Use of Home Protection and Worry About Burglary

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ABSTRACT

USE OF HOME PROTECTION AND WORRY ABOUT BURGLARY

By

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December 2016

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The purpose of this study is to examine whether different types of home protection/guardianship behavior have any influence on worry about burglary, using the Seattle, Washington data collected by Terrance Miethe in 1990. This study also examines whether gender and previous victimization have any moderating effect on the relationship between home guardianship and worry about burglary. Logistic regression was used to analyze the relationships. The findings in the main model showed that four of the seven types of home guardianship significantly predicted higher likelihoods of worry of about burglary. When gender was treated as a moderator, only one type of home protection significantly predicted higher chances of worry for females whereas four types of home protection significantly predicted higher odds of worry for males. When previous victimization was treated as a moderator, findings in the non-victims’ model were the same as findings in the main model. Findings in the previous victims’ model showed that one type of home guardianship predicted higher chances of worry about burglary. Limitations and suggestions for future research are discussed.

Keywords: fear, worry, home protection, home guardianship, protective behavior, previous victims, non-victims, males, females
USE OF HOME PROTECTION AND WORRY ABOUT BURGLARY

By

Tam Thai Nguyen Quach

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree
of
Master of Science
in the
Andrew Young School of Policy Studies
of
Georgia State University

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ACCEPTANCE

This thesis was prepared under the direction of the candidate’s Thesis Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfilment of the requirements for the degree of Master of Science in Criminal Justice in the Andrew Young School of Policy Studies of Georgia State University.

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December 2016
DEDICATION

First, I would like to take this moment to thank my committee at Georgia State University for assisting me through this entire thesis step by step. Next, I would like to thank my peers for providing aid whenever I needed it and pushing me to continue when I felt like giving up. Finally, I would like to thank my family for always believing in me and supporting me from the beginning to the end of this academic journey; without them, my educational achievement would not be possible. Therefore, I would like to dedicate this thesis to my parents as a proof that their support and encouragement was not in vain.
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Chapter 1: Introduction

In 2011, Americans spent approximately $20.64 billion on home security systems. This amount is expected to increase up to $34.46 billion by 2017.¹ This data suggests that more Americans are going to purchase home security in the near future. The home security industry is a multi-billion-dollar business and is heavily advertised to make people feel safer; however, there is little research showing whether these actions will actually lower homeowners’ risk of victimization or cause them to be less fearful or worried about victimization. If home guardianship is not effective at reducing home victimization risk or improving residents’ quality of life by making them less fearful/worried, then citizens may not be able to enjoy all of the benefits that home guardianship is intended to provide. This study aims to shed light on whether home protection behaviors decrease worry about/fear of burglary by examining the relationship between seven types of home guardianship behaviors and worry about burglary.

The dearth of research on the impact of home protection on fear of crime does not mean that fear of crime has not been studied. Indeed, over the past several decades, scholars have conducted many studies on fear of crime (Ferraro, 1995; Ferraro & LaGrange, 1987; Garofalo, 1981; Lewis & Salem, 1986; Warr, 1987). Interest in fear of crime began to rise when victimization surveys found little relationship between crime/victimization rates and fear of crime. According to Ferraro (1995), surveys such as the General Social Surveys (GSS) and the National Crime Victimization Surveys (NCVS) found that females and older-age groups were more likely to be fearful of crime; however, most crime statistics showed that young males were more likely to be victimized. Additionally, researchers found that crime rates or victimization

rates were not the main predictor of an individual’s fear of crime (Lewis & Salem, 1986). Just as important, past studies have produced mixed results on the relationship between prior actual victimization and fear of crime (Ferraro, 1995). As a result, many studies were conducted to find out what really predicts an individual’s level of fear of crime. Such studies examined the predictors of fear of crime including demographics, previous victimization, and perceived neighborhood safety (Garofalo, 1979; Lewis & Salem; 1986; Rountree & Land, 1996b; Skogan, 1987).

It is important to note that there has been a long debate over how to best define, operationalize, and measure fear. Past studies have used measures of emotional fear, perceived safety and perceived risk, while recent studies often have opted to use measures of worry to capture emotional fear about crime. The current study will follow the more recent trend and use worry instead of fear for reasons that will be detailed in the following chapter. For now, it is noted that this review of past studies will use the terminology relevant to each study. For instance, any reference to “fear” means the study used a measure of emotional fear, which is also known as worry about crime. While more recent findings are mixed, historically, people who experience victimization are more likely to be fearful. As a result, they may not happily enjoy their lives. For example, after being burglarized, homeowners might not feel safe living in their house or property anymore because they might think that the house or property could get burglarized again. This feeling of vulnerability may lead residents to feel fear.

Fear of crime is an important topic because it can affect people both physiologically and psychologically (Daigle, 2013). Fear is also an important topic to study because these physiological and psychological reactions, which will be discussed in more detail in the next

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2 The difference between fear and worry will be discussed in the literature review in chapter 2.
chapter, can cause individuals to change their behavior in order to cope with their fear. Researchers have defined two types of behaviors that people employ to protect themselves: avoidance and protective behaviors (Ferraro, 1996). Avoidance behaviors result when fearful/worried individuals avoid situations or restrict their behaviors to protect themselves from harm (Daigle, 2013; Ferraro, 1996). Protective/defensive behaviors involve residents engaging in actions such as leaving the lights on when away from home, installing extra locks or an alarm system and so forth that are intended to protect them from harm (Daigle, 2013; Ferraro, 1996).

Research on coping with fear/worry is limited; however, there is a small body of studies that have investigated which coping strategies people use in response to fear. Jackson and Gray (2010) suggested that although some behaviors are helpful at helping people feel safer, others may backfire and make people more fearful. For example, Liska, Sanchirico, and Reed (1988) found that when people were fearful, they would constrain their behaviors, such as avoiding going out at night or changing their routine activities. Liska et al. (1988) found that people who engaged in avoidance behaviors were more fearful. Simply put, these researchers found that there was a feedback loop between avoidance and fear. In another study about coping strategies, Rader, May, and Goodrum (2007) found that people employed defensive or avoidance strategies to cope with fear; however, while the use of such strategies are logically expected to decrease fear, this may not always be the case. For instance, Rader et al. (2007) found that both avoidance and defensive behaviors increased fear. Interestingly, the researchers also found that defensive and avoidance behaviors were not related to each other (Rader et al., 2007).

As such, the limited amount of research to date that examined the impact of protective/avoidance behaviors on fear of crime has produced mixed findings, with some tendency to find that use of coping behavior may backfire and increase subsequent fear/worry.
The results are also limited because those studies mostly relied upon cross-sectional data. Although one study might find that using behaviors for protection would decrease fear, another study might suggest the opposite. For example, Mesch’s (2000) study found that people who engage in avoidance behaviors reported lower levels of fear; however, Ferraro’s (1996) study showed the opposite effect and found that people who engage in avoidance behaviors were more fearful. As a result, this is one area in the fear of crime literature that needs more attention.

The current study aims to provide more insight into this area by examining the impact of different types of home guardianship actions on the level of worry about burglary separately using data collected in Seattle. Specifically, this study will look at the impact of seven types of home protection on the level of worry about burglary. Chapter 2 will discuss the literature on fear of crime, how it can motivate people to engage in behaviors to protect themselves, and the impact these coping behaviors may have on subsequent fear. Chapter 2 will conclude by outlining the hypotheses of this study. Chapter 3 will go into detail about the data and the methods that will be used for the current study. In chapter 4, the results will be presented. Lastly, the final chapter will provide a summary of key findings, a discussion of their implications, and of limitations of the current study. Furthermore, there will be suggestions for how future research can build upon the current studies’ findings to improve our understanding of the relationship between the use of home protection and the level of worry about crime.
Chapter 2: Literature Review

Fear of crime is an important topic because fear can have both physiological and psychological effects on a person. People cope with fear by engaging in either avoidance or protective behaviors. Many studies in the past have examined what predicts fear, but we know little about the impact of coping behaviors on fear. For example, people may engage in protective behavior to reduce their risk of victimization so they can feel safer; however, engaging in protective behaviors may escalate fear instead. Regarding home protection, as the amount of money being spent on home security increases, it is important to examine whether these home security systems actually work and make citizens feel safer or whether these home security actions are ineffective in reducing fear. Thus, home security systems might not achieve one of their intended purposes.

First, this chapter will begin with defining fear. Second, there will be a section that explains the reason for changing the term from fear to worry. Third, avoidance and protective behaviors will be discussed and findings about those behaviors will also be presented. Fourth, specific types of home guardianship will be introduced. Fifth, control variables that were used in the fear of crime research will be presented. Finally, this chapter will end with seven hypotheses that will be tested in this study.

What is Fear?

Fear is “an emotional reaction characterized by a sense of danger and anxiety about physical harm” (Garofalo, 1981, p. 841). Fear of crime is an important topic of study in criminology because it focuses on the consequences that crime has for both victims and non-victims. Warr (1987) states that “fear is among the most overt social reactions to crime and because its consequences are so prevalent, potentially severe, and easily demonstrable” (p. 29).
When a person experiences a crime, he or she is more likely to be fearful. Fear of crime may affect a person both physiologically and psychologically.

Physiologically, when people experience fear, their body changes to alert them about potential danger (Daigle, 2013). Some examples of body responses to fear are “…heart rate increases, pupils dilate, digestion slows, blood supply to muscles increases, breathing rate increases, and sweating increases” (Daigle, 2013, p. 52). These bodily functions activate automatically without a person’s control, as they are controlled by the autonomic nervous system. These physiological responses allow people to take actions as a response to danger in two ways: either stay and fend off the attack or run away from danger. These two reactions are known as the fight-or-flight response and it helps humans survive harms or dangers (Cannon, 1939).

Psychologically, an individual who is fearful may feel frustrated, stressed, afraid, or angry (Farrall, 2004). Since fear is a negative emotional reaction to the anticipation of crime, an individual who is constantly afraid of being victimized is likely to experience more stress than a person who is not afraid. This negative emotion might amplify as the individual keeps thinking about being victimized and plays a role in explaining why some people are more stressed about crime than others. According to Ross (1993), fear could negatively affect people’s subjective health and quality of life. High levels of fear could increase citizens’ psychological distress and decrease their outdoor physical activity, such as walking. In turn, higher levels of psychological distress and less walking would decrease people’s health (Ross, 1993).

Fear of crime is also an important topic to study because the physiological and psychological reactions noted can cause individuals to change their behavior in order to cope with their fear. Researchers have defined two types of behaviors that people employ to protect
themselves: avoidance and protective behaviors (Ferraro, 1996). When individuals engage in avoidance behaviors, they avoid situations or restrict their behaviors to protect themselves from harm (Daigle, 2013; Ferraro, 1996). An example of avoidance behavior would be refusing to go out alone at night or avoiding certain areas or activities. On the other hand, when citizens utilize protective behaviors, they engage in behaviors that would protect them from harm (Daigle, 2013; Ferraro, 1996). Examples of protective behavior include installing an alarm, having extra locks, locking doors when leaving home, leaving lights on when away, putting fences around the house, carrying a handgun, or having a dog for the purpose of guarding the house. It is possible that an individual who is afraid of his or her home being burglarized is more likely to install extra security around the house in order to ensure that their safe haven is well protected. Regarding home protection, some protective behaviors could change the physical appearance of the property. For example, fences not only act as barriers to block potential offenders from invading but also change the appearance of the house.

**Term Adjustment – Fear to Worry**

Fear of crime is a complex area to study because the phrase “fear of crime” has many different meanings. Early researchers conceptualized fear of crime as one broad idea that included worry, anxiety, or concern over safety (Rader, 2004). As time passed, researchers argued that fear was different from concern for one’s safety. As a result, scholars conceptualized concern for one's safety as perceived risk (Rader, 2004).

Fear is different from worry about crime in that worry is the emotional aspect of fear whereas fear is a broad concept that consists of both cognition and emotion (Ferraro, 1995). The cognitive aspect of fear is known as perceived risk. Perceived risk is referred to as an individual’s estimates of his/her likelihood of being victimized, and this estimation/judgment
process involves cognition (Ferraro & LaGrange, 1987). Although fear of crime has two dimensions, scholars commonly thought of fear as an emotion rather than a cognition, and measures of fear were designed with the intention of capturing the emotional aspect. Early research used the term “fear” and referred to it as an emotion; however, fear is a broad concept, and newer research often has decided to use the term “worry” so that they could specifically capture the emotional dimension. It is also believed that worrying about crime is a more common and relevant emotional reaction to perceived victimization risk than being truly fearful, afraid or scared of crime.

Ferraro and LaGrange (1987) stated that one of the major problems of measuring fear of crime is that it is often classified into two aspects: cognitive and affective. The cognitive continuum of fear includes judgments of risk (also known as perceived risk) of crime, whereas the emotion continuum is composed of emotion (Ferraro & LaGrange, 1987). However, Ferraro and LaGrange (1987) argued that fear of crime is limited to only the emotional aspect and not the perception of risk facet based on the premise that “fear of crime is a negative emotional reaction to crime or the symbols associated with crime” (p. 72).

Since the concept of fear of crime is often ambiguous, the measurement used in earlier research might not have accurately captured fear of crime. Ferraro and LaGrange (1987) stated that the measurement used by the National Crime Survey (NCS) is better at evaluating perceived risk of crime than fear of crime. The question “How safe would you feel walking alone at night in your neighborhood” (Liska et al., 1988, p. 830) might be a better measure of perceived risk because the phrase “How safe….” is asking a person to evaluate his/her likelihood of being victimized. This question does not ask an individual to express his/her emotions about crime. A person may recognize that it could be really dangerous to walk alone at night but, at the same
time, this same individual may not have any fear of walking alone at night in his/her neighborhood.

The question in Miethe’s (1991) survey which will be used in my study, “How about someone breaking into your home and stealing your property? Would you say you worry or think about this...” (See Appendix A), was designed to capture the emotional aspect of fear. This measure is more aligned with what other scholars have agreed upon defining as fear in older research (e.g., Ferraro, 1995; Ferraro & LaGrange, 1987; Garofalo, 1981). Research has supported the notion that perceived risk (cognitive assessment) is different from fear (emotional reaction). Specifically, LaGrange, Ferraro, and Supansic (1992) found that although perceived risk is an important predictor of fear, the two are not perfectly correlated. LaGrange et al.’s (1992) finding also supported the distinction between perceived risk and fear of crime. Moreover, Rountree and Land (1996b) found perceived risk of crime to be distinct from fear of crime, especially fear of burglary.

The preceding discussion shows that the concept of fear of crime has evolved over time. Fear of crime is a broad concept that includes both cognition and emotion (Ferraro, 1995); however, research on fear today tends to focus on the emotional forms and uses the cognitive forms (i.e., perceived risk) as a cause/predictor of fear (see Rader, 2004). Recent researchers such as Jackson and Gray (2010) and Rengifo and Bolton (2012) have used the term worry instead of fear to capture the emotional aspect of fear. For instance, although fear of crime is more aligned with the emotional aspect, Rengifo and Bolton (2012) still recognized that fear has different aspects: emotion (commonly agreed by scholars as fear) and cognition (perceived risk). Thus, the term “fear of crime” may not best portrays the emotional aspect. As a result, Rengifo and Bolton (2012) used the term “worry” to represent the emotional aspect of fear. Similarly,
Jackson and Gray (2010) also used the term “worry” to measure emotional fear in their study. Farrall (2004) also suggested that the term “fearful” can be replaced with the term “worried” when measuring an emotional response to crime.

It is important to be clear about which measure is being used in studies of “fear of crime” as there is some confusion in past studies resulting from mislabeling of the measures actually used (Hinkle, 2015). Although worry and fear are different, many studies have used the term “fear” in their titles and discussions of findings, when they actually used measures of perceived safety, perceived risk or worry about crime. For example, Jackson and Gray’s (2010) article was titled “Functional fear and public insecurities about crime,” but the researchers actually used measures of functional and dysfunctional worry about crime in their study. Similarly, Gray, Jackson, and Farrall (2011) also titled their research “Feelings and functions in the fear of crime: Applying a new approach to victimisation insecurity” but measured worry in their study. Similar to the scholars mentioned above, Rountree and Land (1996b) also have “fear” in their title but measured worry in their study. The mislabeling of measures used may cause readers to wonder whether researchers are measuring fear or worry. Since the term “worry” is increasingly used by newer research to measure the emotional aspect of fear, I am going to use a measure of worry about burglary in the current study. Although worry is the measure used in my study, my review below will use the terms relevant to each study as I want to clearly indicate what concept was actually used in each study.

Avoidance and Protective/Defensive Behavior

When people become fearful of crime, they might change their behaviors and engage in different strategies to cope with their fear. There are two commonly identified types of behaviors that people can employ to cope with fear: avoidance/constrained and protective/defensive. The
current study only focuses on protective behavior so avoidance behavior will be briefly discussed.

Miller (2003) suggested that fear might lead people to isolate themselves from others, change their daily routine activities, refuse to be alone by themselves or avoid going out at night. These types of actions often have been referred to as avoidance/constrained behaviors, and serve as one method for people to attempt to reduce their fear (Liska et al., 1988). Garofalo (1981) stated that avoidance behavior is any behavior that would decrease the chance of a person being exposed to crime, such as avoiding or staying away from situations where one believes that a crime is likely to occur. The purpose of avoidance behavior is to decrease the chance of a person being victimized. An example of avoidance behavior would be a person avoiding going out alone at night or avoiding going to places with no streetlights by him/herself.

Another strategy that individuals might engage in when they are fearful is protective behavior. According to Garofalo (1981), protective behavior is any behavior that “seeks to increase resistance to victimization” (p. 847). Another term for protective behavior is defensive behavior (Daigle, 2013; May et al., 2010). Perhaps the difference in terminology usage is due to the time period – older research tends to use the term protective behavior while newer research mostly uses the term defensive behavior. Rader et al. (2007) found that fear of crime would encourage homeowners to employ protective/defensive behaviors.

There are two commonly discussed types of protective behavior: home protection and personal protection. Home protection is any action an individual takes to reduce the chance of his/her home being victimized (i.e., burglary). This action could include purchasing a home protection device or increasing usage of an existing device (Garofalo, 1981). Examples of home protection include installing burglar alarms, replacing old locks, and installing security lights.
(Ferraro & LaGrange, 1987). Personal protection is any action that an individual employs other than avoidance behavior to reduce the chances of becoming a victim when he/she encounters dangerous situations (Garofalo, 1981). Examples of personal protection include carrying a gun and having a dog for the purpose of self-protection (Luxenburg, Cullen, Langworthy, & Kopache, 1994).

In the past, measurements and categories of personal and home protection have varied greatly across studies and this is a problem because it caused confusion in the fear of crime research. For instance, Garofalo’s (1981) study suggested that personal protection is different from home protection and provided detailed reasons, while Rader et al.’s (2007) measurement implied that personal protection is not so different from home protection. As an example of even the same item being classified differently, Garofalo (1981) suggested that owning a dog is a type of personal protection, whereas Rader et al. (2007) proposed that dog ownership is a type of home protection.

Moreover, not all studies are as clear as Garofalo’s (1981) because many studies tend to group personal and home protection together, and simply label the variable as protective behaviors. Besides Rader et al. (2007) grouping of dog ownership with installing locks and burglar alarms into household precautions, Lab (1990) and May et al. (2010) also grouped dog and gun ownership with installing burglar alarm and installing multiple locks on door as a measure of protective behaviors; however, Lab (1990) did not state that their measure was protective behavior but instead labeled the measure “crime-preventive actions” (p. 472). Similarly, May et al. (2010) used the term defensive behaviors instead of protective behaviors. Although Lab (1990) and May et al. (2010) used different terms, the researchers were still measuring what are more commonly referred to as protective behaviors. Furthermore, Lab
(1990) explained that since crime prevention is operationalized in many different ways, various researchers have used different techniques in their studies. Thus, the results were varied and it is very difficult for researchers to compare results across studies.

Another problem with measuring crime prevention techniques is that researchers have been inconsistent with which techniques they included in their scale measures (Lab, 1990). For example, some studies used single-scale measures by combining multiple items into one variable and labeling it as defensive/protective behavior (e.g., May et al., 2010), while other studies used multiple scales by including personal and home protection as separate variables measuring protective behavior (e.g., Lab, 1990). Still, there was one study that used single items such as installing extra locks on doors as a measurement for protective behavior (Mawby, 1999). Despite the difference in measurement, the purpose of those studies was the same - they analyzed the relationship between protective behavior(s) and fear of crime.

Perhaps not having a fixed rule for measuring protective behaviors could be a good thing because it allows researchers to come up with different strategies or develop newer methods to investigate protective behaviors in their research. Different measurements would add more fluidity to protective behavior studies and, with more studies done differently, knowledge about protective behavior would expand. As will be detailed in the following chapter, the current study will not use a scale measure (combining multiple variables into one index variable), but instead will examine the types of home protective behaviors individually. This will add to our understanding about the relationship between worry and specific types of protective behaviors, which may be masked in past studies that used scale measures.
Do Avoidance and Protective Behavior Reduce Fear of Crime?

As noted above, when humans become fearful, they may engage in avoidance and/or protective behaviors to cope with fear, but we do not know whether people worry more or less after using them. Garofalo (1979) found that although females and older citizens have higher levels of fear than their counterparts, their rates of victimization are low. Garofalo (1979) implied that fear of crime is not necessarily always bad but can be good sometimes because it may lead people to take actions to prevent victimizations. Therefore, fear/worry and coping behaviors can either be functional (good) or dysfunctional (bad).

According to Jackson and Gray (2010), functional fear results when people who experience fear engage in behaviors to protect themselves and those behaviors result in them feeling safer. Their quality of life is therefore not reduced by their fear. For example, people who fear being burgled might be more likely to install an alarm to ensure that their homes are safer. When residents’ homes are well protected, they are less likely to worry about their homes being broken into. In other words, by engaging in protective behaviors, homeowners may reduce victimization risk and decrease their worry. As another example, DeFronzo (1979) found that people who carried handguns for the purpose of self-protection had lower fear of being victimized than people who did not carry a handgun. In a sense, fear could be productive because it may encourage people to take precautions to protect themselves, and, as a result, the quality of their lives would improve.

In contrast, fear could also be dysfunctional. Dysfunctional fear results when people engage in behaviors that are supposed to make them feel safer, but their coping behaviors backfire and increase their fear of crime (Jackson & Gray, 2010). As a consequence, people may experience more stress and their quality of life would be reduced. For example, every time an
individual sets an alarm, the alarm might remind the individual of a burglary or a potential burglary. When a person thinks more about a crime or a potential crime, he/she is likely to experience more stress. Similarly, avoidance behaviors may negatively impact people’s quality of life. For example, people who avoid going out alone at night might feel disconnected from the outside world because they do not get a chance to engage in activities that they enjoy. In a sense, engaging in behaviors for protection might paralyze some people, thereby adversely affecting their quality of life. Related to the purpose of the current study, the notion of functional and dysfunctional fear illustrates the importance of looking not just at what predicts fear of crime and/or use of protective behaviors but to also study the impact of taking protective actions on worry about/fear of crime and other outcomes such as quality of life.

Home protection/guardianship is the main focus of my study, thus avoidance behavior and personal protection (a type of protective behavior) will only be briefly reviewed. First, findings about avoidance behaviors are mixed. While some researchers found avoidance behavior to be associated with higher levels of fear (Ferraro, 1996; Liska et al., 1988; Markowitz, Bellair, Liu, & Liska, 2001; Rader et al., 2007; May, Rader, & Goodrum, 2010), other researchers found avoidance to be negatively related to fear of crime (Garofalo, 1979; Mesch, 2000). Thus, whether or not engaging in avoidance behavior is helpful at reducing fear of crime still remains a mystery.

Switching to personal protection, more studies tend to focus on whether or not fear predicts personal protection than whether personal protection predicts fear. While some studies showed that fear would predict personal protection, such as purchasing guns (Hill, Howell, & Driver, 1985; Whitehead & Langworthy, 1989), one study showed personal protection to be a predictor of fear of crime (Defronzo, 1979). Although DeFronzo (1979) found that fear did not
motivate people to purchase guns, interestingly, the researcher did find that having a handgun decreased people’s fear of crime.

Shifting to the literature on home protection, which is the main focus of my study, Rountree and Land (1996a) used the 1990 victimization survey data collected in Seattle, Washington to examine the impact of home protection behaviors on perceived risk. The data consisted of 5,302 individuals, but the researchers deleted missing cases, leaving 5,090 as the final number of individuals for their analysis (Rountree & Land, 1996a). The dependent variables were crime risk perception and restricted routine activities (Rountree & Land, 1996a). Rountree and Land (1996a) stated that crime risk perception is a cognitive dimension of fear, and measured it as “whether or not the respondent perceives his or her neighborhood to be either somewhat or very unsafe from crime at the time of the survey” and dummy coded as “0=safe and 1=unsafe” (pp. 156-157). The second dependent variable, restricted routine activities, was measured by the number of precautionary measures used by respondents at the time they take the survey (Rountree & Land, 1996a). Precautionary measures included locking doors, installing windows bars, extra locks, burglar alarms, leaving lights on when away, having neighbors watch home when away, joining a crime prevention program, owning a dog, and owning a weapon (Rountree & Land, 1996a). Although Rountree and Land called them precautionary measures, in today’s context, they are known as home protection.

One of the independent variables in Rountree and Land’s (1996a) study was patterns of guardianship, which consisted of safety precautions and guardianship. The number of safety precautions was used as both a dependent variable and an independent variable. The difference is that when safety precautions was treated as a dependent variable, it measured behaviors that respondents engaged in at the time of the survey. When treated as an independent variable, safety
precautions measured behaviors that respondents employed in the two years prior to taking the survey. In the latter case, when used as an independent variable, safety precautions did not include installing windows bars or locking doors in the measure.

As for guardianship, it consisted of physical and social dimensions (Rountree & Land, 1996a). The physical dimension of guardianship was measured by the number of guardianship barriers, which included the presence of a tall fence or hedge and an empty house or vacant property next door (Rountree & Land, 1996a). The scholars suggested that more physical guardianship barriers would reduce the effectiveness of safety precautions, which is home guardianship. The social dimension of guardianship was measured as whether or not respondents lived alone (Rountree & Land, 1996a). Rountree and Land (1996a) suggested that if more people lived in households, then respondents were more likely to have more human guardians. Rountree and Land (1996a) found that more safety precautions were associated with higher levels of perceived risk and found that guardianship barriers were positively related to perceived risk. The results suggested that respondents that had both safety precautions and guardianship barriers had higher levels of perceived risk even though safety precautions are supposed to lower people’s perception of risk.

In a second study, Rountree and Land (1996b) used the same data set that they used in their (1996a) research and measured both perceived crime risk and burglary-specific fear. Burglary-specific fear was measured as “whether or not the respondent worries at least once a week about his/her home being burgled” and was dummy coded as “0=no, 1=yes” (pp. 1357-1359). Perception of crime/victimization risk was measured as “whether or not the respondent perceives his/her neighborhood to be either somewhat unsafe or very unsafe from crime” and was dummy coded as “0= safe, 1= unsafe” (Rountree & Land, 1996b, pp. 1357-1359). In other
words, Rountree and Land (1996b) measured both cognitive and emotional fear, with perceived risk being the cognitive fear and burglary-specific fear being the emotional fear.

One of the independent variables in Rountree and Land’s study (1996b) was guardianship, or any behavior that would effectively prevent respondents from being victimized. This variable consisted of two measures – safety precautions and guardianship barriers. The scholars used an index scale to represent the number of safety precautions that respondents employed in two years prior to taking the survey (Rountree & Land, 1996b). Safety precautions included the following:

Use of locks on doors, installation of extra locks (e.g., deadbolts locks or chains), use of a light-timer device or leaving lights on, membership in a crime-prevention program, ownership of a burglar alarm or security system, ownership of a dog, ownership of a weapon, or having neighbors watch property when away (p. 1358).

Although Rountree and Land (1996b) labeled their measure as safety precautions, this measure in today’s parlance is generally known as home protection or home guardianship.

As for the second measure of guardianship, Rountree and Land (1996b) used an index to represent the number of guardianship barriers a respondent has at his/her home. Guardianship barriers included “the presence of a tall fence or hedge and the presence of an empty house or vacant property next door” (Rountree & Land, 1996b, p. 1358). The researchers stated that the more barriers a respondent has around his/her home, the more likely that those barriers will prevent neighbors from providing effective guardianship (Rountree & Land, 1996b). In other words, guardianship barriers will reduce the effectiveness of one type of safety precautions – having neighbors watch the home when the owner is away. To put it another way, Rountree and Land (1996b) included two opposite measures of guardianship with one measures the
effectiveness of guardianship (safety precautions) and the other measures the ineffectiveness of guardianship (guardianship barriers).

Moving toward the findings, Rountree and Land (1996b) found the same results for both safety precautions and guardianship barriers on perceived risk as they did in their prior (1996a) study mentioned above. Shifting to the findings on emotional fear, Rountree and Land (1996b) found that using safety precautions and guardianship barriers (which reduced the effectiveness of precautions) were related to higher levels of fear of burglary. This was the case even though Rountree (1994) had found that safety precautions reduced actual burglary victimization in a prior study.

Given that the 1990 victimization survey data in Seattle, Washington was a single-wave survey and was not a time-series survey, Rountree and Land’s (1996a, 1996b) studies were cross sectional. Therefore, a limitation of their studies was that the scholars were not able to establish the idea that home guardianship predicts fear (cognitive and emotional) of crime; rather, they were only able to establish that home guardianship and fear have an association. Despite this limitation, Rountree and Land’s (1996b) research is one of a few studies that not only examined home guardianship on fear of crime and it is perhaps the only study that examined both cognitive and emotional aspects of fear of crime. This is an important contribution to the fear of crime literature because there are more studies that set fear of crime as the predictor and home guardianship as the dependent variable in their models and measure either cognitive or emotional fear but not both (e.g., Lab, 1990; Reid, Robert, & Heather, 1998). The results from Rountree and Land’s (1996b) study provide greater insight on how the effect differs between the relationship of home guardianship and different dimensions of fear.
Rader et al. (2007) collected data in Kentucky in 2003 via telephone surveys. The initial sample was 7,614 respondents, but the final sample consisted of 2,091 respondents with a response rate of 27.5 percent. In this study, fear of victimization, perception of risk, and defensive behaviors were each dependent variables in various models (Rader et al., 2007). To measure fear of victimization, the researchers provided respondents with six statements and asked them to rate their fear through Likert-scale responses. The Likert-scale options ranged from “(strongly agree=4, somewhat agree=3, somewhat disagree=2, and strongly disagree=1)” (Rader et al., 2007, p. 485). The six statements were composed of statements about fear of different types of crime, and each statement started with “I am afraid…” (Rader et al., 2007, p. 503). For example, the first statement was “I am afraid someone will break into my house while I am away” (Rader et al., 2007, p. 503). The remaining statements asked whether respondents were afraid of rape, being attacked by someone with a weapon, afraid to go out at night because they might get victimized, murder, and have their money/possessions taken from them (Rader et al., 2007). In today’s context, Rader et al.’s (2007) fear of victimization measure is the measure of emotional fear.

To measure the perception of risk, Rader et al. (2007) asked respondents to estimate the likelihood that the seven different types of crime will occur to them in the next 12 months. The responses were also recorded on a scale of 1 to 10, with 1 meaning “not at all likely” and 10 meaning “very likely” (Rader et al., 2007, p. 486). The responses were indexed, so the scores ranged from 7 (very low risk) to 70 (very high risk) (Rader et al., 2007). Each question of the perception of risk started with “Someone…” (Rader et al., 2007, p. 504). The first question asked respondents to estimate their chances of being victimized by “Someone breaking into your home and taking something or attempting to take something” (Rader et al., 2007, p. 504). The
remaining type of crimes that respondents were asked about included someone: stealing their motor vehicle, stealing their items without using force, taking or attempting to take something from them by force, beating them with a club, knife, gun, or other weapon, threatening them with fist, feet, or other bodily attack, and forcing or attempting to force them to have sexual intercourse against their will (Rader et al., 2007). The perception of risk measure in Rader et al.’s (2007) study is known as a measure of cognitive fear in current terminology.

As for the defensive behaviors measure, Rader et al. (2007) listed different types of items and asked respondents whether if they had added those items to their homes in the past 12 months for security purposes. The types of defensive behaviors included installation of outdoor security lights, door bolts, a gun, extra door locks, a guard dog, electronic light timers, window guards, burglar alarms, and police department identification stickers (Rader et al., 2007). Although defensive behaviors were not listed as an independent variable, Rader et al. (2007) treated it as an independent variable in two out of their six models. In one model, Rader et al. (2007) regressed perceived risk, which is cognitive fear, on defensive behaviors. In another model, the researchers regressed fear of crime, which is emotional fear, on defensive behaviors. Similar to Rountree and Land (1996b), in Rader et al.’s (2007) regression analyses, the researchers found that defensive behaviors significantly predicted higher levels of fear of crime. In addition, Rader et al.’s (2007) study also used a single wave of survey, which indicates that their data was cross-sectional. Despite the limitations of cross-sectional data, Rader et al.’s (2007) study is important because it is one of the few studies besides Rountree and Land’s (1996b) research that examined home protection behaviors on emotional fear of crime.

May et al. (2010) completed a follow-up study to Rader et al.’s (2007) study. This study used the same data and variables as the Rader et al.’s (2007) study; however, May et al. (2010)
performed the analyses separately by gender. This study found an increase in defensive behaviors to be associated with higher levels of perceived risk, which is considered as cognitive fear, but the association was not significant. As for the emotional fear aspect, May et al. (2010) found that home guardianship significantly predicted higher levels of fear of crime for females, but not for males. This result indicates the important of examining the potential moderating effect of gender on home guardianship and fear of crime. Besides May et al.’s (2010) and Rountree and Land’s (1996b) studies, there is no study that I can identify that examines home guardianship on different dimensions of fear. These two studies are important because they showed that the effect of home guardianship on emotional fear can be different than on cognitive fear. As reviewed above, although home guardianship was positively related to both perceived risk and fear of crime, it was only significantly related to fear of crime.

Lastly, in terms of research using longitudinal data to examine home guardianship and fear of crime, I could not identify any study that had a true time-order analysis; however, there was a study that had some limited time-ordering. Since the methodology in this study was weak, I will only review it briefly. Mawby (1999) examined a crime prevention program called the Homesafe program in Plymouth, Massachusetts, to see whether burglary rates and fear of burglary decreased after its implementation. The Homesafe program had two phases. Phase one of the Homesafe program focused on a high crime area by providing free service to anyone that was not able to afford home protection. Phase two of the Homesafe program focused on older people in areas that were not covered in phase one. The Homesafe program also provided free service for older people (Mawby, 1999). The Homesafe program consisted of five main elements: police doing a security check, extra security locks installed on doors and windows, smoke alarms, property markings, and crime prevention leaflets (Mawby, 1999). Extra security
locks on doors and windows and property markings are two types of home guardianship in today’s language.

Mawby (1999) found that the Homesafe program reduced people’s worry about burglary; however, the result should be viewed with caution because the methodology was weak. First, this study only had very limited accounting for time-ordering. Specifically, the researcher surveyed respondents, on average, six months after the program was implemented, and simply asked them if they worried less about burglary since the extra security was installed (Mawby, 1999). The reason why this study is not considered to have a true time-order is because the researcher did not ask the respondents about their fear of burglary before they received the program. So, Mawby (1999) could not compare respondents’ level of fear before and after the Homesafe program was initiated. Second, there was no control group (the group that did not receive the Homesafe services); therefore, a comparison between a treatment and control group was not possible, which raises the question of whether the Homesafe program really worked (Mawby, 1999). In other words, since there were no pre-intervention measures or comparison groups, there was no true test of Homesafe’s impact. The people that Mawby (1999) interviewed simply stated that they felt safer after having extra security installed.

In 2004, Mawby also conducted a follow-up study. This study was largely the same as the study conducted in 1999. The only difference is that the 2004 study had somewhat of a comparison group to the Homesafe program. Mawby (2004) compared Homesafe program, which was labeled as the limited package, to the Homesafe program and Senior Link, which was labeled as the combined service. The Homesafe program included all the elements that were listed above in the Mawby’s (1999) study. The Senior Link service provided older citizens with a 24-hour security alarm system, which is known as a burglar alarm. Mawby (2004) found that
those with the combined package worried about burglary less than those with just the limited package; however, this result also should be viewed with caution because of the limitations noted in Mawby’s (1999) earlier study (i.e., no true control group or pre-intervention measures).

**Specific Types of Home Guardianship**

As noted above, there is relatively little research examining the impacts of use of home protection on fear of/worry about crime. Another limitation of this research is most studies use index scale measures of home protection, so we know even less about whether certain types of home protection (i.e., a burglar alarm or installing extra locks) impact worry differently. As my study aims to shed light on this issue by examining specific types of home protection, I below review types of home protection behaviors commonly used in past studies, and summarize findings about their relationship with fear where possible.

Most research included burglar alarms, installing extra locks, leaving lights on, dog ownership, weapon ownership, and having a neighbor watch property when away and other forms of protection in a single scale measure of protective/defensive behavior (e.g., Miethe, 1991; Rountree & Land, 1996a, 1996b; Rader et al., 2007; May et al., 2010). Lab’s (1990) study, on the other hand, used multiple scales to measure defensive behavior, which consisted of two or more scale measures of protective/defensive behaviors. Specifically, Lab (1990) combined dog ownership and guns into a measure of personal security, which could be considered as either personal protection or home protection/guardianship in current terminology. Next, the researcher combined burglar alarms, property markings, multiple locks, and door peepholes into a measure of personal access control/target hardening, which is also home protection/guardianship in today’s context. Lab (1990) then examined whether fear of crime predicted use of personal security, personal access control/target hardening, surveillance, and avoidance separately.
Although Lab (1990) did not examine the impact of defensive behaviors on fear of crime, that study is important because it used multiple scales of defensive behaviors. Besides the studies mentioned above, there is no study that examines each type of home protection/guardianship on fear of crime individually.

Findings about the relationship between protective/defensive behaviors and fear/worry are already reviewed in the previous section above. In addition to those studies, other studies have used protective/defensive behaviors to predict variables such as risk of actual victimization or used different variables to predict use of protective/defensive behaviors. For example, while Lab (1990) used fear of crime to predict protective behaviors, Miethe (1991) used protective behaviors to predict victimization rates. In addition, Reid et al. (1998) used demographics, previous victimization, cognitive and emotional fear to predict use of defensive behaviors.

Fences have been argued to be both an effective and ineffective form of home guardianship/protection depending on the study and the type of fence in question. In a study of factors that could either increase or decrease a house’s vulnerability to burglary, Brown and Altman (1983) found that non-burglarized houses were more likely to have fences than burglarized houses. Brown and Altman (1983) also proposed that fences that set a clear boundary for the property were more likely to reduce the chance of a house being burgled; however, the researchers suggested that a four-foot (or shorter) fence or hedge will not discourage a burglar. Similar to Brown and Altman (1983), Brown and Bentley (1993) suggested that a fence with a clear demarcation, or that clearly marks off the borders, will make it more difficult for a burglar to enter because the burglar has to think carefully and expend more effort when he or she is attempting to burglarize a house. In other words, the researchers implied that a tall fence could provide an effective form of guardianship in term of access control.
Although Brown and Altman’s (1983) and Brown and Bentley’s (1993) studies proposed that a tall fence would provide effective home guardianship, Rountree and Land’s (1996a, 1996b) studies suggested the opposite – a tall fence would make a home more vulnerable to burglary. In their studies, Rountree and Land (1996a, 1996b) argued that a tall fence is a type of guardianship barrier instead of a form of home guardianship. Rountree and Land (1996a, 1996b) asserted that guardianship barriers would decrease the effectiveness of guardianship, meaning that a tall fence would decrease the effectiveness of other forms home protection, such as burglar alarms, multiple locks on doors, or the supervision of neighbors.

The similarity that Brown and Altman’s (1983), Brown and Bentley’s (1993), and Rountree and Land’s (1996a, 1996b) arguments share is the importance of detectability by neighbors or potential onlookers; however, their variables were different. Brown and Altman (1983) and Brown and Bentley (1993) stated that trees will obstruct neighbors’ vision, but fences will not, while Rountree and Land (1996a, 1996b) proposed that tall fences or hedges will restrict neighbors’ vision. Another conflicting point is that Brown and Altman (1983) found that houses with fences were less likely to get burglarized while Rountree and Land (1996a, 1996b) found that houses with guardianship barriers such as tall fences were positively associated with higher levels of burglary.

Furthermore, Deleon-Granados (1999) stated that having gates and fences could create a “fortress mentality,” which in turn would make a neighborhood a scary place to live. A fortress mentality starts when a person thinks that his or her house is a castle that is protected on all sides, which would make it nearly impenetrable. As a result, the castle is safe from harm; however, a castle’s greatest strength is also its weakness - the four walls that protect the castle from intruders also separate and isolate the castle itself from the outside world; therefore, whoever lives in the
castle or fortress would be living in isolation. Thus, the people that live in a castle would be less likely to know what is going on in the outside world. A fortress mentality is when a resident only worries about making sure that his or her home is safe and then stays in it without worrying about or becoming aware of what is going on in his or her neighborhood. Deleon-Granados (1999) suggested that a “fortress mentality” is harmful because it decreases neighborhood social cohesion. When residents only worry about their homes and stay inside, they are less likely to go out, which would decrease their chances of interacting with neighbors; as a result, residents will be less likely to know what is going on in their neighborhood and less likely to form bonds with their neighbors. Most importantly, residents will be less likely to get involved with their community. Another disadvantage of the “fortress mentality” is that since a person only worries about making his or her own home safer, having fences and/or gates around the house might remind him or her that the neighborhood is not a safe place to live in. It is possible that people’s worry about crime would increase as a result. In sum, while there are mixed findings on fences and actual victimization, no study has directly examined the effect of fences on fear of crime. Therefore, my study is going to examine the effect of fences on worry about crime.

In conclusion, we know relatively little about the impacts of use of home protection on fear of/worry about crime. Researchers have gravitated toward focusing on examining what predicts fear of crime and/or the use of protective behaviors, rather than examining the impacts of use of protection on worry about crime. The few findings in the latter area to date are mixed and restrained by limitations of study design and inconsistent measurement of protective behaviors and fear across studies. Before discussing this in more detail, it is necessary to briefly review the findings about other variables that matter in the fear-protective behavior relationship. In short, there is a long list of studies examining factors that predict fear of crime (for review, see
Ferraro, 1995) and some that also examine protective behaviors, which illuminate the variables necessary that must be controlled for when studying the relationship between protective behavior and fear.

**Control Variables**

**Ethnicity.** Findings between ethnicity and fear of crime are varied. While Ortega and Myles (1987) and Haynie (1998) found Blacks to be more fearful of crime than Whites, Rountree and Land (1996b) found Whites to be more fearful than non-Whites. Perhaps the reason for conflicting findings lies in the type of fear of crime measures that were used. Ortega and Myles (1987) and Haynie (1998) measured fear for personal safety while Rountree and Land (1996b) measured fear for home safety. In other words, Ortega and Myles (1987) and Haynie (1998) found Blacks to be more fearful of walking alone at night than Whites, whereas Rountree and Land (1996b) found Whites to be more fearful of their house being burglarized than Blacks. Thus, these findings indicate that fear for home safety may be different than fear for personal safety across ethnicities.

**Previous victimization.** Previous victimization refers to an individual who experienced a crime in the past. Various studies have found that previous victimization and fear of crime are related (Brunton-Smith & Sturgis, 2011; Rountree & Land, 1996b; Skogan, 1987). Additionally, Jackson and Gray (2010) found previous victimization was more strongly related to dysfunctional fear rather than functional fear. Jackson and Gray (2010) suggest that previous victimization is “one of the things that pushes worry about crime from a motivating experience into a damaging experience” (p. 14). In other words, experience with crime will negatively affect people’s fear (i.e., people feel emotionally discomfort or stressed out).
Previous victimization tends to be positively related to fear of crime. Brunton-Smith and Sturgis (2011) found that previous victims of both personal and property victimization were more fearful of crime in general. In addition, Skogan (1987) found individuals with previous property victimization to be more fearful of property crime. Rountree and Land (1996b) found that victims of burglary, which is a specific type of property crime, were more fearful of burglary. On the other hand, Hinkle and Weisburd (2008) found that previous victimization was not significantly related to fear of crime. Perhaps the reason for the inconsistent findings lies in the methods that were used. While Skogan (1987), Rountree and Land (1996b), and Brunton-Smith and Sturgis (2011) recognized personal victimization as a separate variable from property victimization in their measures, Hinkle and Weisburd (2008) combined those two variables into a single variable in their measures.

**Age.** Age is one of several variables consistently used to predict fear of crime; however, findings about age and fear are mixed. Previous research such as Garofalo (1979), Baumer (1979), Ferraro and LaGrange (1987), Warr (1993), and Roman and Chaflin (2008) found that older citizens were more fearful than younger citizens. On the other hand, Baker, Nienstedt, Everett, and McCleary (1983) and Rountree and Land (1996b) found that elderly people were less fearful than their younger counterparts. Similarly, LaGrange and Ferraro (1989) also found that younger people were more likely than older people to fear burglary when away from home. It is possible that younger individuals who do not stay home often are more likely to employ some type of home protection since they tend to be afraid of their house being burgled while they are not home. Moreover, Lab (1990) stated that crime-prevention techniques were more likely to reduce fear among people who use them and discovered that older people were more likely than younger individuals to use crime-prevention techniques. Finally, Roman and Chaflin (2008)
found that older people who were fearful tended to avoid going outside. It is also possible that older people who stay at home often are likely to engage in some type of home protection. Thus, older and younger age groups using home guardianship indicate that home protection is not limited to any specific age group.

Ferraro (1995) found older individuals less likely to be afraid than younger individuals. The findings showed that younger people were more likely than older people to be afraid of several types of crimes, such as burglary while away, and, while at home, sexual assault, murder, attack, and robbery. There was only one situation where age had a negative relationship with fear, and that was older people were more afraid of “being approached by a beggar on the street than younger individuals” (Ferraro, 1995, p. 81). This relationship was only significant for older women, not older men. Ferraro (1995) suggested one of the reasons why many previous studies found higher levels of fear among older people was because measures used to evaluate fear did not differentiate between types of crime.

In sum, inconsistent findings between age and fear have created confusion in the fear of crime literature. While some studies found older people to be more fearful (Baumer, 1979; Garofalo, 1979; Skogan, 1987; Warr, 1993), others found that younger people tended to be more fearful (LaGrange & Ferraro, 1989; Lab, 1990; Ferraro, 1995). Ferraro (1995) offered five possible explanations for the inconsistent findings: “measurement, sampling, data collection methods, analytic methods, and social change” (p. 69).

First, contradictory findings on age and fear could be due to inaccurate measurement in which the questions from the National Crime Survey (NCS) are better at assessing perceived safety rather than fear of crime. The NCS measure uses a single-item indicator "How safe do you feel or would you feel being out alone in your neighborhood at night?" to measure fear
(LaGrange & Ferraro, 1989, p. 703). Ferraro (1995) argued that a single-item indicator alone cannot possibly represent fear of crime because crime is not just one act, but instead, crime is composed of many acts. LaGrange and Ferraro (1989) found that older people reported higher levels of fear than younger people when the NCS measure was used, but not when 11 alternative indicators of fear were used. LaGrange and Ferraro’s (1989) findings showed that older people were less fearful than younger people when using the 11 measures of fear. In addition, younger people were more likely than older people to fear burglary while away from home (LaGrange & Ferraro, 1989). LaB (1990) also found that younger people tended to be more fearful than older people, but the relationship was small though statistically significant.

The second explanation for mixed findings on age and fear is related to sampling. Ferraro (1995) stated that national and regional studies mostly used NCS measures – questions that “do not differentiate among the types of crime” – while the studies that differentiated across types of crimes only used community samples (p. 71). Third, another possibility for the various findings is data collection methods. The NCS “have used face-to-face interviewing while a few have used telephone interviews” (Ferraro, 1995, p. 71). Most surveys that are based on questionnaire or telephone interview showed a negative relationship between age and fear. Ferraro (1995) suggested older respondents might have reported higher level of fear during face-to-face interviews; however, the researcher stated that this hypothesis needs to be tested.

The fourth possibility suggests the differences in findings could be due to various analytic strategies. Findings of a positive relationship between age and NCS measure may be due to studies not controlling for either official or perceived risk (Ferraro, 1995). The fifth possible cause of the different findings is social change. Ferraro (1995) suggested that fear of crime increased from the late 1960s through the early 1980s and then dropped in the late 1980s. Ferraro
(1995) stated that people of all age groups felt that fear of crime became a more serious problem between the early 1970s through the early 1980s. Of the five explanations, perhaps the measurement problem is the most important aspect that needs to be focused on because it would greatly help researchers clear up confusions so that they could better predict what effect age may have on fear, especially fear of burglary (Ferraro, 1995).

**Gender.** Another strong predictor of fear is gender (Warr, 1984; Ferraro, 1995). Generally, females are found to be more fearful than males due to the shadow of sexual assault (Ferraro, 1996). Men have higher chances than women to get victimized by “all types of crime except sexual assault (otherwise known as rape)” (Ferraro, 1995, p. 85). According to Ferraro (1996), rape might act as a "master offense" for women - a rape might occur anytime they are involved in a face-to-face victimization, such as a robbery or a burglary while women are present at home (p. 679). Ferraro (1996) found that fear of rape was strongly related to personal or violent crimes such as murder, assault, and burglary while at home. Since women's fear of rape was related to fear of other crimes, this could explain why women were more afraid of other crimes even though they were less likely to be victimized than men on those crimes.

Although most studies have found that gender is one of the most consistent predictors of fear of crime, one study showed that it might not be consistent for fear of home victimization. Various research has shown that females are more likely than males to be afraid of personal victimization, violent victimization, or crime in general (Garofalo, 1979; Warr, 1984; LaGrange & Ferraro, 1989; Ferraro, 1996; Roman & Chaflin, 2008). On the contrary, Rountree and Land (1996b) found that although women were more afraid of crime in general, women were less fearful of burglary than men. This result indicates that although women are more motivated than men to use protections in general, their guardianship behaviors are more geared toward
preventing face-to-face crimes. On the other hand, men are more likely to use home guardianship than women. The inconsistent findings may make it to be difficult to predict what effect gender has on fear of burglary.

The Current Study

While we know a great deal about what predicts fear of/worry about crime (however it is measured), and a fair amount about what predicts the use of avoidance and protective behaviors, we know much less about the impacts of actions taken to alleviate fear. This is an important shortcoming as there is a reason to believe that fear and defensive behaviors can be functional or dysfunctional in their effects on a person’s quality of life (see Jackson & Gray, 2010). For instance, while installing a burglar alarm may seem a reasonable response to alleviate fear of victimization of one’s home, it could potentially backfire and increase fear by serving as a constant reminder of the risk of crime. Thus, rather than making people feel safer, their fear remains and their quality of life is lessened through that emotion, as well as the hassle of arming and disarming the alarm, the expense to install the system, and monthly fees for monitoring.

Moreover, we know even less about the effectiveness of home protective behaviors in reducing the fear of burglary specifically, which is the type of crime most relevant to that particular defensive action. This is important in and of itself but also because of the fact that while burglary is a property crime that does not create serious personal harm like robbery or battery, Warr (1993) found that it was most feared by citizens in a study that used survey data collected in Seattle. Warr (1993) stated that a serious crime will not be highly feared if people think that the chance of it occurring is small. For example, although robbery is more serious than burglary, it is not highly feared because people think that it occurs less than burglary. As a result, it is important to shed more light on the impact of use of home protection on fear of burglary.
The current study aims to explore this relationship using data from Seattle collected by Miethe (1991). This chapter will end by outlining the hypotheses to be tested in this study. The following chapter describes the dataset used in detail, and outlines the specific variables to be used and the analysis plan for the study.

**Research Questions**

The purpose of the current study is to examine whether specific types of home protection behavior have any influence on worry about burglary. Thus, the study addresses the following research question: Are the use of specific home protection behaviors associated with lowered levels of worry about burglary? This is the assumption, as it is presumed that individuals engage in home protection to reduce their worry about becoming a victim of crime in their home. Another contribution of the current study is examining the impacts of individual types of home protection, rather than combining items into a scale measure. This is important as different types of protective actions may impact worry about burglary differently. This study will also examine whether any impacts of each type of home protection on worry about burglary are moderated by gender or previous victimization.

In terms of gender, each type of home guardianship might have stronger impacts on fear for females than males. In May et al.’s (2010) study, the scholars found defensive behaviors, which are also known as home guardianship, to be positively related with fear/worry for both males and females, but the relationship was only significant for females. One possible explanation for why females worry more than males could be due to the shadow of rape hypothesis. According to Ferraro (1996), shadow of rape results when the fear of rape accompanies the fear of other types of crime. Women thus tend to have higher levels of fear than
men, despite men being more likely to be victimized by all types of crime (except rape) than women (Ferraro, 1996).

Per the shadow of rape hypothesis, although women report that they fear crime, what they really mean is that they fear rape. In other words, women are more afraid of rape than any other type of crime. Ferraro (1996) found that although women were less likely than men to be victimized by other types of crimes aside from rape, they were more afraid of other crimes than men. Ferraro (1996) found that fear of rape was strongly related to fear of murder and women were more afraid of murder than men; however, when fear of rape was controlled for, men were more likely to be afraid of murder than women (Ferraro, 1996). This finding supported the idea that the fear of rape accompanies the fear of other types of crime for women is the reason why women report higher fear of crime than men. Ferraro (1996) also stated that since women have higher rates of being raped than men, they are more afraid of rape than men. Moreover, rape can accompany with other crimes such as robbery or burglary, which is also likely driving higher rates of fear/worry about those crimes by women compared to men.

Moving to the second moderator of this study, non-victims might be more strongly impacted by use of home protection than victims of previous burglary. The reason could be that since residents were not burglarized previously, any type of home protection is more likely to cue them about the risk for a potential break-in. As a result, non-victims’ worry about burglary would elevate, whereas victims are less likely to need such cues as their own personal victimization experience is driving their levels of worry.

The current study specifically tests the following hypotheses based on the logic outlined above. For each of these types of home protection, I will also examine whether the effect is
different for men and women and those who were previously victimized and not victimized. That being said, the hypotheses for this study are stated as follows:

H1: Leaving the lights on while away from home is negatively associated with worry about burglary.

H2: Having extra locks is negatively associated with worry about burglary.

H3: Having a burglar alarm system is negatively associated with worry about burglary.

H4: Owning a dog is negatively associated with worry about burglary.

H5: Having neighbors watch their house/apartment while away from home is negatively associated with worry about burglary.

H6: Having a weapon in the home is negatively associated with worry about burglary.

H7: Having a tall fence or hedge around the home is negatively associated with worry about burglary.

H8: The effect of each type of home guardianship on worry about burglary is stronger for females.

H9: The effect of each type of home guardianship on worry about burglary is stronger for non-victims.

There is a huge literature on fear of crime, but the literature on the relationship between home protection and fear of crime is rare. This specific area of interest is important because although home security is a multi-billion-dollar industry, we know little about whether or not those securities help reduce worry, elevate worry, or have no impact on people’s worry. The following chapter will discuss the data and methods that will be used in my study.
Chapter 3: Data and Methods

The purpose of this study is to examine the impact of specific types of home protection on worry about burglary individually. This study also examines the potential moderating effects of gender and previous victimization on the relationship between home guardianship and worry of burglary. First, data and methods will be discussed to detail when and how the data was collected. Second, the dependent, independent, and control variables will be explained in respective order. Third, the analysis strategy will be provided along with a table of descriptive statistics.

Data and Methods

This study utilizes the “Testing Theories of Criminality and Victimization in Seattle, 1960-1990” dataset collected by Terrance Miethe in 1990. Specifically, this study uses the survey data collected in 1990 because that period is the most recent year in the data. Miethe (1991) collected data via telephone interviews across 100 census tracts in Seattle, Washington. The next section will discuss the methods used in the original data collection. The study also uses data on crime counts at the census-tract level in 1990 to control for Uniform Crime Report (UCR) Part 1 crime rates.

Sampling. The sample consisted of 5,302 residents that lived on 600 city blocks in the 100 census tracts in Seattle (Miethe, 1991). After census tracts were selected, three pairs of city blocks were chosen for each census tract. In other words, six blocks from each census tract were included in the sample. Each pair consisted of a block that had at least one burglary reported to the Seattle Police Department, and, hence, was considered the victim block (Miethe, 1991). The other block of the pair was randomly selected and was adjacent to the victim block (Miethe,
This adjacent block was known as the control block, and it may or may not have had a burglary reported to the police (Miethe, 1991).

**Data collection.** Miethe (1991) used telephone interviews to collect data. Initially, 18 was the maximum number of households selected for telephone interview per block; however, due to a large number of “disconnects,” “no answers,” or “wrong addresses,” Miethe (1991) selected additional households at random as a replacement to ensure there were enough respondents for measuring aggregate rates per block. Five calls were the maximum number of attempts made to contact a respondent per household. When the primary respondent (the person listed in the telephone directory) was not available, another adult in that household was interviewed (Miethe, 1991).

Of 12,303 telephone numbers dialed, 9,250 were residential households (Miethe, 1991). Noncontact telephone or non-residential households consisted of “no answers,” “disconnects,” or “businesses” (3,053) (Miethe, 1991, p. 425). The sample size of 9,250 was reduced even more due to adults in households not being available, wrong addresses, respondents’ being hearing impaired and non-English speakers (2,091) (Miethe, 1991). The remaining number of eligible households was 7,159; the final sample consisted of 5,302 households with a response rate of 74.1% (Miethe, 1991, p. 425).

**Survey instrument.** The data in Miethe’s study were collected using a closed-ended survey via telephone (Miethe, 1991). The “Don’t know/refused” answer choice in the survey is treated as “missing” in the data when creating all variables in the original (Miethe, 1991) and current study. The survey consisted of 215 questions that were administered to the respondents in a single interview (Miethe, 1991). Questions included household characteristics, demographics, perception of disorder in the neighborhood, relationship with neighbors (social cohesion),
previous personal and home victimization, home and personal vulnerability, and personal and home protection behaviors (Miethe, 1991). Since Miethe’s (1991) survey included a vast amount of questions, only questions related to home protection and worry about burglary will be used in my study. A full copy of the original survey is included in Appendix A.

**Dependent Variable – Worry About Burglary**

As noted previously, only some questions from Miethe’s (1991) survey will be used in my study. The dependent variable for my study is a measure of how frequently respondents worried about burglary. Respondents were asked, “How about someone breaking into your home and stealing your property? Would you say you worry or think about this … READ 1-4” (See codebook in Appendix A). The dependent variable is an ordinal variable, with answer choices of “less than once a month,” “once a month,” “about once a week,” and “every day” (Miethe, 1991); however, it was recoded into a nominal dummy coded variable with 0 representing those who reported worrying about burglary once a month or less and 1 being those who worried at least once a week. About 39% of respondents stated that they worried about their house being broken-into at least once a week, and the standard deviation was 0.488. Full descriptive statistics for all variables are provided in Table 1 below (p. 48).

It is important to note that the sample size differs across variables due to the use of listwise deletion. The reason for using listwise deletion was to only include everyone who answered all of the required questions. Although listwise deletion was used, missing values are not a major threat in the current data as the percentage of data missing is quite low and the sample size is relatively large. When checked for missing values, the variable with the highest missing value percentage was “valuables,” which was missing in 4% of cases. The second
highest missing value percentage was 3.8%, coming from the variable “hours last week away from home.” All other variables missing value percentages were 2.3% or less.

**Independent Variables**

The key independent variables in this study are measures of home protection. All of the independent variables are dichotomous because Miethe’s (1991) survey asked whether respondents employed each of those home guardianship techniques in their current home. While past studies tended to combine specific types of home protection measures into an additive scale (representing the total number a respondent used), the current study utilizes the individual measures to examine whether different types of protective actions affect worry about burglary differently. For example, respondents were asked: “Do you currently leave lights on when you’re not at home?” “Do you currently have a burglar alarm or some other electronic device to protect your home from criminals?” and “Do you currently have a weapon in your home for protection?” (See codebook in Appendix A). The independent variables are 1) currently leave lights on when away from home (87%, standard deviation=0.337), 2) currently have extra locks (59%, standard deviation=0.491), 3) currently have burglar alarm (21%, standard deviation=0.409), 4) currently have dog (23%, standard deviation=0.422), 5) currently have neighbors watch home (77%, standard deviation=0.419), 6) currently have weapon in home (25%, standard deviation=0.433), and 7) have a tall fence or hedge around dwelling. As previously noted, some studies suggested having a tall fence around a house can be a form of guardianship while others suggested a tall fence would make a house more vulnerable for victimization. In this study, a tall fence is chosen as a measure of home guardianship because it will be interesting to see whether a tall fence will provide an effective form of home guardianship and make citizens worry less, or whether having it will backfire and make people worry more. Thirty-four percent of residents had a tall fence or
hedge around their dwelling. The standard deviation for tall fence is 0.473. All of the independent variables are dichotomous with the answer choices coded as “No=0, Yes=1”. To sum up the data, leaving lights on was the most used home guardianship behavior, then having neighbor watch home when away was the second most used, while having a dog was the second least used and having burglar alarms was the least used form of home guardianship.

**Control Variables**

Since the independent variables used in this study asked if respondents utilized various kinds of home protections at their current residence, some of the “current home” variables were controlled for in order to establish congruency. In Miethe’s (1991) data, gender was coded as “0=Female, 1=Male.” As noted in the literature review, women are more likely to fear/worry about crime than men. Therefore, this variable was recoded into “0=Male, 1=Female” so that female would not be the reference category. Females are 50% of the sample, meaning that the sample was equally split by gender. The standard deviation for this variable is 0.5.

Age is also important to control for based on past research. Although there was an age variable in Miethe’s (1991) data, the variable was not at a ratio level. Thus a new age variable at a ratio level was created. To calculate the new age variable, respondents’ year of birth was subtracted from the year they took the survey, which was 1990. In other words, 1990 minus respondents’ year of birth equals respondents' age. The new age variable had a range of 17 to 97 with a mean of 48.58 and a standard deviation of 17.95 in the current data. Furthermore, the original “ethnicity” variable from Miethe’s (1991) data consisted of white, black, and other, but in this study, it was recoded into “white=0” (83.9%) and “non-white=1” (14.9%). The mean for ethnicity is 0.15, meaning 15% were non-white, and the standard deviation is 0.358.
As for previous victimization, Miethe (1991) asked several questions about previous victimization but did not have a specific variable called previous victimization. Therefore, two previous victimization variables were created – previous theft victimization and previous burglary victimization. The variable “Property stolen at current home” is treated as a previous theft victimization because a thief could have taken properties or items from outside the house (i.e., yard, porch), and this would not be considered as a burglary (Miethe, 1991); however, this may still motivate homeowners to set up home protection in order to prevent their property from being stolen around or outside of their houses. Respondents were asked “Have you ever had property – like barbecue grills, bicycle, lawn chairs – stolen from your yard or porch?” (See Appendix A). The response options were “0=No” and “1=Yes.” Only 16% of the residents in the study had their property stolen around their current home while 84% did not. The standard deviation for previous theft victimization is 0.367.

Regarding the second type of previous victimization, two burglary victimization experiences variables were combined into one new variable called “previous burglary victimization.” This variable was modeled after measures in Rountree and Land’s (1996a, 1996b) studies in which the researchers combined both attempted and completed break-ins at respondents’ current home two years prior to taking the survey as a measure of previous burglary victimization. The “previous burglary victimization” variable of the current study consists of two victimization variables from Miethe’s (1991) data: break-in at current home and attempted break-in occurred at current home. This variable does not include the “two years prior to taking the survey” part but instead asks if respondents had been previously burglarized at all. The variable “attempted break-in” was measured by the question “Has an attempted break-in occurred at your current home?” (See Appendix A). As for the variable “completed break-in,”
respondents were asked “Has a break-in occurred at your current home?” (See Appendix A). The response options for the variable “previous burglary victimization” included “0=No” and “1=Yes.” These two items were combined to create a new variable representing those who had been victims to either attempted or completed break-ins. Thirty-four percent of the residents had previous burglary victimization experience (attempted or completed) with a standard deviation of 0.475.

In terms of education level, the original variable ranged from grade school to graduate school/professional school; however, this variable was recoded into a dichotomous variable with “1=college and 0=below college.” Seventy-seven percent had a college education while 23% did not. The standard deviation for education level is 0.455. In the original dataset, marital status was a categorical variable ranging from “married/cohab,” “single,” “divorced/separated,” to “windowed.” This data was also dichotomized into married and not married with “1=married” and “0=not married.” In the current data, 55% of the participants are married with a standard deviation of 0.498.

Regarding expensive items in the household, Miethe’s (1991) asked if respondents owned 1) a portable tv, 2) VCR, 3) 35mm camera, and 4) a home computer. Miethe (1991) treated these four questions as four variables. In the current study, these questions were combined into one variable called “valuables” because Rountree (1996b) found that the more expensive household goods people had, the more likely that they were to worry about someone breaking into their house to steal them. The categories for this recoded variable “valuables” were “0=no valuables owned,” “1=1 valuable owned,” “2=2 valuables owned,” “3=3 valuables owned,” and “4=4 valuables owned.” In the current study, “valuables” is significantly related to each type of home protection. “Valuables” has a mean of 2.03 and a standard deviation of 1.179.
Another control variable in this study was indirect victimization which was used to measure indirect previous burglary victimization. Respondents were asked “In the past two years, have any of your close relatives or good friends had their homes broken into or physically attacked?” (See Appendix A). The response options of the variable indirect victimization were “0=No” and “1=Yes.” Forty percent of the participants had friends who were burglarized previously in the last two years. The standard deviation for indirect previous burglary victimization is 0.49. Furthermore, respondents were asked “How many hours do you (work)/(go to school) in an average week?” (See Appendix A). This variable is known as “hours at work/school average week” and was measured by the number of hours that residents spent away from home on an average week. This variable was controlled for because the longer a person is away from home, the more likely he/she is to purchase some types of guardianship for his/her home. The least number of hours that residents spent at work/school in an average week was 0 and the most hours spent was 98. The mean for this variable is 25.06, and the standard deviation is 22.298.

Another variable that was also controlled for a similar idea was “hours last week away from home.” Respondents were asked “Overall, about how many hours last week were you away from your home for work, social, or leisure activities?” (See Appendix A). The idea that both “hours at work/school average week” and “hours last week away from home” share is that the more time that residents spend away from home, the more likely that they will acquire some forms of protection for their home; however, the variable “hours last week away from home” was measured at an ordinal level while “hours at work/school average week” was measured at a scale level. The response options of the variable “hours last week away from home” were reported in ten hour categories ranging from “0=less than 10,” “1=10-19, etc. up to “8=80 or
more.” The percentage of respondents that spent less than 10 hours away from home last week was 19.1%. The percentage of residents that spent 10 to 19 hours away from home was 11.8%. About 8.4% of respondents spent 20 to 29 hours away from home, while 6.0% spent 30 to 39 hours away from home. Slightly over 12% of residents spent 40 to 49 hours away from home, while 12.7% spent 50 to 59 hours away from home. Finally, at the higher end of the scale, 12.0% of residents spent 60 to 69 hours away from home, 8.0% spent 70 to 79 hours away from home, and 9.6% of respondents spent 80 or more hours away from home.

Having children in the household was added as one of the control variables because people with children are probably more likely to be worried about the safety of their home. In Miethe’s (1991) dataset, respondents were asked “How many people in your household are under 6 years old?” This question was coded as “none=0” and “5 or more=5.” In this study, this variable was recoded into “children under 6” because the purpose was to examine whether or not respondents had any children under 6 living in the house. The recode categories were thus “0=No children under 6 living in the house” and “1=One or more child under 6 living in the house.” Only 13% of respondents had children under 6 years old living with them. The standard deviation is 0.338.

Single family home (0=Apartment and 1=House) was included as a control variable. This is because a person living in a home may have more options for home protection compared to a person living in an apartment. When an individual is the owner of a house, he/she can do whatever he/she wants without worry. On the other hand, a renter living in an apartment cannot do much because he/she is renting from an owner and probably has to ask the owner for permission to modify the apartment (as is necessary for many types of home protection). For example, people that live in an apartment may ask their neighbor to watch their place when they
are away but cannot install a burglar alarms or extra locks if the owner does not grant them permission. It could be that the owner may not want the renters to alter his/her property. In the current data, 79% of respondents live in in a house, while 21% live in an apartment. The standard deviation for the single family home variable is 0.407.

Respondents were also asked how long have they had lived at their current address. The variable created from this question is referred to as length at current residence and was measured at a scale level. Length at current residence was controlled for because the longer a person resides in a place, the more likely he/she will be invested in the property and, as a result, will be more likely to engage in some type of security to protect his/her property. The response options for the variable “length at current residence” ranged from “0=Less than 1 year,” “1=1 year,” “4=4 years,” “8=8 years,” and “9=9 or more years.” The mean for this variable is 5.85 years and the standard deviation is 3.251.

In addition, another control variable was perceived neighborhood safety. This is important because studies have shown perceived risk to predict fear of/worry about crime and the use of home protection. Respondents were asked “Do you think your neighborhood is very safe, somewhat safe, somewhat unsafe or very unsafe from crimes and criminals?” (See Appendix A). Perceived neighborhood safety was an ordinal-level variable, and the answer choices ranged from “very safe,” “somewhat safe,” “somewhat unsafe,” to “very unsafe.” The percentage of respondents who perceived their neighborhood to be very safe was 18.7%. The majority of respondents, 57.1%, felt that their neighborhood to be somewhat safe from crime and criminals. On the other hand, 19.7% of residents perceived their neighborhood to be somewhat unsafe while only a small percentage, 4.5%, perceived their neighborhood to be very unsafe from crime and criminals. The last control variable in this study is census-tract level crime rates. Crime rates
raise an interesting question: If a neighborhood has high crime rates, would more residents use home protection? Theoretically speaking, the answer might be yes but the reality might be different - one may see low protection rates in high crime rate neighborhoods. On the other hand, one may also notice high home protection rates in low crime rate neighborhoods - a lot of residents use home protection even though the neighborhood rarely has break-ins or no break-ins at all. This instance usually occurs in high-income areas. The measure of crime rates in the current study is the UCR Part 1 crime rate for 1990 at the census-tract level. The UCR Part 1 crime rate includes the number of reported incidents of homicide, rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson per 100,000 people in Seattle. This variable has a mean of 12,655.7387 with a standard deviation of 13,280.44438. Part 1 crime rates per 100,000 people ranged from 1,973.60 to 95,536.06.

**Analysis Strategy**

The overall hypothesis to be tested in the current study is that each type of home guardianship is negatively associated with fear of burglary. The data and measures detailed above will be used to test the hypotheses outlined at the end of the literature review. First, bivariate analyses will be conducted to explore the relationships between home protection and worry about burglary, as well as testing for any potential multicollinearity issues before moving on to multivariate modeling. Second, logistic regression models will be estimated to examine the relationships between the home protective measures and worry about burglary while controlling for the other independent variables outlined above. Third, this study will examine whether gender and previous victimization have moderating effects on the relationship between each type of home guardianship and worry about burglary. The following chapter presents the results of these analyses.
Table 1. Descriptive Statistics for Dependent Variables, Independent Variables, and Control Variables

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>N</th>
<th>Mean/Percentage</th>
<th>Standard Deviation</th>
<th>Range</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worry at least once a week</td>
<td>5221</td>
<td>39%</td>
<td>0.488</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently leave lights on when away</td>
<td>5263</td>
<td>87%</td>
<td>0.337</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Currently have extra locks</td>
<td>5277</td>
<td>59%</td>
<td>0.491</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Currently have burglar alarm</td>
<td>5217</td>
<td>21%</td>
<td>0.409</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Currently have dog</td>
<td>5274</td>
<td>23%</td>
<td>0.422</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Currently have neighbors watch home</td>
<td>5267</td>
<td>77%</td>
<td>0.419</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Currently have weapon in home</td>
<td>5209</td>
<td>25%</td>
<td>0.433</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Tall fence/hedge around dwelling</td>
<td>5269</td>
<td>34%</td>
<td>0.473</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single family home</td>
<td>5292</td>
<td>79%</td>
<td>0.407</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>5302</td>
<td>50%</td>
<td>0.500</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Previous burglary victimization</td>
<td>5296</td>
<td>34%</td>
<td>0.475</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Previous theft victimization</td>
<td>5301</td>
<td>16%</td>
<td>0.367</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Length at current residence</td>
<td>5248</td>
<td>5.85</td>
<td>3.251</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Number of valuables that respondents have in their home</td>
<td>5092</td>
<td>2.03</td>
<td>1.179</td>
<td>4</td>
<td>0</td>
<td>4</td>
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<tr>
<td>Indirect victimization</td>
<td>5239</td>
<td>0.40</td>
<td>0.490</td>
<td>1</td>
<td>0</td>
<td>1</td>
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<tr>
<td>New age</td>
<td>5296</td>
<td>48.58</td>
<td>17.95</td>
<td>80</td>
<td>17</td>
<td>97</td>
</tr>
<tr>
<td>Have children under 6 living in the house</td>
<td>5298</td>
<td>0.13</td>
<td>0.338</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>5236</td>
<td>0.15</td>
<td>0.358</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Education level</td>
<td>5274</td>
<td>0.71</td>
<td>0.455</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>-----------------------</td>
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</tr>
<tr>
<td>Married</td>
<td>5248</td>
<td>0.55</td>
<td>0.498</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hours at work/school</td>
<td>5261</td>
<td>25.06</td>
<td>22.298</td>
<td>98</td>
<td>0</td>
<td>98</td>
</tr>
<tr>
<td>average week</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1990 Part 1 crime</td>
<td>5302</td>
<td>12,655.7387</td>
<td>13,280.44438</td>
<td>93,562.46</td>
<td>1,973.60</td>
<td>95,536.06</td>
</tr>
<tr>
<td>rates per 100,000</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived</td>
<td>5180</td>
<td>2.10</td>
<td>0.745</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>neighborhood safety</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
</tr>
</thead>
</table>
| 1 - Very safe         | 18.7%
| 2 - Somewhat safe     | 57.1%
| 3 - Somewhat unsafe   | 19.7%
| 4 - Very unsafe       | 4.5% |

| Hours last week       | 5100 | 3.64   | 2.696 | 8  | 0  | 8  |
| away from home        |      |        |       |    |    |    |

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
</tr>
</thead>
</table>
| 0 – Less than 10      | 19.1%
| 1 – 10-19             | 11.8%
| 2 – 20-29             | 8.4%
| 3 – 30-39             | 6.0%
| 4 – 40-49             | 12.3%
| 5 – 50-59             | 12.7%
| 6 – 60-69             | 12.0%
| 7 – 70-79             | 8.0%
| 8 – 80 or more        | 9.6% |
Chapter 4: Results

This chapter will start by discussing the analytic strategy that was used and then will detail findings about the relationships between worry about burglary and each type of home protection/guardianship. After the general findings are explained, findings about the moderating effect of gender on the relationship between worry about burglary with home guardianship will be presented. Lastly, findings about the moderating effect of previous victimization on the relationship will be introduced.

Analysis

Before analyzing the relationship between worry about burglary and home protection, linear regression was conducted in Statistical Package for the Social Sciences (SPSS) to check for multi-collinearity with all the variables (independent, dependent, and control) included in this study. The variance inflation factor (VIF) was used as the indicator of whether the variables were multi-collinear with each other. Pan and Jackson (2008) suggested a strict VIF upper bound of four with values greater than that indicates a high association between variables. In other words, Pan and Jackson (2008) suggested that a VIF above four signifies a potential problem with multi-collinearity and that further exploration is warranted. After checking the VIF on all the variables in this study, multi-collinearity was not a problem. The highest VIF was 2.388, which was for the age variable.

Proceeding to the next step of this study, logistic regression was used because the dependent variable, worry about burglary, was recoded into a nominal dummy coded variable with 0 representing people who reported worrying about burglary once a month or less and 1 indicating people who reported worrying about burglary at least once a week. Since the variable Part 1 crime rate in 1990 was measured at the census tract level, and respondents were nested in
tracts as well, a command in Stata was used to control for clustering and produce robust standard errors in the logistic regression models.

**Results**

Model 1 of this study, which is illustrated in Table 2, shows the effect of each home guardianship variable on worry about burglary without the moderation effect of either gender or previous victimization. Out of the seven types of home guardianship, only four are significantly associated with worry about burglary; however, those associations are positive. Lights, locks, having a weapon and having a fence separately predict higher likelihoods of worrying about burglary at least once a week. For residents who currently leave lights on when they are away from home, their odds of worrying about burglary at least once a week is increased by 1.306 over those who do not leave the lights on. Currently having extra locks on their door increases the odds of worrying about burglary at least once a week by 32% \([(1.32-1)*100]\), compared to those that currently do not have extra locks. As for homeowners who currently have a weapon in their home, their odds of worry are increased by 1.204 compared to those who do not own a weapon. Moreover, residents who currently have a fence around their house have a 16.7% increase in odds of worrying about burglary at least once a week compared to their counterparts who currently do not have a fence. No findings in the main model support the proposed hypotheses, which stated that each type of home guardianship would negatively predict the chances of worry about burglary.

The control variables, previous burglary victimization, previous theft victimization, perceived neighborhood safety, valuables, and indirect victimization, are significantly and positively associated with worry about burglary. For example, previous victims of burglary have a 32.4% increase in odds of worrying over those who were not previous victims of burglary.
Conversely, while female, age, and Part 1 crime rate are also significantly but negatively associated with worry about burglary. For instance, females in the full model have a 16% decrease in the odds of worrying about burglary at least once a week and older resident have higher odds of worrying burglary at least once a week compared to their younger counterparts.

Table 2 – Model 1: Logistic Regression Results of Regression Worry About Burglary On Home Protection and Control Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Odds Ratio</th>
<th>Confidence interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
<td></td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently leave lights on when away</td>
<td>1.306</td>
<td>1.067 - 1.599</td>
<td>0.010*</td>
</tr>
<tr>
<td>Currently have extra locks</td>
<td>1.320</td>
<td>1.161 - 1.500</td>
<td>0.000***</td>
</tr>
<tr>
<td>Currently have burglar alarm</td>
<td>1.114</td>
<td>0.960 - 1.293</td>
<td>0.155</td>
</tr>
<tr>
<td>Currently have dog</td>
<td>0.878</td>
<td>0.752 - 1.025</td>
<td>0.098</td>
</tr>
<tr>
<td>Currently have neighbors watch home</td>
<td>1.132</td>
<td>0.958 - 1.336</td>
<td>0.145</td>
</tr>
<tr>
<td>Currently have weapon in home</td>
<td>1.204</td>
<td>1.034 - 1.402</td>
<td>0.017*</td>
</tr>
<tr>
<td>Tall fence/hedge around dwelling</td>
<td>1.167</td>
<td>1.017 - 1.341</td>
<td>0.028*</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single family home</td>
<td>1.095</td>
<td>0.898 - 1.335</td>
<td>0.370</td>
</tr>
<tr>
<td>Female</td>
<td>0.840</td>
<td>0.738 - 0.957</td>
<td>0.009**</td>
</tr>
<tr>
<td>Previous burglary victimization</td>
<td>1.324</td>
<td>1.148 - 1.527</td>
<td>0.000***</td>
</tr>
<tr>
<td>Previous theft victimization</td>
<td>1.222</td>
<td>1.011 - 1.476</td>
<td>0.038*</td>
</tr>
<tr>
<td>Length at current residence</td>
<td>0.978</td>
<td>0.954 - 1.002</td>
<td>0.069</td>
</tr>
<tr>
<td>Perceived neighborhood safety</td>
<td>1.823</td>
<td>1.648 - 2.017</td>
<td>0.000***</td>
</tr>
<tr>
<td>Hours last week away from home</td>
<td>0.982</td>
<td>0.951 - 1.015</td>
<td>0.282</td>
</tr>
<tr>
<td>Number of valuables that respondents have in their home</td>
<td>1.130</td>
<td>1.066 - 1.199</td>
<td>0.000***</td>
</tr>
<tr>
<td>Indirect victimization</td>
<td>1.577</td>
<td>1.384 - 1.796</td>
<td>0.000***</td>
</tr>
<tr>
<td>New age</td>
<td>0.991</td>
<td>0.985 - 0.996</td>
<td>0.001***</td>
</tr>
<tr>
<td>Have children under 6 living in the house</td>
<td>0.969</td>
<td>0.784 - 1.197</td>
<td>0.769</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>0.903</td>
<td>0.754 - 1.080</td>
<td>0.264</td>
</tr>
<tr>
<td>Education level</td>
<td>0.962</td>
<td>0.832 - 1.112</td>
<td>0.602</td>
</tr>
<tr>
<td>Married</td>
<td>1.096</td>
<td>0.946 - 1.270</td>
<td>0.222</td>
</tr>
<tr>
<td>Hours at work/school average week</td>
<td>1.001</td>
<td>0.997 - 1.006</td>
<td>0.504</td>
</tr>
<tr>
<td>1990 Part 1 crime rates per 100,000</td>
<td>0.999</td>
<td>0.9999853 - 0.9999988</td>
<td>0.021*</td>
</tr>
</tbody>
</table>

N = 4477
Pseudo R² = 0.0814

* p ≤ 0.05
** p ≤ 0.01
*** p ≤ 0.001
In model 1 when the moderation of gender was not included, four individual measures of home guardianship (lights, locks, a weapon, and a fence) significantly predicted higher chances of worrying about burglary. When gender was considered as a moderating effect, locks significantly predicts higher likelihood of worrying about burglary at least once a week for both females and males. Turning to gender-specific findings, having a weapon in the home and having a fence around the house significantly increased the odds of worrying about burglary at least once a week in the male model but not in the female model. Interestingly, while dog ownership did not have significant impact on worry in the full model or the female model, having a dog significantly decreases the chances of worrying about burglary at least once a week for males by 18.3% compared to males who do not own a dog. Potential explanations for these findings will be discussed in the following chapter.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 2: Female N = 2178 Pseudo R² = 0.0912</th>
<th>Model 3: Male N = 2299 Pseudo R² = 0.0768</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently leave lights on when away</td>
<td>1.416 0.069</td>
<td>1.238 0.085</td>
</tr>
<tr>
<td>Currently have extra locks</td>
<td>1.374 0.002**</td>
<td>1.262 0.010*</td>
</tr>
<tr>
<td>Currently have burglar alarm</td>
<td>1.172 0.144</td>
<td>1.069 0.530</td>
</tr>
<tr>
<td>Currently have dog</td>
<td>0.930 0.561</td>
<td>0.817 0.049*</td>
</tr>
<tr>
<td>Currently have neighbors watch home</td>
<td>1.173 0.208</td>
<td>1.138 0.264</td>
</tr>
<tr>
<td>Currently have weapon in home</td>
<td>1.034 0.798</td>
<td>1.322 0.007**</td>
</tr>
<tr>
<td>Tall fence/hedge around dwelling</td>
<td>1.017 0.877</td>
<td>1.331 0.002**</td>
</tr>
</tbody>
</table>

| Control variables                       |                                            |                                         |
| Single family home                      | 1.091 0.551                                | 1.077 0.539                            |
| Female                                  | NA                                         | NA                                      |
| Previous burglary victimization         | 1.311 0.011*                              | 1.339 0.004**                          |
| Previous theft victimization            | 1.438 0.003**                              | 1.034 0.798                            |
| Length at current residence             | 0.993 0.702                                | 0.966 0.063                            |
The second moderation effect explored is the impact of previous burglary victimization on the relationship between home guardianship and worry about burglary. Similar to the gender sample, here the sample is split into respondents who were burglarized previously and those who were not burglarized previously, represented by model 4 and model 5 (see table 4), respectively.

Among the variables in both models, only locks are significantly related to worry for both victims and non-victims and predict higher odds of worrying about burglary at least once a week for both groups. Moreover, locks were the only form of home protection that was significant for previous victims. As for those who were not victims of previous burglary, three additional variables were also related to worry - lights, having a weapon, and having a fence all significantly predict higher probabilities of worrying about burglary at least once a week. It is important to note that the difference between the victims and non-victims model could be due to differing sample sizes (victims=1,554 and non-victims=2,923).,

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived neighborhood safety</td>
<td>1.875</td>
<td>0.000***</td>
<td>1.788</td>
<td>0.000***</td>
</tr>
<tr>
<td>Hours last week away from home</td>
<td>0.999</td>
<td>0.952</td>
<td>0.969</td>
<td>0.149</td>
</tr>
<tr>
<td>Number of valuables that respondents have in their home</td>
<td>1.147</td>
<td>0.000***</td>
<td>1.111</td>
<td>0.019*</td>
</tr>
<tr>
<td>Indirect victimization</td>
<td>1.582</td>
<td>0.000***</td>
<td>1.590</td>
<td>0.000***</td>
</tr>
<tr>
<td>New age</td>
<td>0.990</td>
<td>0.008**</td>
<td>0.992</td>
<td>0.046*</td>
</tr>
<tr>
<td>Have children under 6 living in the house</td>
<td>0.945</td>
<td>0.694</td>
<td>0.985</td>
<td>0.922</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>1.126</td>
<td>0.396</td>
<td>0.749</td>
<td>0.015*</td>
</tr>
<tr>
<td>Education level</td>
<td>0.983</td>
<td>0.876</td>
<td>0.932</td>
<td>0.483</td>
</tr>
<tr>
<td>Married</td>
<td>1.167</td>
<td>0.196</td>
<td>1.048</td>
<td>0.668</td>
</tr>
<tr>
<td>Hours at work/school average week</td>
<td>1.000</td>
<td>0.804</td>
<td>1.002</td>
<td>0.431</td>
</tr>
<tr>
<td>1990 Part 1 crime rates per 100,000</td>
<td>0.999</td>
<td>0.181</td>
<td>0.999</td>
<td>0.027*</td>
</tr>
</tbody>
</table>

*p ≤ 0.05, ** p ≤ 0.01, *** p ≤ 0.001
Table 4 – Logistic Regression Results of Regression Worry About Burglary On Home Protection and Control Variables by Previous Victimization Status

<table>
<thead>
<tr>
<th>Variables</th>
<th>Odd Ratio</th>
<th>P-value</th>
<th>Odd Ratio</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently leave lights on when away</td>
<td>1.191</td>
<td>0.404</td>
<td>1.347</td>
<td>0.034*</td>
</tr>
<tr>
<td>Currently have extra locks</td>
<td>1.262</td>
<td>0.049*</td>
<td>1.353</td>
<td>0.000***</td>
</tr>
<tr>
<td>Currently have burglar alarm</td>
<td>1.160</td>
<td>0.215</td>
<td>1.074</td>
<td>0.471</td>
</tr>
<tr>
<td>Currently have dog</td>
<td>0.833</td>
<td>0.206</td>
<td>0.902</td>
<td>0.309</td>
</tr>
<tr>
<td>Currently have neighbors watch home</td>
<td>1.103</td>
<td>0.554</td>
<td>1.153</td>
<td>0.153</td>
</tr>
<tr>
<td>Currently have weapon in home</td>
<td>1.164</td>
<td>0.283</td>
<td>1.241</td>
<td>0.025*</td>
</tr>
<tr>
<td>Tall fence/hedge around dwelling</td>
<td>1.137</td>
<td>0.279</td>
<td>1.191</td>
<td>0.044*</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single family home</td>
<td>1.193</td>
<td>0.337</td>
<td>1.040</td>
<td>0.750</td>
</tr>
<tr>
<td>Female</td>
<td>0.907</td>
<td>0.399</td>
<td>0.805</td>
<td>0.011*</td>
</tr>
<tr>
<td>Previous burglary victimization</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Previous theft victimization</td>
<td>1.050</td>
<td>0.715</td>
<td>1.428</td>
<td>0.007**</td>
</tr>
<tr>
<td>Length at current residence</td>
<td>0.961</td>
<td>0.094</td>
<td>0.978</td>
<td>0.179</td>
</tr>
<tr>
<td>Perceived neighborhood safety</td>
<td>1.639</td>
<td>0.000***</td>
<td>1.936</td>
<td>0.000***</td>
</tr>
<tr>
<td>Hours last week away from home</td>
<td>0.997</td>
<td>0.908</td>
<td>0.977</td>
<td>0.319</td>
</tr>
<tr>
<td>Number of valuables that respondents have in their home</td>
<td>1.106</td>
<td>0.039*</td>
<td>1.145</td>
<td>0.001***</td>
</tr>
<tr>
<td>Indirect victimization</td>
<td>1.702</td>
<td>0.000***</td>
<td>1.505</td>
<td>0.000***</td>
</tr>
<tr>
<td>New age</td>
<td>0.988</td>
<td>0.023*</td>
<td>0.993</td>
<td>0.031*</td>
</tr>
<tr>
<td>Have children under 6 living in the house</td>
<td>0.885</td>
<td>0.506</td>
<td>1.004</td>
<td>0.975</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>0.765</td>
<td>0.131</td>
<td>0.977</td>
<td>0.838</td>
</tr>
<tr>
<td>Education level</td>
<td>1.018</td>
<td>0.891</td>
<td>0.920</td>
<td>0.361</td>
</tr>
<tr>
<td>Married</td>
<td>1.094</td>
<td>0.493</td>
<td>1.090</td>
<td>0.281</td>
</tr>
<tr>
<td>Hours at work/school average week</td>
<td>1.000</td>
<td>0.860</td>
<td>1.001</td>
<td>0.657</td>
</tr>
<tr>
<td>1990 Part 1 crime rates per 100,000</td>
<td>0.999</td>
<td>0.790</td>
<td>0.999</td>
<td>0.025*</td>
</tr>
</tbody>
</table>

* p ≤ 0.05, ** p ≤ 0.01, *** p ≤ 0.001
In this chapter, the analysis strategy was explained first. Then, findings about whether various types of home guardianship would predict worry about burglary were reported. Finally, the moderation effects of gender and previous victimization on the relationship between different types of home protection and worry about burglary were also presented separately in different tables. Of the seven types of home guardianship, only locks significantly predicted higher likelihoods of worrying about burglary at least once a week in all five models. As for control variables, perceived neighborhood safety, valuables, and indirect victimization were positively and significantly related to worry about burglary. Only age was negatively and significantly related to worry about burglary in every model. In general, home guardianship seems to increase worry about burglary, which is opposite of the proposed hypotheses of this study. There is also evidence of some of these relationships being moderated by both gender and previous burglary victimization. The next chapter will provide a discussion of the meanings and implications of the findings. The limitations of the current study will also be provided, as well as suggestions for future research in this area.
Chapter 5: Discussion

The term fear of crime is ambiguous because fear consists of both emotional and cognitive components. There are a few studies that examine whether emotional fear (worry) predicts use of home protection, but there are rarely studies that examine whether home protection predicts emotional fear (worry). Looking at whether home protection would have any influence on worry about burglary is important because although home security is a multi-billion-dollar industry, we do not yet know whether utilizing home security decreases, increases, or has no impact on homeowners’ worry about burglary.

In this study, Miethe’s (1990) data were used to examine the impact of seven types of home protection on worry about burglary. Of the seven types of home guardianship, four (lights, locks, weapon, and fence) significantly predicted higher likelihoods of homeowners worrying about their homes being burglarized at least once a week. This finding is opposite from the proposed hypotheses, which stated that each of the seven types of home protection should be negatively related to worrying about burglary.

The positive relationship between four types of home guardianship (lights, locks, a weapon, and a fence) and worrying about burglary supports the notion of dysfunctional fear in that engaging in some types of home guardianship may backfire and bring about more psychological harm. In other words, leaving lights on, installing extra locks, having a weapon in the home, and having a fence around the house will induce homeowners to worry about their houses being burgled instead of making them worry less and feel safer. It is possible that when homeowners see extra locks on their doors, a weapon in their homes, leaving their lights on before they go out, or having a fence around their houses, they are reminded of the risk of burglary and, as a result, worry about their homes being burgled. It also could be that if
homeowners do not see these types of home guardianship, then they will be less likely to think about a potential break-in and, thus, less likely to worry about their homes being burglarized.

While four types of home guardianship predicted higher chances of worrying about burglary, the other three types (dog, burglar alarm, and having neighbors watch the house when homeowners are away) did not have any impact on worrying about burglary. Therefore, whether having a dog, a burglar alarm, or neighbors watch the house when away would influence homeowners to worry more or less is still a mystery. It could be that these types of home protection simply do not have any influence on residents’ worry about burglary.

Overall, the seven types of home protection examined in the current study did not help reduce residents’ worry about their home being burglarized. This is interesting, especially as it relates to burglar alarms, because various home security companies advertise that burglar alarms will help residents feel safer; however, the findings in this study showed that burglar alarms did not have any influence on residents’ worry about burglary. Thus, perhaps burglar alarms may not serve one of the many purposes that they intended to. Moreover, citizens did not get to enjoy the intended benefit of reducing worry from six other types of home protection because those protections either had no impact on their worry or made them more worried about their homes being burglarized in the current study.

Finding that having a fence around the house influenced residents to worry more about burglary supports the idea of fortress mentality in that a fence induces residents to focus on protecting their homes and reduces interactions between residents. When residents become less likely to interact with their neighbors, they are less likely to know what is going on in the neighborhood, thus they are more likely to focus on protecting their homes. As a result, every time residents see the fence around their house, they are more likely to worry that their house
might get broken in. Therefore, residents are more likely to think that their neighborhood is a scary place to live in. The fortress mentality further supports the notion of dysfunctional fear (Jackson & Gray, 2010).

When gender was treated as a moderator for the relationship between home protection and worry about burglary, the results showed that only locks significantly predicted higher odds of worrying about burglary for females. On the other hand, locks, a weapon, and a fence significantly predicted higher chances of worrying about burglary at least once a week for males. Owning a dog only significantly decreased the odds of worrying about burglary for males. Finding that both males and females became more worried after they installed extra locks suggests that this method of home protection is particularly likely to backfire and increase worry/fear. It is still unclear why a weapon and a fence around the house would only increase worry about burglary for male residents. Future research should explore these differences across gender in more detail.

When previous burglary victimization was considered as a moderator, the findings in the non-victims’ sample mirrored the findings in the full sample in that lights, locks, a weapon, and a fence significantly predicted higher probabilities of worrying about burglary. As for the previous victims of burglary sample, only one home guardianship variable – locks – significantly predicted higher chances of worrying about burglary. This finding is interesting because one might expect victims who were burglarized previously to be more worried than non-victims when they engage in different types of home guardianship because any of those guardianships could remind them about previous burglary event(s).

A possible explanation for why only one type of home guardianship backfired in the previous victim model is that since those victims have been previously victimized, they are
already worried. Therefore, the guardianship behaviors are less likely to have a strong influence on their level of worry about burglary. In other words, previous victims may not need cues or reminders of victimization risk, such as arming or disarming an alarm system, as their personal victimization experience drives their worry. Similarly, a possible explanation for why more types of guardianship had backfire effects in the non-victim model would be that since non-victims did not experience burglary previously, use of any type of guardianship was more likely to cue them to think about the possibility of burglary. In turn, non-victims are apt to become more worried, which would further support the idea of dysfunctional fear. Thus, engaging in home guardianship would backfire and induce non-victim residents to become more worried about potential victimization.

It is important to note that Mawby (1999) was the only study that looked at an individual type of home guardianship, a burglar alarm, on worry about burglary. This unique characteristic is shared with the current study in that no other study examined the impact of individual types of home protection on worry about burglary. The current study is even more exclusive and contributes to the home protection and fear/worry about burglary research because it examined the relationship between seven different types of home protection on worry about burglary, whereas Mawby’s (1999) study investigated only one type of home protection (a burglar alarm). The current study found that a burglar alarm elevated worry, whereas Mawby’s studies found that a burglar alarm reduced worry. The difference in findings between the two studies could be due to the different age groups included in the samples - the current study included both younger and older age groups whereas Mawby’s (1999) study only included the older age group. Another difference could be due to the location of the study - Mawby’s (1999) study took place in Plymouth, Massachusetts and the current study took place in Seattle, Washington. Seattle is a
unique city (the unique characteristics of Seattle will be discussed below when outlining the limitations of the current study). Another reason for the disagreement in the findings could be due to differences in methodology. Mawby (1999) implemented the Homesafe program and asked how citizens felt after receiving it. In the current study, residents did not receive any type of home guardianship but simply were asked whether they currently used any type of home protection and how often they worried about their home being burglarized.

May et al.’s (2010) study also shares similarity with the current study in that both studies examined the moderation effect of gender on the relationship between home guardianship and worry about burglary. Another similarity is that while May et al. (2010) found females that used defensive behaviors were significantly more worried, the current study also found females that currently have extra locks installed (one type of defensive/home guardianship behaviors) to be more worried. The difference is that while the current study found three home guardianship behaviors (locks, a weapon, and a fence) to be significantly associated with higher levels of worry about burglary in the male model, May et al. (2010) did not find their defensive behaviors scale to be significantly associated with higher levels of worry about different types of crime (e.g., burglary, rape, being attacked by someone with a weapon, murder, personal theft, and afraid to go out at night because the individual might become a victim of crime) in their male model. This disparity could be that May et al.’s (2010) study used a single scale measure of home guardianship while the current study explored individual types of home protection. Another reason might be that the current study only examined worry about burglary while May et al. (2010) examined worry about six different types of crime. The difference in findings, however, could also be due to May et al.’s (2010) study potentially missing more nuanced results by using a scale measure instead of examining individual types of home guardianship.
Limitations

Before concluding, it is important to note the limitations of this study. The first limitation is that the data used in this study was cross sectional, so the direction of the relationship could not be established due to being unable to account for time-ordering. The second limitation is that the data is from 1990, which indicates that the data are 36 years old. Crime was near its peak in at the beginning of 1990, and it dropped dramatically in the mid-90s (94-95) through mid-2000s and has since stayed relatively stable (Blumstein & Wallman, 2006). Since crime rates were high in 1990, this may affect the results of this study and limit generalizability to the present time. Therefore, newer data may provide different and more relevant findings.

The third limitation of this study is potential limited generalizability to other cities due to the uniqueness of Seattle. For instance, the sample was highly educated with 77% of respondents in the sample having some level of college education. Seattle has higher than average levels of education and is unique in various other ways, compared to other major U.S. cities (See Weisburd, Groff and Yang, 2012). For example, Seattle had larger Asian and lower Black populations than the other large U.S. cities (Weisburd et al., 2012). According to Weisburd et al. (2012), the average percentage of the Black population in major U.S. cities in 1990 was 23.6 while the percentage of Black population in Seattle was only 10.1 (p. 21). In 1990, the Asian population in other large U.S. cities, on average, was 5.2 percent, while it was 11.8 percent in Seattle (Weisburd et al., 2012, p. 21). Furthermore, other U.S. cities in 1990 had a lower percentage of college graduates on average (14.1%) when compared to Seattle (24.6%) (Weisburd et al., 2012, p. 22). Additionally, another unique characteristic of Seattle in 1990 is that it had lower poverty rates than other major U.S. cities at 12.0% versus 17.2% (Weisburd et al., 2012, p. 22). Finally, in 1990, Seattle had slightly higher rates of homeowners (46.5%) than
other major U.S. cities (43.9%) (Weisburd et al., 2012, p. 22). As such, caution is needed when trying to generalize the findings of the current study to other settings.

The fourth limitation of this study is that the evidence of a moderation effect of previous victimization could potentially be due to the difference in sample size. The victims’ sample size was 1554 while the non-victims’ sample size was 2923, indicating that there were almost as twice as many as non-victims than victims of previous burglary victimization. Therefore, the results for non-victims were more likely to be significant because of the larger sample size. The fifth limitation is that this study used Part 1 crime rates as a control variable because burglary rates were not available in the current data. Future researchers should use burglary rates as a control variable to study the relationship between home guardianship and worry about burglary because a more accurate measure of burglary rates is likely to generate a more precise result.

**Recommendations for Future Research**

Future research should explore the impact of use of home protection on worry about burglary using data that address the above limitations. First, researchers should collect more recent data so that findings may be more relevant to the current timeline. Second, the data should be longitudinal and include at least two or more time frames so that time-ordering can be established. Third, data should be collected in multiple cities to enhance generalizability of findings. With such improvements in future research, we can gain a better understanding of the impact of home protection on worry about burglary.

Another suggestion is that future research should consider using worry about crime as a measure of emotional fear instead of fear of crime as a measure. Since fear of crime consists of both cognitive and emotional dimensions, the mislabeling of measures of fear has caused much confusion in fear of crime research. To put it another way, the term fear of
crime is ambiguous because it has more than one meaning, whereas the term worry about crime specifically describes a person’s emotion. Fear of crime, worry about crime, anger about crime, perceived safety, and perceived risk are all essential measures and concepts for fear of crime research (see Hinkle, 2015). It is important that they are labeled appropriately instead of all being called “fear” in research.

Another proposal is that researchers should examine different types of home protection on worry about burglary individually instead of investigating them on a scale (aggregate) level. To date, this is the only study that individually examined various types of home protection on worry about burglary. With more recent data, researchers might discover different and possibly more accurate results when they examine the impact of home guardianship on worry about burglary individually than they would with a combined measure of home guardianship.

Lastly, future researchers should also explore worry about other types of crimes (such as rape, robbery, and murder) since residents might install alarms for other reasons related to personal protection. As such, researchers can apply the concepts of this study and conduct similar research by looking at the impact of personal protection on worry about robbery, rape, or murder. Researchers can make comparisons to see which type of crime was impacted most by home protection.
Appendix A

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Terance D. Miethe
Department of SOCIOLOGY
Virginia Polytechnic Institut
Blacksburg, Virginia USA
Phone: 703-231-8973
FAX: 703-231-5860
BITNET: Miethe at VIVM1
Seattle City Blocks

Q1. Hello, may I please speak to (READ NAME FROM CARD)?

    SKIP TO Q.5 < -------------------- Yes 1
    ASK Q.2 < -------------------- No one by that name lives here 2
    SKIP TO Q.4 < -------------------- Not available 3

Q2. My name is and I'm calling from Northwest Surveys for the Seattle Police Department. We are doing a study of Seattle. Is this (READ ADDRESS FROM CARD)?

    SKIP TO Q.4 Yes 1
    ASK Q.3 < ------------------- No, wrong 2

Q3. (IF NO, WRONG ADDRESS, SAY:) I'm sorry, I am interested in talk the people who live at this address. THANK & TERMINATE.

4. May I speak to an adult member of this household? 1

   IF NOT AVAILABLE, ARRANGE CALL-BACK < ------------------- ---

5. My name is , and I'm calling from Northwest Surveys for the Seattle Police Department. We are doing a study of crime in Seattle.) Several weeks ago we sent a brief letter describing this study. Did you receive our letter telling you that we would be calling?

    SKIP TO Q.7 < ------------------- Yes 1
    ------------------- No 2

    ASK Q.6 < ------------------- Don't know/Refused 3

6. That letter said that we are trying to understand why some people and neighborhoods experience more crime than others. This information is very important to help prevent crime in Seattle and other cities. Can you spend a few minutes talking with me about this topic? (SAY IF NECESSARY: "This survey will only take about fifteen minutes.")

    SKIP TO Q.8 < ------------------- Yes 1
    ARRANGE CALL-BACK < ------------------- No
    THANK & TERMINATE < ------------------- Don't know/Refused
7. Then you may remember that we are trying to understand why some people and neighborhoods experience more crime than others. This information is very important to help prevent crime in Seattle and other cities. Can you spend a few minutes talking with me about this topic? SAY IF NEED: 'This survey will only take about fifteen minutes.'

    SKIP TO Q.8 < --------------  Yes  1
    ARRANGE CALL-BACK < ----------  No
    THANK & TERMINATE < ---------  Don't know/Refused

8. Thank you. I would like to begin by asking if (READ ADDRESS FROM CARD) is your current HOME address?

    CONTINUE < -------------------  Yes  1
    THANK & TERMINATE < ----------  No

other building? (TRIFLEX = APT)

    House  1
    Duplex  2
    Condo  3
    Trailer/Houseboat  4
    Apartment/Room  5
    Townhouse  6
    Other (SPECIFY):  7

    Don't know/Refused  8

10. (Codes 1-4 = HOUSE CODE, 5 APARTMENT CODE, TOWNHOUSE OTHER/DON'T
     KNOW/REFUSED = 3)

12. RECORD RESPONDENT'S SEX.  (ASK ONLY IF NECESSARY)
    Male  2
    Female  2

The first set of questions involve your personal experience with different kinds of crime.

13. First of all, has anyone ever broken into or illegally entered your home, garage, or other building on your property?
    ASK Q.14 < ---------------  Yes  1
                        No  2
    SKIP TO Q.23 < ---------------  Don't know/Refused  3

14. How many times has this occurred?
    Don't know/Refused  99

15. Has a break-in occurred at your current home?  Yes  1
                                               No  2
    Don't know/Refused  3
16. Has this happened within the last two years?  
   Yes 1  
   No 2  
   Don't know/Refused 3  

19. Was anyone home during (this)/(the last) break-in?  
   Yes 1  
   No 2  
   Don't know/Refused 3  

22. Did you report (this)/(the last) burglary to the police?  
   Yes 1  
   No 2  
   Don't know/Refused 3  

23. (Other than the incident just mentioned), have you ever found a door jimmed, a lock forced, or any other signs of an attempted break-in into your home?  
   ASK Q.24 < --------------  
   Yes 1  
   No 2  
   SKIP TO Q.30 < ---------  
   Don't know/Refused 3  

24. How many times has this occurred?  
   Don't know/Refused 99  

25. Has an attempted break-in occurred at your current home?  
   Yes 1  
   No 2  
   Don't know/Refused 3  

26. Has this happened WITHIN THE LAST TWO YEARS?  
   Yes 1  
   No 2  
   Don't know/Refused 3  

29. Was anyone home during (this)/(the last) attempted break-in?  
   Yes 1  
   No 2  
   Don't know/Refused 3  

30. Have you EVER had property -- like barbecue grills, bicycle, lawn chairs -- stolen from your yard or porch?  
   ASK Q.31 < -------------------  
   Yes 1  
   No 2  
   SKIP TO Q.34 < ---------------  
   Don't know/Refused 3  

31. How many times has this occurred?  
   Don't know/Refused 99
<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Don't know/Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>32. Has this occurred at your current home?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>33. Has this happened WITHIN THE LAST TWO YEARS?</td>
<td>Yes</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>34. Have you EVER been physically attacked, beaten up, or threatened by a stranger?</td>
<td>Yes</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>35. How many times has this occurred?</td>
<td>Don't know/Refused</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>36. Has this happened WITHIN THE LAST TWO YEARS?</td>
<td>Yes</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>39. Were you injured from (this attack)/(the last attack) serious enough to require medical attention?</td>
<td>Yes</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>42. Were you alone or with someone when (this attack)/(the last attack) occurred?</td>
<td>Alone</td>
<td>1</td>
<td>With someone</td>
</tr>
<tr>
<td>45. Did (this attack)/(the last attack) occur within 4 blocks of your current home?</td>
<td>Yes</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>48. Have you ever had your (pocket picked)/(purse snatched) or something stolen from you by force (stick-up mugging) when In a public place?</td>
<td>Yes</td>
<td>1</td>
<td>No</td>
</tr>
</tbody>
</table>
49. How many times has this occurred?
   - Don't know/Refused 99

50. Has this happened WITHIN THE LAST TWO YEARS?
   - Yes 1
   - No 2
   - Don't know/Refused 3

53. Were you alone or with someone when (this theft)/(the last theft) occurred?
   - Alone 1
   - With someone 2
   - Don't know/ 3
   - Refused 4

56. Did (this act)/(the last theft) occur within 4 blocks of your current home?
   - Yes 1
   - No 2
   - Don't know/Refused 3

57. Have you EVER had any windows broken, property destroyed, or other damage done to your home by vandals or strangers?
   - ASK Q.58 < ------------------ Yes 1
   - ------------------ No 2
   - SKIP TO Q.61 < ------------------ Don't know/Refused 3

58. How many times has this occurred?
   - Don't know/Refused 99

59. Has this occurred at your current home?
   - Yes 1
   - No 2
   - Don't know/Refused 3

60. Has this happened WITHIN THE LAST TWO YEARS?
   - Yes 1
   - No 2
   - Don't know/Refused 3

61. Have you EVER had your car broken into or stolen?
   - ASK Q.62 < ------------------ Yes 1
   - SKIP TO Q.65 < ------------------ No 2
   - Don't know/Refused 3

62. How many times has this occurred?
   - Don't know/Refused 3

63. Has this happened WITHIN THE LAST TWO YEARS?
   - Yes 1
   - No 2
   - Don't know/Refused 3
64. Has this occurred within 4 blocks of your current home?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't know/Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

65. Next, we would like to ask you some questions about your neighborhood and the city block where you live. Neighborhood refers to the area within 3 blocks of your current home. Your block refers to the area between the cross-streets on either side of your home.

66. First, how long have you lived at your current address? (SHOW MONTHS YEARS, EXAMPLE 2 1/2 years = 2Y 6M, 3 YEARS = 3Y)

<table>
<thead>
<tr>
<th></th>
<th>Don't know/Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99</td>
</tr>
</tbody>
</table>

Are any of the following places within 3 blocks of your home?

<table>
<thead>
<tr>
<th>Place</th>
<th>Yes</th>
<th>No</th>
<th>Don't know/Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school or Junior high</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Convenience store/Gas station</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Bar or nightclub that serves alcohol</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fast food restaurant</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Bank or office building</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Park or play</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Shopping center/mail</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hotel/motel</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Bus stop</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

70. Is there any place - within 3 blocks of your current home - where you are afraid to walk alone at night?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unsure/Depends</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

77. Do you think your neighborhood is very safe, somewhat safe, somewhat unsafe or very unsafe from crime and criminals?

<table>
<thead>
<tr>
<th>Safety Level</th>
<th>Yes</th>
<th>No</th>
<th>Unsure/Depends</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very safe</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Somewhat safe</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Somewhat unsafe</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Very unsafe</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Don't know/Refuse</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

78. Do you think you will be living in this same neighborhood 5 years from now?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unsure/Don’t know</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
79. Can you easily tell if a person is a stranger or resident on your city block? NOTE: WANT TO KNOW IF THE RESPONDENT CAN RECOGNIZE STRANGERS AROUND THEIR HOME.

<table>
<thead>
<tr>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Unsure/Don't know</td>
<td>3</td>
</tr>
<tr>
<td>Refused</td>
<td>4</td>
</tr>
</tbody>
</table>

80. "Do you have any good friends or relatives who are neighbors on your block?"

<table>
<thead>
<tr>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Refused</td>
<td>3</td>
</tr>
</tbody>
</table>

81. Would you say that you know none, some, most, or all the people on your block on a first-name basis?

<table>
<thead>
<tr>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of them</td>
<td>1</td>
</tr>
<tr>
<td>Some of them</td>
<td>2</td>
</tr>
<tr>
<td>Most of them</td>
<td>3</td>
</tr>
<tr>
<td>All of them</td>
<td>4</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>5</td>
</tr>
</tbody>
</table>

Have you done any of the following activities with your current neighbors, have you . . .

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>Don't Know/Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watched your neighbor's property when they are out of town?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Borrowed tools or small food items (e.g., milk, sugar) from your neighbors?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Had dinner or lunch with a neighbor?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Helped a neighbor with a problem?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Participated in an organized block activity or neighborhood association?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Participated in a block activity sponsored by the Seattle Police Department?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

91. About how many times in an average week do you see a police car drive by your (house)/(apartment)/(home)?

<table>
<thead>
<tr>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know/Refused</td>
<td>99</td>
</tr>
</tbody>
</table>

Do you have any of these problems within 3 blocks of your home?

<table>
<thead>
<tr>
<th>Problem</th>
<th>Yes</th>
<th>No</th>
<th>Don't Know/Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups of teenagers hanging around the street</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Litter/garbage/trash on the streets</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Abandoned houses and run-down buildings</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
95. Poor street lighting at night  1  2  3
96. Vandalism like broken windows, writing on walls  1  2  3

97. Here are several questions about your daytime and nighttime activities outside the home DURING THE LAST SEVEN DAYS (LAST WEEK). Think about what you were doing the LAST SEVEN DAYS when answering these questions IF RESPONDENT SAYS LAST WEEK NOT TYPICAL WEEK, HAVE THEM ANSWER QUESTIONS IN TERMS OF A TYPICAL WEEK INSTEAD OF LAST WEEK.

98. First of all, how many EVENINGS LAST WEEK did you go out for work, social or leisure activities outside your home?
   Don't know 8
   Refused 9

99. How many EVENINGS LAST WEEK did you go for a short walk in your neighborhood after dark?
   Don't know 8
   Refused 9

100. How many EVENINGS LAST WEEK was you home unoccupied for some time at night? (IF ASKED, HOW LONG, SAY:) unoccupied for 2 hours or more.
   Don't know 8
   Refused 9

101. How many DAYS LAST WEEK was your home UNOCCUPIED during the DAYTIME?
   Don't know 8
   Refused 9

102. Overall, about how many HOURS LAST WEEK were you away from your home for work, social or leisure activities?
   98 hours or more 98
   Don't know/Refused 99

103. During the LAST WEEK, did you visit a bar or night-club that serves alcohol?
   Yes 1
   No 2
   Don't know/Refused 3

104. During the LAST WEEK, were you in a public place where groups of teenagers or young adults were hanging out on the street?
   Yes 1
   No 2
   Don't know/Refused 3

105. How many times in the LAST MONTH did you feel at danger of a physical attack by a stranger? (30 TIMES = EVERY DAY/ALWAYS)
   Don't know/Refused 99
106. About how many times in the LAST MONTH were you at a public place -- like a street market, shopping mall, movie theatre, park that you had never been at before? (30 TIMES = EVERY DAY/ALWAYS)

- Don’t know/Refused 99

107. Do you ever take a city bus or other forms of public transportation?

- Yes 1
- No 2

SKIP TO Q.109 <---------- - Don’t know/Refused 3

108. How many times per month (do you take public transportation)?

- Don’t know/Refused 99

109. People protect themselves from crime in many different ways. I am going to name some types of self-protection. Please tell me if you take this precaution now or did this -- TWO YEARS AGO -- by saying YES or NO.

110. Do you currently lock doors whenever you leave home?

- Yes 1
- No 2
- Don’t know/Refused 3

111. Did you lock your doors TWO YEARS AGO?

- Yes 1
- No 2
- Don’t know/Refused 3

112. Do you currently leave lights on when you're not at home?

- Yes 1
- No 2
- Don’t know/Refused 3

113. Did you leave lights on TWO YEARS AGO?

- Yes 1
- No 2
- Don’t know/Refused 3

114. Do you currently belong to a community crime prevention program (like neighborhood/block watch program)?

- Yes 1
- No 2
- Don’t know/Refused 3
115. Did you belong to this program TWO YEARS AGO?
   Yes 1
   No 2
   Don't know/Refused 3

116. Do you currently have extra locks installed on doors or windows?
   Yes 1
   No 2
   Don't know/Refused 3

117. Did you have extra locks TWO YEARS AGO?
   Yes 1
   No 2
   Don't know/Refused 3

118. Do you currently carry a weapon for protection when in public?
   (IF ASKED: A weapon such as a gun, knife, mace, etc.)
   Yes 1
   No 2
   Don't know/Refused 3

119. Did you carry a weapon for protection TWO YEARS AGO?
   Yes 1
   No 2
   Don't know/Refused 3

120. Do you currently have a burglar alarm or some other electronic device to protect your home from criminals?
   Yes 1
   No 2
   Don't know/Refused 3

121. Did you have an alarm like this TWO YEARS AGO?
   Yes 1
   No 2
   Don't know/Refused 3

122. Do you currently have a dog at your home?
   Yes 1
   No 2
   Don't know/Refused 3

123. Did you have a dog TWO YEARS AGO?
   Yes 1
   No 2
   Don't know/Refused 3
124. Do you currently have neighbors watch your home when you're out of town?

   Yes  1  
   No   2  
   Don't know/Refused  3

125. Did you have neighbors watch your home TWO YEARS AGO?

   Yes  1  
   No   2  
   Don't know/Refused  3

126. Do you currently have a weapon in your home for protection?

   Yes  1  
   No   2  
   Don't know/Refused  3

127. Did you have such a weapon TWO YEARS AGO?

   Yes  1  
   No   2  
   Don't know/Refused  3

128. In general, have you increased your safety precautions over the LAST TWO YEARS because of crime?

   Yes  1  
   No   2  
   Don't know/Refused  3

129. In general, have you changed where you go or what you do outside your home over the LAST TWO YEARS because of crime?

   Yes  1  
   No   2  
   Don't know/Refused  3

130. Some people are more likely to be crime victims because criminals view them as "easy targets." Here are several questions about your personal habits and property which might influence your chances of being a crime victim.

134. First, does your (house)/(apartment)/(home) have ground floor windows?

   Yes  1  
   No   2  
   Don't know/Refused  3
135. Is there a tall fence or hedge (over 5 feet high) around your dwelling?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>3</td>
</tr>
</tbody>
</table>

136. Is there a vacant lot or empty house next to your home?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>3</td>
</tr>
</tbody>
</table>

140. Is your (house)/(apartment)/(home) on a street corner?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>3</td>
</tr>
</tbody>
</table>

141. Is there an alley behind your home?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>3</td>
</tr>
</tbody>
</table>

145. What kind of street is your (house)/(apartment)/(home) on? Is it on a 2-way, 1-way, dead end, or some other kind of road?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-way</td>
<td>1</td>
</tr>
<tr>
<td>1-way</td>
<td>2</td>
</tr>
<tr>
<td>Dead end/Cul-de-Sac</td>
<td>3</td>
</tr>
<tr>
<td>Other kind of street</td>
<td>4</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>5</td>
</tr>
</tbody>
</table>

146. Is it hard to see the front of your home from the street because of big trees, shrubs, a tall bank or other physical structure?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>3</td>
</tr>
</tbody>
</table>

150. Do you think it would be easy, somewhat difficult or very difficult for a burglar to break into your (house)/(apartment)?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>1</td>
</tr>
<tr>
<td>Somewhat difficult</td>
<td>2</td>
</tr>
<tr>
<td>Very difficult</td>
<td>3</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>4</td>
</tr>
</tbody>
</table>
151. When you go to a public place for shopping or leisure activities, do you usually go out alone or with another adult?

- Alone: 1
- With another: 2
- Depends: 3
- Don’t know/Refused: 4

154. Do you consider yourself to be above average, below average or about average in physical size when compared to other (men)/(women)?

- Above average in physical size: 1
- Below average in physical size: 2
- About average in physical size: 3
- Don’t know/Refused: 4

155. Do you think you could physically defend yourself or ward off an attack from another person?

- Yes: 1
- No: 2
- Don’t know/It depends/Unsure: 3
- Refused: 4

Do you own any of the following expensive consumer items that are commonly stolen by burglars? Do you own... READ a-e

<table>
<thead>
<tr>
<th>ITEM</th>
<th>YES</th>
<th>NO</th>
<th>Don’t know/Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>156. A portable color TV?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>157. A video cassette recorder (VCR)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>158. A 35mm camera?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>159. A home computer</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>160. A bicycle or motorcycle?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

161. During the LAST MONTH, about how many times did you go to a crowded public place -- like a shopping mall, the public market, or movie theatre? (EVERY DAY = 30 TIMES)

Don’t know/Refused: 99

164. During the last month, about how many times did you carry at least $50 cash in your (wallet)/(purse) while in a public place? (EVERY DAY = 30 TIMES)

Don’t know/Refused: 99

165. During the last month, about how many times did you wear jewelry (like a watch, ring or necklace) worth more than $100 when in a public place (EVERY DAY = 30 TIMES)

Don’t know/Refused: 99
166. How often do you worry or think about being physically attacked by a stranger? Would you say you worry or think about this . . . READ 1-4.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Every day</td>
<td>1</td>
</tr>
<tr>
<td>About once a week</td>
<td>2</td>
</tr>
<tr>
<td>Once a month</td>
<td>3</td>
</tr>
<tr>
<td>Less than once a month</td>
<td>4</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>5</td>
</tr>
</tbody>
</table>

167. How about someone breaking into your home and stealing your property? Would you say you worry or think about this . . . READ 1-4.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Every day</td>
<td>1</td>
</tr>
<tr>
<td>About once a week</td>
<td>2</td>
</tr>
<tr>
<td>Once a month</td>
<td>3</td>
</tr>
<tr>
<td>Less than once a month</td>
<td>4</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>5</td>
</tr>
</tbody>
</table>

168. In the PAST TWO YEARS, have any of your close relatives or good friends had their homes broken into or been physically attacked?

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Don't know/Refused</td>
<td>3</td>
</tr>
</tbody>
</table>

169. Think about where you were living and and what you were doing TWO YEAR ago (PAUSE) At that time, about how many EVENINGS PER WEEK did you go out for work, social or leisure activities outside your home? (IF UNSURE, SAY BEST GUESS)

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>8</td>
</tr>
<tr>
<td>Refused</td>
<td>9</td>
</tr>
</tbody>
</table>

170. TWO YEARS AGO, about how many days per week was your home unoccupied during the daytime?

<p>| | |</p>
<table>
<thead>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>8</td>
</tr>
<tr>
<td>Refused</td>
<td>9</td>
</tr>
</tbody>
</table>

Finally, a few questions to complete our statistical analysis.

171. What year were you born? (EXAMPLE = 1943) RANGE WILL BE 1880 -1974

Don't know/Refuse 1974

175. Counting yourself, how many people are currently living in your (house)/(apartment)/(home)?

Don't know/Refused 99
176. How many people in your household, counting yourself, are 16 years old or older? NOTE: CANNOT EXCEED TOTAL HOUSEHOLD MEMBERS.

Don't know/Refused 99

177. (DO NOT ASK, IF Q.173 EQUALS 174) How many people in your household are under 6 years old? NOTE: CANNOT EXCEED TOTAL HOUSEHOLD MEMBERS.

Don't know/Refused 99

178. Do you consider yourself to be . . . READ 1-6

White 1
Black 2
Asian 3
American Indian/Eskimo 4
Hispanic 5
Some other ethnic/racial group 6
----------------------------------
Don't know/Refused 7

179. What was the highest grade of formal education you completed? DO NOT READ.

Grade school 1
Some high school 2
High school graduate or GED 3
Trade/Vocational school after high school 4
Some college 5
College graduate 6
Graduate school/Professional school 7
Don't know/Refused 8

180. Are you currently. READ 1-6.

Married 1
Living with someone as a couple 2
Single 3
Divorced 4

SKIPPED TO Q.184 < --------

Separated 5
Widowed 6
----------------------------------
Refused/No answer 7

183. (SAY SPOUSE IF MARRIED/PARTNER IF LIVING TOGETHER) Does your (spouse)/ (partner) either work outside the home or attend school on a full-time basis?

Works outside the home 1
Attends school 2
Both works and attends school 3
 Doesn't work or attend school 4
Don't know/Refused 5
185. What were you doing most of last week -- working, looking for work, keeping house, going to school, retired, or something else?

- Looking for work (Unemployed) 1
- Keeping house (homemaker) 2
- Retired/Disabled 3
- Armed Service 4
- Going to school (student) 5

ASK Q.187 < ---------------

- With a job but not working leave, vacation, etc.) 6
- Working 7
- Other activities (SPECIFY) 8
- Don't know/Refused 9

IF NOT 5, 6, OR 7, SKIP TO 194

187. How many hours do you (work)/(go to school) in an average week?

- Don't know/Refused 99

190. How many miles is your home from your (school)/(typical work setting)?
(0 MILES = LESS THAN 1 MILE/WORK AT HOME)

- Don't know/Refused 9

IF NOT 6 OR 7 IN Q.178, SKIP TO 194

191. Does your job involve coming into direct personal contact with the public?

- Yes 1
- No 2
- Don't know/Refused 3

192. Does your job involve handling or carrying cash or other valuables?

- Yes 1
- No 2
- Don't know/Refused 3

193. Do you work a straight schedule (example 8 to 5), rotating hours or a swing/night shift?

- Straight shift 1
- Rotating shift 2
- Swing/night shift 3
- No general pattern/Sporadic work 4
- Don't know/Refused 5
<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>194. Do you own or rent your current dwelling?</td>
<td>Own or buying 1</td>
</tr>
<tr>
<td></td>
<td>Rent 2</td>
</tr>
<tr>
<td></td>
<td>Other (SPECIFY:) 3</td>
</tr>
<tr>
<td></td>
<td>Don't know/Refused 4</td>
</tr>
<tr>
<td>195. Do you currently live in a single-unit dwelling, a duplex, or a multi-unit housing complex? (NOTE: A SINGLE UNIT DWELLING CAN BE HOUSE, TRAILER, BOAT HOUSE, ETC.)</td>
<td>Single unit dwelling 1</td>
</tr>
<tr>
<td></td>
<td>Duplex 2</td>
</tr>
<tr>
<td></td>
<td>Apartment/Multi-unit complex 3</td>
</tr>
<tr>
<td></td>
<td>Don't know/Refused 4</td>
</tr>
<tr>
<td>197. How many separate housing units (I.E. APARTMENTS) are there in your building?</td>
<td>Don't know 998</td>
</tr>
<tr>
<td></td>
<td>Refused 999</td>
</tr>
<tr>
<td>198. What floor of this building do you live on? (FIRST = 1, SECOND = 2, ET)</td>
<td>Don't know/Refused 999</td>
</tr>
<tr>
<td>199. Excluding the basement, how many floors/stories is the building where you live?</td>
<td>Don't know/Refused 999</td>
</tr>
<tr>
<td>200. How times have you moved or changed residence in the last 5 years?</td>
<td>Don't know/Refused 99</td>
</tr>
<tr>
<td>201. Do you own a car?</td>
<td>Yes 1</td>
</tr>
<tr>
<td></td>
<td>No 2</td>
</tr>
<tr>
<td></td>
<td>Don't know/Refused 3</td>
</tr>
<tr>
<td>202. About how many miles is it driven per week?</td>
<td>Don't know/Refused 99</td>
</tr>
</tbody>
</table>
203. When you go shopping for groceries, do you usually shop at a particular time of day or particular day of the week?

Yes  1  
No  2  
Don’t know/Refused  3

204. Think about the last time you were in a public place that seemed dangerous, the last time that happened did you . . . Read 207-211

(DON’T IF RESPONDENT SAYS THEY HAVEN’T BEEN IN A PUBLIC PLACE THAT SEEMED DANGEROUS, TELL THEM TO RESPOND IN TERMS OF WHAT THEY WOULD DO IF THEY WERE IN SUCH A DANGEROUS PLACE.)

207. Check your (wallet)/(purse) regularly?  1  2  3
208. Look around for suspicious-looking people?  1  2  3
209. Avoid eye-to-eye contact with strangers?  1  2  3
210. Walk at a faster pace than you usually do?  1  2  3
211. Try to stay at a safe distance away from strangers?  1  2  3

212. What do you consider to be the major crime problem facing Seattle today? (NOTE: IF JUST DRUGS MENTIONED, ASK FOR SPECIFIC TYPES.) (98 = DON’T KNOW, 99 = REFUSED)

215. Which of the following broad categories best represents your total family income before taxes in 1989? Please stop me when I mention the category that applies to you. Would you total income from all sources be . . . READ 1-7.

Less than $10,000  1
$10,000 to $20,000  2
$20,000 to $30,000  3
$30,000 to $50,000  4
$50,000 to $75,000  5
$75,000 to $100,000  6
Over $100,000  7
Refused/no answer

216. May I please verify your phone number.

217.

220. (IF NAME VERIFIED IN Q.1, ASK: Can I please verify the spelling of your first and last name?) May I please have your first and last name? Verify correct spelling.
221. That concludes our interview. Thank you so much for your help on our project. If you would like specific information about what you can do to reduce your chances of being a victim of crime, talk to the Community Crime Prevention Division of the Seattle Police Department or your neighborhood watch block captain. Have a good day/night.

ENTER HOUSEHOLD ID CODE. (EXAMPLE: N 055 22 15 V A 1) (TYPE N AND ENTER. OR ENTER IF BLANK, 3 DIGIT NUMBER ENTER, 2 DIGIT NUMBER ENTER, 2 DIGIT NUMBER ENTER, LETTER ENTER, LETTER ENTER, 1 DIGIT NUMBER)

223. N-1, 0-blank
224. 3 digit code
225. 2 digit code
226. 2 digit code
227. letter
228. letter
229. 1 digit code

230. What was your first impression of this respondent? At any time during the interview was the respondent inattentive or impatient with the interview?  
Not at all 1  
Somewhat 2  
Yes, definitely 3

231. Nervous, suspicious or frightened?  
Not at all 1  
Somewhat 2  
Yes, definitely 3

232. How cooperative was this respondent?  
Not at all cooperative 1  
Somewhat cooperative 2  
Very cooperative 3

233. How honest do you think this respondent was during the interview?  
Not at all honest 1  
Somewhat honest 2  
Very honest 3

234. How much difficulty do you think this respondent had understanding the questions in this interview?  
No difficulty 1  
Fair amount of difficulty 2  
Great deal of difficulty 3
235. Was anyone else on the phone during the interview?

Yes  1
No  2

236. HOUSEHOLD CODE IS IS THIS CORRECT

(IF NO IN 236, REENTER CORRECT HOUSEHOLD ID CODE)

238. N-1, blank-0
239. 3 digit code
240. 2 digit code
241. 2 digit code
242. letter
243. letter
244. 1 digit code

245. Enter address from card

246. Interviewer's ID#

247. Day of week
248. Time of day

251. Respondent to be recorded on card

252. Date
254. Attempt

255. End of interview
References


**Vita**

Tam Thai Nguyen Quach was born on October 16, 1991 in Vietnam. In 2009, he attended Clark Atlanta University. In 2013, Tam obtained his Bachelors of Arts in Criminal Justice. Before graduating, Tam decided that he wanted to further his education. So, he chose to attend graduate school.

In 2013, Tam began his Masters in Science in Criminal Justice at Georgia State University. While taking classes, Tam became interested in whether burglars are deterred by different types of home protection. After discussing his interest with his colleagues and professors, Tam discovered that his research interest was in fear of/worry about crime. This area of study is huge, and he needed advice from an expert. With the help of his thesis chair, Dr. Joshua Hinkle, Tam was able to select an appropriate fear of/worry about crime research topic. Tam’s thesis is titled “Use of Home Protection and Worry about Burglary.”

Tam was a graduate research assistant at Georgia State University from 2014 to 2016. A part of Tam research assistantship was to gather data for a research project by doing ride-alongs with police officers to observe how they interact with citizens. Another part of Tam’s research assistantship was to meet with students and help them revise their papers. Apart from his graduate research assistantship, Tam was awarded the *James L. Maddex, Jr. Scholarship* in 2015 and 2016. Moreover, Tam was also a member of Alpha Phi Sigma and the Criminal Justice Graduate Student Association. If more information is needed, please contact Tam via email: tquach3@student.gsu.edu.