The measure of how often respondents worried about crimes such as assault of family members, vandalism of property, burglary while at home and away, child being robbed by other youths, child being attacked, child joining a gang, and child getting addicted to drugs, suggested that the people in this sample hardly ever worry about these crimes. For almost every crime listed, half consistently report never worrying. Respondents worried the most about burglary while no one is home (30 percent). They worried about burglary while someone is home, (24 percent). Seventy percent of these respondents did not have dependent children living with them, and therefore did not worry about crimes regarding their children.

The scale variables discussed in this section asked respondents how likely it would be for the following crimes to occur in their neighborhood in the next year (property vandalized, assaulted, robbed or mugged, car stolen, burglary while home, burglary while away). The majority of these respondents reported it being unlikely that any of these crimes would occur. Approximately 42 percent viewed it as unlikely that their property would be vandalized. Over seventy-five percent doubted they would be assaulted, while 25 percent expected their car to be stolen from their driveways. Twenty-three percent expected a burglary to occur while someone was home and the largest percentage, (46 percent) expected their home to be burglarized while no one was home. These findings support the Miethe (1995) literature discussed previously in this chapter. These respondents feared burglary more than other

violent crimes, which may mean that they perceived burglary as more serious and perceived it is more likely to occur than the other crimes. The next section discusses the defensible space variable.

#### *4.3.3 Intervening Variable: Defensible Space*

The connection between fear of crime and defensible space theory is well documented in the literature. Newman's (1973) defensible space theory isolated four categories of physical design ingredients, which independently and in concert are thought to significantly contribute to the creation of secure environments and to reduce fear of crime in neighborhoods: (a) territorial influence; (b) natural surveillance; (c) geographical juxtaposition; and (d) perception of the vulnerability, isolation, and stigma.

##### *4.3.2.1 Territorial Reinforcement*

Similar to defensible space theory, CPTED theory explains territorial reinforcement as promoting social control and reducing fear of crime through increased definitions of space and improved proprietary concern (Crowe, 1991; Jeffery, 1971; Newman, 1972). An environment designed to clearly delineate private space accomplishes two things. First, it creates a sense of ownership. Owners have a vested interest and are more likely to challenge intruders or report them to the police. Second, the sense of owned space creates an environment where "strangers" or intruders stand out and are more easily identified. By using signs, lighting, and landscape to express ownership and define space as suggested in this dissertation, territorial reinforcement occurs

(Crowe 1991). As a result, residents have a greater sense of control over crime in their neighborhoods and fear of crime is reduced.

The survey measured the concept of territorial influence on a linear numeric scale of 1 (*strongly agree*) to 6 (*strongly disagree*), where respondents were asked the extent of their agreement about whether residents seemed proud of their property and whether they thought residents would intervene during the commission of a crime.

#### 4.3.2.2 *Natural Surveillance*

For this dissertation, natural surveillance was manipulated in each of the scenarios when it referred to adequate or inadequate lighting and windows and blinds that were open. Natural surveillance limits the opportunity for crime by increasing the perception that people can be seen. This occurs by designing the placement of physical features, activities, and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of private and public space, which is hypothesized to reduce fear of crime in neighborhoods. Consequently, potential offenders likely will feel increased scrutiny and limitations on their escape routes (Fleming and Burrows 1986).

Practical ways to create natural surveillance in residential neighborhoods are to place windows overlooking sidewalks and streets, leave window shades open, and create landscape designs that provide surveillance, especially in proximity to designated points of entry and opportunistic points of entry. Use the shortest, least sight-limiting, fences appropriate for the situation. When creating

lighting design, avoid poorly placed lights that create blind spots. Ensure that potential problem areas, such as pathways, are well lit. Avoid too bright security lighting that produces a blinding glare and or deep shadows, hindering the view for potential observers. (Eyes adapt to night lighting and have trouble adjusting to severe lighting disparities.) Place lighting along pathways and other pedestrian use areas at proper heights for illuminating the faces of people in the space so that it is easier to identify the faces of potential attackers (Crowe, 2000; Gardner, 1995; Jeffery, 1973; Newman, 1972).

#### *4.3.2.3 Image and Perception*

The concepts of territoriality and surveillance have been extensively studied and evaluated. And, although this dissertation addressed those concepts as well, it also focused on the fourth concept, which has received little attention in scholarly research: the image and perception of residential housing and how it influences behaviors and attitudes on feelings of security or fear of crime. The third concept of geographical juxtaposition was outside the scope of this study and was not measured or addressed. Bearing in mind the fourth concept, this research attempts to answer the question: Do neighborhoods with adequate lighting, maintenance, and signs of community involvement promote greater feelings of safety? In other words, do people perceive neighborhoods with these characteristics as more defensible and safer than neighborhoods without these characteristics?

This fourth concept of image (perceptions of peculiarity, vulnerability, isolation, and stigma) was measured by asking respondents the extent of their agreement or disagreement from 1 (*strongly agree*) to 6 (*strongly disagree*) with statements such as these: if they perceived that residents of the hypothetical neighborhood would move if they could, if they perceived the neighborhood as a good place to raise children, and if respondents themselves would like to live in this neighborhood.

#### *4.3.2.4 Crime/Deviancy*

Perceptions of crime and deviance in the hypothetical neighborhoods was probed by asking respondents if they perceived crimes, such as burglary and incidents of vandalism, to be common in the hypothetical neighborhood.

#### *4.3.4 Independent Variables*

##### *4.3.4.1 Lighting*

Lighting can influence an individual's feelings about his or her environment from an aesthetic as well as a safety standpoint. A bright, cheerful environment is much more pleasing than one that appears dark and lifeless. A resident's ability to feel good about his or her environment is important in developing a sense of pride and ownership (Brantingham, 1972; R. A. Gardner, 1995; C. Murray, 1994).

Good lighting is one of the most effective crime deterrents. When used properly, light discourages criminal activity, enhances natural surveillance opportunities, and reduces fear. The type and quantity of light required will vary from application to application, but the goal remains the same in all cases. To the

degree possible, a constant level of light providing reasonably good visibility should be maintained at night. The absolute level of light, provided it meets minimum standards, is less critical than the evenness of the light. Bright spots and shadows should be avoided. Highly vulnerable areas and those that could conceal a potential attacker should be illuminated more brightly than areas designed for normal activity. The object is to light up the potential offender without spotlighting the victim (Gardner, 1995; Murray, 1994).

Often the CPTED and defensible space components are designed around the intended purpose of the space, but mainly during the day. In the absence of planning, unplanned activities may occur in the evening that may impact the intended users during the day (i.e., gang symbols, trash, vandalism). A well-designed landscape not only will help support appropriate activities during the day, but also will help discourage inappropriate activities at night. Good lighting promotes a more secure environment and encourages a greater number of people to utilize a space into the evening, (Gardner, 1995). Lighting plays a key role in the CPTED and defensible space components below.

#### *4.3.4.2 Maintenance*

Maintenance is an expression of ownership of property. Deterioration leaves the impression that there is less control by the intended users of a site and suggests a greater tolerance of disorder. Kelling and Cole's broken windows theory spoke directly to the importance of maintenance in neighborhoods and centered on residents' perceptions. The theory assumed that neighborhood



decay meant no one had claimed territory or responsibility for the area, or no one cared. As a result, decay would continue and citizens would perceive the area as unsafe and therefore separate themselves from it. These authors contended that the reactive model of the criminal justice system has failed, because it does not recognize the connections between disorder, fear, serious crime, and urban decay (1982).

CPTED practitioner Robert Gardner (1995) suggested that, for landscaping to play an effective role in crime prevention and create an appearance of a well-maintained and guarded place, shrubs should be no more than 3 feet tall and tree limbs should be trimmed to no less than 6 feet from the ground. This will ensure that visibility between 3 and 6 feet from the ground will always be relatively unimpaired (Gardner, 1995).

Adequate maintenance was measured by manipulating its presence or absence in the scenarios. The presence of maintenance included homes that had fresh paint in neutral shades and roofs with new shingles and paint; garage doors, windows, and wood privacy fences which were well maintained and functional; shrubs near front windows which were neatly trimmed and no more than 3 feet tall; and tree limbs neatly groomed and trimmed up approximately 6 feet from the ground.

Inadequate maintenance was manipulated in the scenarios and included homes that had paint fading or chipping; damaged garage doors; roofs needing new shingles or paint, lawns with overgrown grass, bushes and shrubs needing

trimming, dead tree branches obstructing power lines and hanging over fences, wood privacy fences in need of replacement or staining. These traits represented the symbolic “broken windows” that needed to be repaired to prevent the deterioration of the neighborhood and rising fear levels.

#### *4.3.4.3 Signs of Community Investment*

A sense of territoriality is fostered by architecture that allows easy identification of certain areas as the exclusive domain of a particular individual or group. This feeling is enhanced when the area involved is one an individual can relate to with a sense of pride and ownership. It is not enough for a person to simply be able to defend his or her environment, he or she also must want to defend it. The "want" results from territorial feelings of pride and ownership. The term *ownership*, when used in this context, does not necessarily mean actual legal ownership. It can mean, and very often does, a *perceived ownership* resulting from an individual's relationship with the environment. Office workers, for instance, may feel a sense of ownership for the office in which they work (Gardner, 1995).

*Defensible space* is a term used to describe an area that has been made a zone of defense by the design characteristics that form it. According to Gardner (1995), defensible space guidelines require that all areas within a neighborhood or other environment are designated as either public, private, or semiprivate. The purposes of these designations are to clearly mark the acceptable and unacceptable uses of each area and determine who should rightfully occupy the

space. The zones are divided using some type of barrier, either physical or symbolic. Signs are considered symbolic barriers that are not necessarily tangible, and do not prevent physical movement. A symbolic barrier simply leaves no doubt that a transition between zones has occurred (Gardner). In terms of this current research, the signs of community investment should indicate to anyone that they have traveled into a semiprivate or private zone which is well guarded by its residents. This dissertation measured the presence of signs in the scenarios by including signs that displayed school spirit, signs that advertised the neighborhood association meeting, and signs at each entrance of the neighborhood that advertised participation in Code Blue (a local crime watch, crime prevention program) within the hypothetical neighborhood.

#### *4.3.5 Control Variables*

##### *4.3.5.1 Crime Experience*

A concept known as the crime victimization perspective is one approach used to examine fear of crime. This point of view contends that certain people are fearful of crime, because they either have been victimized themselves or have experienced vicarious victimization. The latter refers to experiencing victimization through conversations with victims and other people, through media reports, and through observations of neighborhood conditions (Skogan & Maxfield, 1981). Further, Tyler (1980) proposed that, if a person is able to identify with the victim, then perceived vulnerability will be heightened. Miethe and Lee (1984) conducted a study which found that citizens who had been direct victims

of violent crimes were more fearful of crime than those who were direct victims of property crimes.

Within the victimization perspective, two general approaches are used to explain fear of crime, and whether or not victimization increases fear levels. The first is the individual fear profile, which relies on large national samples and focuses more on demographic characteristics than the environment. It argues that certain people may be more susceptible to crime, therefore naturally making them more fearful (e.g., inner-city residents and young males). The second approach, and the one most applicable to this current research, is the neighborhood assessment, which focuses on the amount of crime the respondent expects to occur in a neighborhood. The respondent for this type of method is not necessarily assessing the physical characteristics of an environment, but rather the crime which occurs in that environment (Lewis & Salem, 1986).

In this study, previous crime experience was measured by asking respondents if they had been the victim of a crime in the past year and if someone close to them had been the victim of a crime in the past year. The crimes probed were: burglary, robbery, assault, theft, and vandalism.

#### 4.4 Underlying Constructs of Variables

A principal axis factor analysis with varimax rotation was conducted on the base scenario to assess the underlying structure of eight items of the survey questionnaire. Three factors were requested based on the assumption that there

were three underlying constructs: fear of crime, presence of crime in the neighborhood, and defensible space. The analysis of the data yielded only two strong factors. The two factors were referred to as Fear of Crime and Defensible Space, both of which attempted to measure residents' perceptions of neighborhoods as safe or unsafe.

After rotation, the first factor accounted for 31.3 percent of the variance, and the second factor 27.0 percent of the variance. Table 4.4 displays the items and factor loadings for the rotated factors, with the first factor, which seems to index defensible space, loads most strongly on the first four items, with loadings in the first column. The second factor, which seems to index fear of crime, was composed of five items with loadings in column 2 of the table.

**Table 4.4 Factor Loadings for the Rotated Factor**

Item	Factor loading		Communality
	1	2	
Residents are proud of their property.	.85		.82
I would like to live here.	.78		.73
If a crime was committed here, residents would intervene.	.66		.68
This neighborhood would be a good place to raise children.	.64		.70
I would expect property crime such as burglary to be common here.		.82	.81
I would expect incidents of vandalism such as graffiti to be common here.		.67	.70
If they could, residents would move out of this neighborhood.		.74	.80
I would fear for my personal safety here.		.53	.74
Eigenvalues	4.4	1.5	
% of variance	55.4	18.3	

*Note.* Loadings < .40 are omitted

Cronbach's alpha was computed to determine whether the eight dependent variables that were summed to create the Defensible Space score had internal consistency. The unstandardized alpha for the eight items was .85, which indicated that the items form a scale that had reasonable internal consistency. For Factor 2, or the fear of crime scale, the Cronbach's unstandardized alpha was .91, which also indicated a high internal consistency. The Corrected item-Total correlation column of Table 4.5 tells us that the four items on Factor 1 and all four items on Factor 2 had correlations above  $\pm .40$ , which meant the item was correlated with most of the other items and would make a good component of this summated rating scale (N. Leech, K.C. Barrett, & G.A. Morgan, 2005).

**Table 4.5 Item-Total Statistics**

<b>Item</b>	<b>Corrected item-Total correlation</b>
<b>Factor 1 Defensible Space</b>	
Residents are proud of their property.	.81
I would like to live here.	.65
This neighborhood would be a good place to raise children.	.69
If a crime were committed, residents would intervene.	.69
<b>Factor 2 Fear of Crime</b>	
I would fear for my personal safety here.	.81
I would expect burglary to be common here.	.77
I would expect vandalism to be common here.	.78
If they could, residents would move from this neighborhood.	.86

#### 4.5 Summary

This chapter has reviewed the variables measured in this study and provided information on the preliminary analysis determined by factor analysis and cross-tabulations. A total of 56 subjects participated, all of whom were members of three different neighborhood associations in Fort Worth. When compared to Alamo Heights and Central Meadowbrook, the River Trails Neighborhood Association consisted of the youngest members, who also were mostly men and had lived in the neighborhoods no longer than 25 years. The shorter length of residence is likely due to the fact that the River Trails neighborhood is relatively young, while the two other neighborhoods are more established. The majority of the sample respondents were White, married women, with some college education and a median household income between \$30,000 and \$90,000. The following chapter reports the results of the data analysis, using three-way ANOVA, linear mixed model, and multiple regression analyses.

## CHAPTER 5

### RESULTS

#### 5.1 Data Analysis

The purpose of this dissertation was to examine the factors that influenced residents' perceptions of fear of crime and defensible space. It measured the variables that led people to perceive a neighborhood as safe or defensible and the factors that led people to feel fearful of crime. There were two categories of fear of crime: (a) fear of crime based on the hypothetical scenarios, and (b) fear of crime in residents' own neighborhoods. The first section examines the correlations between selected demographic variables.

##### *5.1.1 Fear of Crime Correlations*

A Pearson correlation analysis was run on two dependent variables to determine whether the subjects who were fearful in their own neighborhoods were fearful in the hypothetical neighborhoods and whether subjects who were not fearful in their own neighborhoods viewed hypothetical neighborhoods with the presence of lighting maintenance and signs as defensible. The results indicated that there was no relationship between fear in actual neighborhoods and fear in hypothetical neighborhoods. The correlation coefficient of .017 was not significant using a two-tailed test.



### *5.1.2 Lighting, Maintenance and Signs Main Effects and Interactions*

The presence of lighting, maintenance and signs were the independent variables manipulated in each of the eight hypothetical scenarios. Their impact was measured using a linear numeric scale of 1 to 6, which indicated the level of agreement with fear of crime and defensible space questions, (6 is highly likely and 1 is highly unlikely). As discussed in chapter 4, factor analysis with varimax rotation yielded two components, defensible space and fear of crime. Four values were summed to create the defensible space factor score, and four were summed to create the fear of crime score. As a result the range for each of the scales was 4 to 24. Each respondent was tested on three scenarios, so each respondent was divided into three cases. As a result the sample size was N=168. The N values for the dependent variable, perceptions of defensible space illustrated that 97 responses were for scenarios with good lighting 95, poor lighting (53) responded to scenarios with good maintenance and 93, poor maintenance (55) answered questions based on scenarios with the presence of signs of community investment.

Table 5.1 shows the number of subjects, the means, and standard deviations of Fear of Crime.

**Table 5.1. Means, Standard Deviations and N for Fear of Crime as a Function of Lighting, Maintenance and Signs**

<b>Lighting</b>	<b>Maintenance</b>	<b>Signs</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>N</b>
Poor	Poor	No Signs	9.87	5.26	15
		Signs	12.47	3.64	15
		Total	11.17	4.64	30
	Good	No Signs	16.13	3.09	15
		Signs	18.21	3.70	14
		Total	17.14	3.50	29
	Total	No Signs	13.00	5.31	30
		Signs	15.24	4.64	29
		Total	14.10	5.07	59
Good	Poor	No Signs	12.40	2.41	15
		Signs	15.36	3.52	14
		Total	113.83	3.31	29
	Good	No Signs	19.44	3.20	16
		Signs	19.54	3.64	54
		Total	19.51	3.52	70
	Total	No Signs	16.03	4.54	31
		Signs	18.68	3.97	68
		Total	17.85	4.32	99

The main effects of lighting, maintenance and signs on perceptions of defensible space were all significant, but the two-way and three-way ANOVAs were not. Lighting by maintenance  $F(1, 142)=2.09$ ,  $p=.150$ ; lighting by signs  $F(1,142)=.002$ ,  $p=.97$ ; maintenance by signs  $F(1,142)=1.02$ ,  $p=.32$ ; and lighting by maintenance by signs  $F(1,142)=2.46$ ,  $p=.119$ . The adjusted R squared for this combination of variables was .65, so sixty-five percent of the variation was explained by lighting, maintenance and signs. Responses indicated that a hypothetical neighborhood was perceived as defensible when there was adequate lighting, maintenance and signs of community investment, ( $M=21.3$ ,  $SD=2.8$ ,  $N=51$ ). In the absence of adequate lighting, maintenance and signs, a neighborhood was perceived as less defensible with a mean of 7.92, and standard deviation of 3.3. Table 5.2 presents the analysis of variance for defensible space.

**Table 5.2 Analysis of Variance for Defensible Space as a Function of Lighting, Maintenance and Signs**

Variable	Df	MS	F
Defensible Space			
Lighting	1	173.24	15.63***
Maintenance	1	2169.96	195.73***
Signs	1	83.24	7.51**
Lighting*Maintenance*Signs	1	27.27	2.46
Error	142	11.09	

\*p<.10, \*\*p<.05, \*\*\*p<.001

The between subjects effects of lighting, maintenance and signs on the second dependent variable, fear of crime, indicated that the main effects were all significant, (Table 5.3). However, the two-way and three way ANOVAs were not. The adjusted R squared was .46 for this model; forty-six percent of the variance in fear of crime was explained by lighting, maintenance and signs. Examining the means suggested that when lighting, maintenance and signs were absent, fear of crime was higher (12.47) than when signs were present (9.87). When maintenance was poor, fear of crime was high, even in the

presence of lighting and signs, (M=15.36, SD=3.5). Table 5.3 presents the analysis of variance for fear of crime.

**Table 5.3 Analysis of Variance for Fear of Crime as a Function of Lighting, Maintenance and Signs**

Variable	Df	MS	F
Fear of Crime			
Lighting	1	205.93	15.57***
Maintenance	1	1100.23	83.19***
Signs	1	122.05	9.23**
Lighting*Maintenance*Signs	1	11.15	.84
Error	150	13.23	

\*p<.10, \*\*p<.05, \*\*\*p<.001

### 5.1.3 Main Effects of Demographics

The main effects for the demographic variables (gender, education, income, age, and race) were not significant as a function of perceptions of defensible space, but marital status was. Education was not significant as a main effect  $F(1,114)=.011$ ,  $p=.92$ , but the two way interactions were, both with lighting and maintenance, which is discussed in the following interactions sections of this chapter. As a result of these significant interactions, education

was included in the regression equations to be discussed later in this chapter. Marital status was a significant main effect  $F(1,114)=2.57, p=.05$ . Individuals who were married ( $M=15.3, SD=.39$ ) reported higher perceptions of defensible space than their unmarried counterparts ( $M=13.9, SD=.62$ ).

#### *5.1.4 Interactions on Perceptions of Defensible Space*

This section reviews the interaction effects related to perceptions of defensible space and the following demographic variables, (gender, education, income, age, marital status, race and time at residence. The interactions on fear of crime between the same demographic variables will be discussed in a subsequent section of this chapter.

##### *5.1.4.1 Gender*

The between subjects effects from the ANOVA analysis indicated that there was no significant interaction between lighting, maintenance, signs and gender as a function of defensible space. The descriptive statistics for this model reported an  $N=55$  for females and  $N=95$  for males. Thus, perceptions of the defensibility of a neighborhood did not depend on gender.

##### *5.1.4.2 Education*

The interaction between maintenance and education on perceptions of defensible space was statistically significant,  $F(1,114)=2.62, p=.11$ . The effect of maintenance on perceptions of defensible space depended on which level of education was considered. When a neighborhood had poor maintenance, those

with some college education ( $M=9.85$ ,  $SD=.55$ ) viewed the neighborhood as less defensible than those with no college education ( $M=11.17$ ,  $SD=1.07$ ). When maintenance was good, those with some college ( $M=19.84$ ) viewed the neighborhood as more defensible than those with no college education ( $M=18.69$ ).

The interaction between lighting and education on fear of crime was also significant,  $F(1,114)=5.15$ ,  $p<.010$ . These results suggested that in neighborhoods with inadequate lighting, people with no college education ( $M=14.75$ ,  $SD=.92$ ) viewed the neighborhood as more defensible than people with some college education ( $M=12.93$ ,  $SD=.54$ ). When lighting was adequate the reverse was true; those with some college viewed a neighborhood as more defensible ( $M=19.84$ ) than those with no college ( $M=18.69$ ).

#### 5.1.4.3 Age

An interaction between lighting and age was found in this analysis and the impact of lighting on perceptions of defensible space was influenced by the category or level of age. If a neighborhood had poor lighting, younger respondents reported the highest levels of defensible space with a mean of  $14.52$ ,  $SD=.74$ . the oldest group ( $M=12.88$ ,  $SD=.70$ ). The oldest respondents seemed to be the most sensitive to poor lighting as it related to the defensibility of a neighborhood. When lighting was good, there were statistical differences

between the youngest group and the oldest group, ( $M=13.63$ ; and  $M=16.59$ ) respectively.

#### *5.1.4.4 Marital Status*

The marital status categories were transformed and recoded from the original six categories (single, married, separated, divorced, widowed and live-in partner), to simply married as compared to all others. The ANOVA results showed a marginally significant interaction effect between maintenance and marital status, (degrees of freedom=(1,114),  $F=3.40$ ,  $p=.068$ ). The marginal means for maintenance and marital status revealed that when a neighborhood was poorly maintained, married people ( $M=11.07$ ,  $SD=.61$ ) reported higher levels of defensible space than all other groups ( $M=8.3$ ,  $SD=1.02$ ). If a neighborhood was well maintained, there was no difference between married or other groups.

#### *5.1.4.5 Income*

Income originally had six categories (less than \$30,000, \$30,000 to \$60,000, \$60,000 to \$90,000, \$90,000 to \$120,000, \$120,000 to \$150,000 and \$150,000+). Within these categories, ( $N=128$ ), 15 percent earned less than \$30,000, approximately 31 percent earned between \$30,000 and \$60,000 and 35% earned between \$60,000 and \$90,000. At the highest range of the income scale, 14% earned between \$90,000 and \$120,000, while just over 2 percent earned more than \$120,000. A three way ANOVA yielded a significant



interaction between maintenance, signs of community investment and income,  $F(2,93)=3.16, p=.047$ .

When maintenance was poor and there were no signs of community investment in a neighborhood, people who earned between \$90,000 and \$120,000 ( $M=12.00, SD=3.02$ ), perceived a neighborhood as more defensible than people who earned less than \$30,000 ( $M=8.42, SD=1.39$ ) annually. In this case people earning the least money perceived signs and maintenance as having more of an impact on the defensibility of the space than those earning more. When maintenance was poor and signs of community investment were present, there was no significant difference between the two income groups.

#### *5.1.4.6 Race*

Due to the lack of variation among racial/ethnic categories in this data set, the original categories were collapsed and recoded into whites and all others. There were no significant interactions between lighting, maintenance, signs, race, and perceptions of defensible space. As mentioned previously, the lack of representativeness of race in this sample make generalizations difficult. This is illustrated by the descriptive statistics;  $N=110$  for whites and  $N=20$  for all others.

This section reviewed the interactions between certain demographic variables and perceptions of defensible space. Neither gender nor race yielded significant interactions, indicating that perceptions of defensible space did not

depend on the gender or race of respondents. Perceptions of defensible space were dependent on education, age and marital status. The significant interaction between maintenance, lighting and education suggested that good maintenance and good lighting mattered most to those with some college. In terms of age and marital status, younger people viewed neighborhoods as more defensible than older people, while those who were married viewed neighborhoods as more defensible than the unmarried.

#### *5.1.5 Interactions on Fear of Crime*

This section reviews the interaction effects related to fear of crime in hypothetical neighborhoods and demographic variables, (gender, education, income, age, marital status, race and time at residence).

##### *5.1.5.1 Gender*

The between subjects effects of the ANOVA analysis showed that the main effects of lighting ( $p < .010$ ), maintenance ( $p < .001$ ), signs ( $p < .010$ ) and gender ( $p < .010$ ) were all significant as a function of fear of crime in hypothetical neighborhoods. The descriptive statistics for this model reported an  $N=57$  for females and  $N=101$  for males. The interaction between lighting and gender was statistically significant ( $p < .10$ ),  $F(1,142)=2.83$ ,  $p=.095$  as well as the interaction between maintenance and gender ( $F(1,142)=2.68$ ,  $p=.104$ ) and the interaction between lighting, maintenance and gender ( $F(1,142)=3.65$ ,  $p=.058$ ).

Examining the mean differences of these significant interactions suggested that when lighting was poor, females were significantly more fearful than males, (M=15.94, SD=.83) for females; (M=13.60, SD=.60) for males. When lighting was adequate, there was no difference among males and females in their levels of fear. When maintenance was inadequate, females (M=14.21, SD=.85) were more fearful than males (M=11.90, SD=.57). However, when maintenance in hypothetical neighborhoods was adequate, there was no significant difference in fear between females and males. The mean comparisons of lighting and maintenance indicated that when both lighting and maintenance were inadequate in hypothetical neighborhoods, females (M=14.63, SD=1.3) were more fearful than males, (M=9.91, SD=.76). When lighting and maintenance were adequate, there was no statistically significant difference in average scores of fear for females and males.

#### *5.1.5.2 Education*

As with most of the other demographic variables, education was dummy coded into college education and no college education because of the limited number of cases in each category. As a function of fear of crime in hypothetical neighborhoods, the main effects of lighting, maintenance and signs were the only statistically significant variables, ( $p < .10$ ). The interactions were not significant ( $p < .10$ ).

#### *5.1.5.3 Age*

Age was divided into two categories (Younger=24-56; and Older=57-86). There were no statistically significant interactions with age as a function of fear of crime ( $p < .10$ ).

#### *5.1.5.4 Marital Status*

Marital status was dummy coded into married and all others. Maintenance and signs interacted with marital status ( $F(1, 114) = 2.45, p = .117$ ). The mean comparisons indicated that when maintenance of homes and grounds was poor and there were no signs of community investment, married people reported lower fear than all other statuses, ( $M = 9.70, SD = .79$  for married; and  $M = 12.98, SD = 1.0$  for all others). When maintenance was adequate and there were no signs, there was no significant difference between married and non-married people.

The interaction between maintenance and marital status was marginally significant, ( $F(1, 114) = 2.49, p = .117$ ). The comparisons of means suggested that when maintenance was poor, married people were more fearful than other groups ( $M = 12.48, SD = .67$  and  $M = 10.2, SD = 1.12$ ) respectively. However, when maintenance was good there was no difference in levels of fear among married and unmarried individuals. The two-way ANOVA between signs and marital status was significant, ( $F(1, 114) = 2.52, p = .115$ ). When a neighborhood had no visible signs of community investment married people reported lower fear of

crime than other groups. When there were signs of community investment, the reverse was true, married people reported higher levels of fear of crime than unmarried people.

#### *5.1.5.5 Income*

The number of cases in each income category was very limited. A cross tabs procedure indicated that the expected count in several cells was less than five, (the minimum expected count). As a result, the income categories were collapsed and recoded to two groups, (Less than 30k and above). The three way interaction between lighting, maintenance and income were significant ( $F(1,114)=2.29, p=.133$ ). When lighting and maintenance were poor, those earning between \$30,000 and \$90,000 ( $M=10.2, SD=.95$ ) were more fearful than those earning less than \$30,000, ( $M=9.8, SD=1.25$ ). When lighting was good and maintenance was poor those in the higher income bracket were less fearful ( $M=12.9, SD=.81$ ) than those in the lower income brackets ( $M=15.8, SD=1.6$ ).

This section reviewed the interactions between lighting, maintenance and signs and specific demographic variables. The results suggested that in the presence of lighting and maintenance, their level of fear was diminished. When maintenance was absent or inadequate, married people were more fearful than the non-married. When signs were not present, non-married people were more fearful than married people. There were no significant interactions between

education or age, which suggests that fear of crime is not dependent on those factors.

#### *5.1.6 Regression Analysis*

Multiple regression analysis was conducted to determine the best linear combination of the independent variables (lighting, maintenance, signs of community investment, and demographics) on the dependent variables (fear of crime in hypothetical neighborhoods, and perceptions of defensible space). Based on the ANOVA results, the fear of crime and crime prevention literature discussed previously, only the variables that yielded significant results ( $p < .10$ ) were included in the analysis. The regression results revealed the variables that were the best at explaining the variation in the dependent variables. Table 5.4 illustrated two regression models that provided the best linear combination of variables.

As a function of perceptions of defensible space, three independent variables were significant: maintenance, marital status and education. Maintenance posted the highest beta weight of all the independent variables, (.48), followed by education, (-.22). The adjusted R squared yielded a result of .68, which suggested that sixty-eight percent of the variance in perceptions of defensible space was explained by the independent variables in this model. Marital status was coded 1 for married and 0 for all others, so the results suggested that unmarried people were less likely to perceive a neighborhood as

defensible. Education was coded as 1 for college education and 0 for no college education. The beta weights in Table 5.4 indicated that those with some college education (-.19) viewed the hypothetical neighborhoods as more defensible than those with no college education.

In terms of fear of crime in hypothetical neighborhoods, three independent variables were significant: maintenance, signs and gender. For this model, maintenance was the best predictor of fear of crime with a beta of .42, followed by gender (-.29) and signs of community investment (.14). In this particular study, women were more fearful than men, a finding supported by the fear of crime literature discussed in chapter three.

In summary, the variables that contributed the most to the prediction of fear of crime in hypothetical neighborhoods were maintenance, signs and gender. The model as a whole posted an adjusted  $R^2$  of .47 meaning a significant amount of the variation in fear of crime was explained by the independent variables in this model. Maintenance, signs, marital status, and education significantly explained the relationship with perceptions of defensible space. This model explained significantly more of the variation in perceptions of defensible space, (R squared=.68). The following section reviews the t tests for fear in residents' own neighborhoods.

**Table 5.4 Regression Analysis**

Independent Variables	Fear in hypothetical neighborhoods		Defensible space in hypothetical neighborhoods	
	B(Std Error)	Beta	B(S Error)	Beta
Lighting	1.10(1.01)	.11	1.29(2.36)	-.11
Maintenance	***4.29(1.07)	.42	**5.52(2.29)	.48
Signs of community investment	**1.39(.62)	.14	**1.45(.57)	.13
Gender	** -2.94(1.21)	-.29	-	-
Marital status	-1.01(.99)	-.10	** -2.20(.91)	-.19
Education	-	-	** -3.86(1.38)	-.22
Income	-	-	-	-
Age	-	-	.33(.96)	.03
Gender x Lighting	1.61(1.27)	.16	-	-
Gender x Maintenance	1.20(1.31)	.12	-	-
Marital x Maintenance	.94(1.28)	.08	**2.61(1.15)	.19
Education x Maintenance	-	-	2.36(2.37)	.21
Education x Lighting	-	-	3.01(2.36)	.26
Age x Lighting	-	-	-.25(1.21)	-.02
	<i>N</i> = 158 Adj. $R^2$ = .47 $F$ = 18.28 * $p$ < .10 ** $p$ < .05 *** $p$ < .01		<i>N</i> = 150 Adj. $R^2$ = .68 $F$ = 26.89 * $p$ < .10 ** $p$ < .05 *** $p$ < .01	



### *5.1.7 Fear of Crime in Actual Neighborhoods*

Independent sample t tests were run to examine the null hypothesis that the variances between previous crime experience, acquaintance crime experience and the demographic variables were equal, in relation to fear of crime in residents' own neighborhoods. The analysis was run on the 56 respondents.

Personal crime experience consisted of six dummy coded variables (burglary, robbery, assault, theft, vandalism, and none in the past year). The instrument asked respondents to report whether they had been the victim of any of the aforementioned crimes in the past year. Two of the crime categories were significant (robbery, and assault). For robbery there was a significant difference in the means among people who reported being the victim in the past year (N=1, m=52) and those that reported they had not, (N=45, m=25) ( $t=-2.90$ ,  $df=44$ ,  $p<.01$ ), on fear of crime. The same was true for assault. Those who reported being the victim of an assault (N=1, m=52) were more fearful than those who were not (N=45, m=25), ( $t=-2.90$ ,  $df=44$ ,  $p<.01$ ). Knowing someone who had been the victim of a crime in the past year resulted in significant results in residents' own neighborhoods for robbery and theft.

For gender, there was no statistically significant difference in fear of crime in residents' own neighborhoods. This runs counter to fear of crime

literature that argues that women tend to be more fearful than men (Hale, 1996).

There was no statistically significant difference between whites and non-whites with respect to their fear of crime in actual neighborhoods, despite the review of literature that stated minorities tend to be more fearful of crime than whites. It must be mentioned, however, that there were very few racial/ethnic minorities included in the sample.

In terms of education and the impact of fear of crime in actual neighborhoods, the relationship was not significant. Those with some college education (N=44, m=27), ( $t=-1.23$ ,  $df=47$ ) were not significantly different than those with no college education (N=5, m=21), ( $t=1.72$ ,  $df=6.2$ ).

There was no difference between the means of married and unmarried people as a function of fear of crime, ( $t=-.23$ ,  $df=47$ ,  $p<.10$ ).

The results indicated that there was no difference among the means of people who lived at their homes 1-25 years and those who lived there longer than 25 years, ( $F=.77$ ,  $p<.05$ ), ( $t=-.26$ ,  $df=47$ ).

The t test results indicated that for previous crime experience, those who were the victims of robbery and assault in the past year were the most fearful in their own neighborhoods. Those who reported knowing a victim of a robbery or theft in the past year, were more fearful than those who did not. The

demographic variables failed to yield significant differences in fear in actual neighborhoods.

#### *5.1.8 Comparisons of: Neighborhood Associations*

A one way analysis of variance was conducted to compare the means of the three neighborhood associations surveyed, (Alamo Heights, River Trails and Central Meadowbrook). River Trails had an N=11, Central Meadowbrook, N=31 and Alamo Heights, N=7. The descriptive statistics indicated the most variation in fear of crime occurred in the Central Meadowbrook (SD=10.22) and the least amount occurred in River Trails (SD=7.33). The mean differences were not significant, ( $p < .10$ ). On average residents from Alamo Heights (N=7) had higher levels of fear of crime (7.86) than residents from River Trails, (N=11,  $p = .21$ ). Central Meadowbrook had a higher average score on fear of crime (6.29,  $p = .92$ ) compared to River Trails.

A comparison of neighborhood associations and fear of crime indicated that members of Alamo Heights had higher scores of fear in their own neighborhoods, than either Central Meadowbrook or River Trails members. The cross tabs procedures told us that 14 percent of Alamo Heights had the lowest levels of fear, and 57 percent the highest. River Trails residents reported the lowest fear levels, with only 9 percent reporting the highest levels of fear. Approximately one-third of Central Meadowbrook residents reported the highest fear levels. However, the Chi Square results failed to yield significant results

( $p < .10$ ), and seventy five percent of the cells have expected counts less than five.

## 5.2 Summary

This chapter described the various descriptive and inferential statistical analysis used to explain this data. The consistent finding was that the presence of maintenance and signs significantly predicted the relationships with fear of crime and perceptions of defensible space in hypothetical neighborhoods. The significance of maintenance and the significance of signs of community investment supported broken windows, defensible space, and CPTED theories. The maintenance of a neighborhood and the signs displaying school spirit, signs announcing the neighborhood association meeting, and signs advertising participation in Code Blue provided cues that the residents had a sense of territoriality and ownership, and that the neighborhood was one which was well defended.

The relationship between crime experience and fear in resident's actual neighborhoods was not significant. The weak associations may be explained by two factors. Miethe (1995) argued that most criminal victimization are less serious in their consequence and likely not fear provoking. For instance the National Crime Victims Survey indicates that few assaults lead to injury, many burglaries are not successfully completed and most stolen property is of little material value. When crimes have little consequence on the daily lives of their

victims, feelings of fear are low (Miethe, 1995). Further, fear may cause a person to adopt protection based behaviors, which decreases exposure to risk, which results in lower victimizations. Altering behavior by being more careful falls in line with routine activities theory discussed in chapter two in that actual victimization may be reduced by altering one's lifestyle or routines. Chapter six discusses the implications, limitations and questions for future research.

CHAPTER 6  
DISCUSSION AND CONCLUSIONS

6.1 Discussion

This dissertation attempted to make an original contribution to the literature by probing people's subjective perceptions of fear and defensible space, and objective previous crime experiences. Crime prevention literature (Newman, 1973; Jeffery, 1971) espouse the importance of social aspects in understanding and reducing fear, but often focus primarily on the physical aspects such as lighting, target hardening measures, and on quantitative measures such as official crime statistics.

The results of this dissertation argue that a more balanced and holistic view of crime prevention should be pursued. A balance between subjective and objective measures of fear and crime, and a balance between the physical and social indicators of fear and crime. Crime and fear of crime are too complex to measure with a unilateral focus. As mentioned in chapter 2, defensible space theory has been criticized for its overly deterministic view of crime prevention, which likely stems from the lack of empirical testing of social concepts, (community building, and community policing). On the other hand, to propose a crime prevention model that ignores the significance of the physical environment is sure to fail. In short, one of the main lessons of this research is that

there needs to be research done that balances the importance of the objective, subjective; physical and social. Measuring the social requires obtaining a sense of what the “people” in a neighborhood perceive as important in reducing crime and fear, i.e. measuring individual perceptions and applying them to individual neighborhoods. Cleveland and Saville (1996) were the first to address the limitations of physical design in crime prevention and argue for a more socially based crime prevention strategy. This dissertation supports that contention and suggests a model that a) encourages residents to participate in maintenance programs that clean up and beautify the neighborhood, and b) encourages participation in organized neighborhood watch programs to discuss and find solutions to neighborhood problems. This model places equal emphasis on social territoriality and physical territoriality so individuals obtain and maintain a sense of control over their neighborhoods. This type of model requires knowledge of the perceptions of residents, and more effective methods to measure perceptions, which this dissertation begins to address.

Chapter 1 provided the roadmap by detailing the research questions and approaches used in this study, specifically which physical characteristics in the residential environment lead to perceptions of fear. Chapter 2 consisted of the historical background and development of criminological theory and how those theories can be interconnected to provide an understanding of fear. Chapter 3 reviewed the existing literature on fear of crime, and how it relates to crime

prevention. Chapter 4 discussed the methodology employed for this dissertation, and the descriptive procedures used to describe the respondents. Finally, chapter 5 explained the data analysis techniques used to arrive at correlations and explanations between relevant variables. This current chapter provides the implications, limitations, questions for future research, and conclusions of this dissertation. The implications are addressed first.

### *6.1.1 Implications*

The first implication of this research is based on the premise that residential housing can be designed in such a way that it prevents crime and reduces fear of crime. Specific design elements that are relatively straightforward and cost-effective to implement include: increasing and improving street lighting, and pathways used by pedestrians, landscaping effectively so as not to impede visibility, erecting signage to clearly designate private and public spaces, and leaving windows and blinds open to create the image of capable guardians who will defend their property.

Other implications are social in nature and lie with planners and urban designers who want to create urban spaces that can be taken care of easily by residents and was not the focus of this study, but is presented as an alternative to resident controlled changes. It is clear from these findings that the social aspects need to be given at least as much weight and importance as the physical. This dissertation manipulated variables in the scenarios such as



maintenance of homes and grounds, and neighborhood signs, or what residents can do to change or manage their neighborhoods, with the exception of the street lighting. Local officials do not want to assume sole responsibility for neighborhoods, simply because it is unrealistic for them to do so (Taylor & Harrell, 1996). Thus, many local community groups and neighborhood associations have taken up the initiative to keep neighborhoods clean and well maintained, as well as assisting local police departments in policing and protecting neighborhoods (Fleissner & Heinzelmann, 1996).

The maintenance of homes and grounds was consistently significant in explaining fear of crime and perceptions of defensible space. Maintenance is a physical measure, as well as a social variable in that the overall maintenance of a neighborhood indicates social cooperation and cohesion in creating a positive image or perception of the area. In addition, signs of community investment in neighborhoods are physical as well as social indicators of concern and defensibility of the area.

With regard to Newman's rarely tested element of image and perception, these findings overwhelmingly suggest that the maintenance and management of residential housing and neighborhoods is critical to reducing fear of crime. Failure to address the importance of maintenance may lead to neighborhoods that are "undefensible" in that their deficient care may be perceived by potential offenders as showing they are vulnerable to attack. This implication is also

acutely related to Routine Activities in that potential victims have the power to prevent victimization by changing their activities that put them in the path of crime. Avoiding bars at night or high crime areas, are examples of routine activities that can be used to prevent crime.

A related, and more “undesirable” implication of a negative image, is the growth of gated and private communities that attempt to keep problems of crime outside their entrances; in essence, displacing these behaviors to other, less-defensible neighborhoods. This fortress (or “us vs. them”) mentality may create division among residents, and does not promote the cooperation and coordination necessary to successfully implement crime prevention strategies.

The implications for local planners, residents, and government officials is that coordination efforts as illustrated in CPTED, defensible space and broken windows theories will be required if a neighborhood is assessed to be at risk for higher crime. Crime prevention specialists need to be able to work with the police and planners to assist residents in creating an environment that is worth defending. These coordination efforts should use the expertise of each group to derive the best solutions for individual neighborhoods. There must be a synchronization of local agencies, such as housing, zoning, and sanitation, to prevent or slow the physical deterioration of vacant and abandoned houses. Such efforts might reduce crime and fear of crime, while increasing commitment to the community. This also applies at the federal level, Congressional

testimony by Gary Bald of the Counterterrorism division of the Federal Bureau of Investigation points to the importance of collaboration and cooperation in the aftermath of September 11th. Bald testified that international awareness and cooperation on the problem of terrorism has resulted in the ability of FBI to access and obtain information in a timely fashion has significantly enhanced the FBI's ability to identify, investigate, and resolve immediate threat situations involving potential terrorist activity (March 4, 2004).

The maintenance of homes and grounds was consistently significant in explaining fear of crime and perceptions of defensible space. Maintenance is a physical measure, as well as a social variable in that the overall maintenance of a neighborhood indicates social cooperation and cohesion in creating a positive image or perception of the area. In addition, signs of community investment in neighborhoods are physical as well as social indicators of concern and defensibility of the area.

Based on the strength of maintenance in predicting fear of crime in hypothetical neighborhoods and perceptions of defensible space, another implication for planners and housing officials is to effectively and efficiently maintain the physical residential environment. This research supports the broken windows theory in this respect, and calls for dealing with derelict and vacant properties by repairing and renovating them as rapidly as possible at the government level, and encouraging residents to maintain their properties.

Findings from this study can also be applied on a larger more macro scale such as broad criminal justice policies and issues like homeland security and the war on terror. The argument being, by designing or modifying the built environment it may be possible to prevent future terrorist attacks. Since the September 11, 2001 attacks, calls for more stringent border security have come center stage in Washington. Some policy makers are calling for the erection of a wall along the border of Mexico and Texas to prevent the flow of illegal immigrants is especially relevant to these findings in using the built environment to control crime. Crime prevention theories require citizens to take responsibility for reducing crime, which will in turn reduce fear of crime. Allowing the more invasive screening measures at airports and national points of interests are done based on the assumption that crime may be prevented. Since 9/11 we have altered the built environment in ways that we perceive will keep us safe. The high approval ratings of President Bush after the attacks indicate that we feel safer when crime prevention techniques are implemented.

### *6.1.2 Limitations*

This type of study is in many ways exploratory, and there is no available methodology that describes the use of written scenarios to probe perceptions. Several other researchers have used photographs as the stimuli in measuring perceptions of fear of crime, crime, and defensible space, and the methodology employed in this research is an offshoot of those previously used and appro-

priate methods (Cozens, 2001; Groat, 1982; Hubbard, 1996; Purcell & Nasar, 1992; Scott & Canter, 1997). This research is considered to be of a preexperimental, one shot design, because the independent variables (lighting, maintenance, or signs) were manipulated in the way that a treatment or intervention given to an experimental group would have been; the combinations of variables were randomly assigned so that one person did not answer the same scenario more than once. The one shot design does not have a control group and does not use a pretest before the treatment or intervention is given. The methodological limitations of this type of design are that they control for the fewest confounding effects and allow for minimal control by the researcher; in this case, these were the result of financial and time constraints.

The second category of limitations for this study involves the sample . There was a total of 56 respondents from three different neighborhood associations. Increasing the sample size and obtaining a more representative sample of neighborhood associations across a metropolitan area would be very beneficial toward the achievement of a more valid and reliable measure of differences across neighborhoods. Initially, the methodology was meant to divide the neighborhood associations by low, middle, and high income levels. However, there was very little variation in the incomes of the subjects between the three groups, and therefore it was futile to categorize the groups by income. The small sample size also minimized the representativeness of race/ethnicity,

marital status, income, and living situation (renting vs. owning homes).

Nevertheless, the insights gained from the patterns and trends found in this study suggest that meaningful conclusions can be drawn from this type of research. Future research might answer some of the questions posed next.

### *6.1.3 Questions for Future Research*

First, what is the order of relationships between crime, fear of crime, and perceptions of vulnerability? Does physical deterioration precede increasing crime, or is the reverse true? Future research must probe the characteristics of the environment that correlate with these relationships.

Second, how do social, cultural, and organizational factors contribute to the success of crime reduction through environmental modifications? Research has demonstrated that the physical environment alone does not impact crime. Social, cultural, and organizational influences work together to effectively reduce crime. Relationships among neighbors, racial and ethnic makeup, and other community initiatives determine whether modifications to the residential environment actually reduce crime and fear of crime. Cooperative and collaborative relationships at the federal level are also important in preventing crime at the national or international levels.

Finally, what is the effect of the larger social, political, and economic environment on the risk of crime, and how do these issues (e.g., drawing in of potential offenders, concentrations of poverty, or absence of political power with

limited access to resources) relate to the physical environment? Do areas with higher crime risk due to their location benefit from crime prevention efforts?

## 6.2 Summary

Crime prevention theories, such as defensible space and CPTED, are clearly supported by the research findings in this dissertation. Neighborhoods with the presence of lighting, maintenance, and signs are perceived as being the safest and most defensible. In these types of neighborhoods, residents do not expect burglary or vandalism to be common, perceive the area to be a good place to raise children, view the neighborhood as a place they would like to live, believe residents would intervene if a crime was occurring, assume that residents are proud of their property, and, finally, do not fear for their personal safety. When the combination of lighting, maintenance, and signs was controlled, in every equation maintenance was the most significant variable explaining fear of crime and perceptions of defensible space. This points to the importance of visual attributes on perceptions. A well-maintained neighborhood seems safer and is overall more appealing to subjects when controlling for actual crime by asking about personal and acquaintance crime experience.

The traditional technique for mapping crime trends and formulating crime prevention strategies continues to increase. It involves monitoring trends and identifying hot spots where recorded crime is found to be concentrated. But, the dark figures of crime (the unreported or unrecorded crimes) mean that there is

no way of knowing how much crime actually occurs in our neighborhoods. In addition, fear of crime may exist in areas which are not obvious based on official statistics, constituting a dimension that has been consistently ignored in the scholarly research (Brantingham & Vrij, 1998; Mirrless-Black et al. 1998). This dissertation makes a contribution to the literature through its argument that the objective nature of crime may be better understood by considering the more subjective nature of fear of crime (i.e., the perceptions of residents). This research moves away from the traditional methods of examining official crime statistics as the primary vehicle for understanding crime and recognizes the importance of “people” in the understanding of crime and fear of crime by probing perceptions. This research provides the framework for future research that focuses on combining social elements such increasing community cohesion and interaction along with physical modifications to reduce fear of crime for residents and to increase the perception of defensibility to potential offenders.

Improvement of crime prevention abilities through scholarly research will require continuing to operationally test both the objective and subjective realities of crime and fear of crime as well as the physical and social components. Thus, refining the measurement of the complex concept of fear of crime and comparing the subjective to the objective will provide a more accurate picture of crime and fear of crime in our urban neighborhoods. It is



crucial to measure and understand perceptions people hold in regard to crime,  
in order to address and reduce fear of crime. Perception is reality.

APPENDIX A  
SCENARIOS

## Scenarios

1. Imagine you are in the market for a new home in a new city. Driving through one particular neighborhood at dusk, you notice that streetlights with bright bulbs line the roadways every 100–200 feet (approximately three on every block). Many of the homes and garages have exterior building lighting that helps illuminate front areas. The homes in this neighborhood have fresh paint in neutral shades and the roofs have new shingles and paint. Garage doors, windows, and wood privacy fences are well maintained and functional. Shrubs near front windows are neatly trimmed and no more than three feet tall. Tree limbs are also neatly groomed and trimmed up approximately six feet from the ground. Many curtains and blinds are open and you can see lights on inside these houses. You also notice many different signs throughout the neighborhood: signs displaying school spirit; signs that advertise the neighborhood association meeting; and signs at each entrance of the neighborhood, advertising participation in Code Blue (a local crime watch, crime prevention program).

2. Imagine you are in the market for a new home in a new city. Driving through one particular neighborhood at dusk, you notice that streetlights with bright bulbs line the roadways every 100–200 feet (approximately three on every block). Many of the homes and garages have exterior building lighting that helps illuminate front areas. Many of the homes in this neighborhood have paint fading or chipping, damaged garage doors, and roofs needing new shingles or paint. Many of the lawns have overgrown grass and bushes and shrubs that need trimming. You notice some dead trees with branches obstructing power lines and hanging over fences. The privacy fences are made of wood and are in need of replacement or staining. You also notice many different signs throughout the neighborhood: signs displaying school spirit; signs that advertise the neighborhood association meeting; and signs at each entrance of the neighborhood, advertising participation in Code Blue (a local crime watch, crime prevention program).

3. Imagine you are in the market for a new home in a new city. Driving through one particular neighborhood at dusk, you notice that streetlights with bright bulbs line the roadways every 100–200 feet (approximately three on every block). Many of the homes and garages have exterior building lighting that helps illuminate front areas. The homes in this neighborhood have fresh paint in neutral shades and the roofs have new shingles and paint. Garage doors, windows, and wood privacy fences are well maintained and functional. Shrubs near front windows are neatly trimmed and no more than three feet tall. Trees limbs are also neatly groomed and trimmed up approximately six feet from the ground. Many curtains and blinds are open and you can see lights on inside these houses.

4. Imagine you are in the market for a new home in a new city. Driving through one particular neighborhood at dusk, you notice that streetlights with bright bulbs line the roadways every 100–200 feet (approximately three on every block). Many of the homes and garages have exterior building lighting that helps illuminate front areas. Many of the homes in this neighborhood have paint fading or chipping, damaged garage doors, and roofs needing new shingles or paint. Many of the lawns have overgrown grass, bushes and shrubs that need trimming. You notice some dead trees with branches obstructing power lines and hanging over fences. The privacy fences are made of wood and are in need of replacement or staining.

5. Imagine that you are in the market for a new home in a new city. Driving through one particular neighborhood around dusk, you notice that there is only one street light per block, and some of the lamps are dim or burned out. Most homes have no exterior building lighting to illuminate front areas. The homes in this neighborhood have fresh paint in neutral shades and the roofs have new shingles and paint. Garage doors, windows, and wood privacy fences are

well maintained and functional. Shrubs near front windows are neatly trimmed and no more than three feet tall. Trees limbs are also neatly groomed and trimmed up approximately six feet from the ground. Many curtains and blinds are open and you can see lights on inside these houses. You also notice many different signs throughout the neighborhood: signs displaying school spirit; signs that advertise the neighborhood association meeting; and signs at each entrance of the neighborhood, advertising participation in Code Blue (a local crime watch, crime prevention program).

6. Imagine that you are in the market for a new home in a new city. Driving through one particular neighborhood around dusk, you notice that there is only one street light per block, and some of the lamps are dim or burned out. Most homes have no exterior building lighting to illuminate front areas. Many of the homes in this neighborhood have paint fading or chipping, damaged garage doors, and roofs needing new shingles or paint. Many of the lawns have overgrown grass, bushes and shrubs that need trimming. You notice some dead trees with branches obstructing power lines and hanging over fences. The privacy fences are made of wood and are in need of replacement or staining. You also notice many different signs throughout the neighborhood: signs displaying school spirit; signs that advertise the neighborhood association meeting; and signs at each entrance of the neighborhood, advertising participation in Code Blue (a local crime watch, crime prevention program).

7. Imagine that you are in the market for a new home in a new city. Driving through one particular neighborhood around dusk, you notice that there is only one street light per block, and some of the lamps are dim or burned out. Most homes have no exterior building lighting to illuminate front areas. The homes in this neighborhood have fresh paint in neutral shades and the roofs have new shingles and paint. Garage doors, windows, and wood privacy fences are well maintained and functional. Shrubs near front windows are neatly trimmed and no more than three feet tall. Trees limbs are also neatly groomed and trimmed up approximately six feet from the ground. Many curtains and blinds are open and you can see lights on inside these houses.

8. Imagine that you are in the market for a new home in a new city. Driving through one particular neighborhood around dusk, you notice that there is only one street light per block, and some of the lamps are dim or burned out. Most homes have no exterior building lighting to illuminate front areas. Many of the homes in this neighborhood have paint fading or chipping, damaged garage doors, and roofs needing new shingles or paint. Many of the lawns have overgrown grass, bushes and shrubs that need trimming. You notice some dead trees with branches obstructing power lines and hanging over fences. The privacy fences are made of wood and are in need of replacement or staining.

APPENDIX B  
SURVEY

School of Urban and Public Affairs  
University of Texas at Arlington  
Survey Questionnaire

Perceptions of Crime, Fear of Crime and Defensible Space  
in Fort Worth, Texas Neighborhoods

This survey seeks to determine your perceptions of crime and fear of crime in residential neighborhoods. Three different scenarios will be described and you will be asked to complete a short questionnaire for each one. There are no right or wrong answers; it is your opinions that are requested. All responses will be kept strictly confidential.

**A. Scenario Questions**

Thinking only about the scenario just described, please indicate the extent of your agreement or disagreement with each of the following statements, by circling the number that best reflects your feeling toward the statement.

	Strongly Agree	Agree	Agree Some- what	Disagree Some- what	Disagre e	Strongly Disagre e
I would like to live here.	6	5	4	3	2	1
The residents are proud of their property.	6	5	4	3	2	1
I would fear for my personal safety here.	6	5	4	3	2	1
I would expect property crime such as burglary to be common here.	6	5	4	3	2	1
I would expect incidents of vandalism such as graffiti to be common here.	6	5	4	3	2	1
If they could, residents would move out of this neighborhood.	6	5	4	3	2	1
This neighborhood would be a good place to raise children.	6	5	4	3	2	1
If a crime was committed here, residents would likely intervene (i.e. call 911, personally intervene etc.)	6	5	4	3	2	1

**Now for the remainder of the survey, forget about the scenario(s) just described and think only about day-to-day life in your OWN NEIGHBORHOOD.**

**B. Crime Experience Questions**

During the past year, that is, between last April and now, please indicate if you have personally been the victim of any of the following crimes. (Check all that apply)

- Burglary
- Robbery
- Assault
- Theft
- Vandalism/Destruction of Property
- None
- Other (Please Describe) \_\_\_\_\_

During the past year that is, between last April and now, please indicate if someone close to you has been the victim of any of the following crimes. (Check all that apply)

Burglary

Robbery

Assault

Theft

Vandalism/Destruction of Property

None

Other (Please Describe) \_\_\_\_\_

### **C. Fear of Crime Questions**

Is there any area right around your neighborhood, that is, within a mile, where you would be afraid to walk alone at night? (Check one)

Yes

No

Don't know

12. When you are home alone at night, do you feel safe and secure? (Check one)

Yes

No

Don't know

**For questions 13–20, please place a check mark in the box which most accurately reflects how often you worry about the following situations. If you worry more or less than the options given, check other and specify how often you worry. If you do not have children, check Not Applicable.**

	Daily	Weekly	Monthly	Yearly	Never	Other (Please specify)	Not Applicable
13. Yourself or someone in your family getting assaulted.							//////////
14. Your property being vandalized.							//////////
15. Your home being broken into while someone is home.							//////////
16. Your home being broken into while no one is at home.							//////////
17. Your child being robbed by other youths.							
18. Your child being attacked or beaten up.							
19. Your child joining a gang.							
20. Your child getting addicted to drugs.							



**For questions 21–26, please circle the number that best reflects how likely you think it is that within the next year the following situations will occur (6 being highly likely, and 1 being highly unlikely).**

	Highly Likely	Likely	Somewhat Likely	Somewhat Unlikely	Unlikely	Highly Unlikely
21. Your property will be vandalized.	6	5	4	3	2	1
22. You will be assaulted in your neighborhood.	6	5	4	3	2	1
23. You will be robbed or mugged in your neighborhood.	6	5	4	3	2	1
24. Your car will be stolen from your driveway.	6	5	4	3	2	1
25. Someone will break into your home while you're there.	6	5	4	3	2	1
26. Someone will break into your home while you're away.	6	5	4	3	2	1

**Background Questions**

For the remainder of the survey, select the answer(s) that best describe your personal situation(s)

27. Gender: (check one)

- Male
- Female

28. Race/Ethnicity (check one)

- White
- Non-White, Hispanic
- White-Hispanic
- African American
- Asian
- Other (Please specify) \_\_\_\_\_

29. Year you were born \_\_\_\_\_

30. Current marital status (check one)

- Single
- Married
- Separated
- Divorced
- Widowed
- Live-in Partner

31. Number of dependent children residing with you \_\_\_\_\_

32. Current residential zip code \_\_\_\_\_

33. Length of time living there \_\_\_\_\_ year(s)

34. Highest level of education completed (check one)

- Less than high school diploma
- High School Diploma/GED
- Some college, business or trade school
- Two year degree (A.S., A.A., etc)
- Four year degree (B.S., B.A.,etc.)
- Advanced degree (M.S., M.A.,M.D., J.D., Ph.D., etc.)

35. Annual household income (check one)

- Less than \$30,000
- Between \$30,000 and \$60,000
- Between \$60,00 and \$90,000
- Between \$90,000 and \$120,000
- Between \$120,000 and \$150,000
- Over \$150,000

36. Living situation (check one)

- Privately own
- Rent or lease
- Other (Please describe) \_\_\_\_\_

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**Thank you for your time and participation in this survey!**

APPENDIX C  
INFORMATION SHEET

## Neighborhood Association Survey, Spring 2006

This Information Sheet will explain about being a research subject in an experiment. It is important that you read this material carefully and then decide if you wish to be a volunteer.

The purpose of this interview is to conduct research on your perceptions of crime and safety in various types of neighborhoods, including the neighborhood in which you currently live. The interview should take no longer than 20 minutes.

During the interview I will read you a scenario about a typical neighborhood in the Fort Worth area. After which, you will be asked to answer questions dealing with the aforementioned scenario. Next, you will be given a packet with two more descriptive scenarios describing other types of neighborhoods. And again you will be asked to answer questions for each of the two scenarios, as well as background information about yourself, and your experience if any as a crime victim. The potential risks of this study are that the questions may bring crimes to your mind that you had not previously thought of or worried about. In response to this possibility, I will be available to address these concerns and provide you with information regarding the declining crime rates in Fort Worth over the last several years. One benefit of your participation is the chance to discuss issues that are important to you in your neighborhood. Additionally, the information gathered at this interview will be used to help inform community policies.

All information you gathered in this interview will be kept confidential to the extent of the law. A copy of the records from this study will be stored in a locked facility at the University of Texas at Arlington for at least three (3) years after the end of this research. In the report of this data, all of the responses will be grouped together, and your name will not be attached to your responses or reported anywhere. You may stop participating in the group at anytime without penalty.

If you have questions about the study, contact Bonnie Grohe at 817-272-3318. This research has been reviewed and approved by the University of Texas at Arlington Institutional Review Board for the Protection of Human Subjects. If you have questions about your rights as a research subject, you may contact a representative of the committee at 817-272-1235.

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