Predicting Fear of Crime using a Multilevel and Multi-Model Approach: A Study in Hillsborough County

Jonathan Maskaly

University of South Florida, jonmaskaly@gmail.com

Follow this and additional works at: https://digitalcommons.usf.edu/etd

Part of the Criminology and Criminal Justice Commons

Scholar Commons Citation
Predicting Fear of Crime using a Multilevel and Multi-Model Approach:

A Study in Hillsborough County

by

Jonathan M. Maskaly

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
Department of Criminology
College of Behavioral and Community Sciences
University of South Florida

Co-Major Professor: Lyndsay N. Boggess, Ph.D.
Co-Major Professor: Lorie A. Fridell, Ph.D.
Michael J. Leiber, Ph.D.
Ojmarrh Mitchell, Ph.D.

Date of Approval:
July 9, 2014

Keywords: Social Integration, Disorder, Vulnerabilities, Reciprocal Effects

Copyright © 2014, Jonathan M. Maskaly
Acknowledgments

Now that the dissertation is complete, I must acknowledge those people who were instrumental in helping me complete this project. First, I must thank both of my advisors—Dr. Lyndsay Boggess and Dr. Lorie Fridell—both of whom were sources of great inspiration and assistance throughout the entire process. At the end of the day I am amazed by the fact that each of these women has dedicated more of themselves to helping me through this process, than I ever thought possible. I am not certain how I will ever be able to repay them for the professional guidance and tutelage during my time at the University of South Florida. At the end of the road, I have a great deal of respect and appreciation for both of these women—as scholars and mentors. Sincerely, thank you! I truly look forward to continuing to work as a colleague with both of them in the future.

Additionally, I would like to thank Drs. Mike Leiber and Ojmarrh Mitchell for their helpful comments and advice on earlier drafts of this manuscript. Again, I look up to both of you as scholars, and thank you both for helping to mold me as a scholar in your image. In addition to the dissertation, coursework taken with Dr. Leiber and Mitchell was some of the most challenging and rewarding of my career as a graduate student at USF.

Furthermore, I must thank Dr. Tim Hart—a fellow USF graduate—who was instrumental in completing this project. As a graduate student, Dr. Hart was responsible for designing the survey and collecting the data utilized in this dissertation. Furthermore, Dr. Hart was gracious
enough to allow me access to the data to complete my dissertation. I look forward to working with him on some research in the future as well.

Finally, I must thank my family. To my parents who are some of my staunchest supporters and have always tolerated my questioning personality, thank you. They should know that I am who I am today because of the work ethic and personal qualities they have instilled in me. Additionally, I must thank my sister and her family. Stephanie and Mike may never know how much they helped me survive graduate school by serving as a sounding board and letting me vent when I became frustrated. Additionally, to my niece and nephews, thank you for reminding me to seek out some joy in life each day. Lastly, I would be remiss if I did not thank my partner Corinne. She is the person who has been there with me day in and day out as the dissertation and for the final years—you know the stressful ones—on graduate school. Her unwavering emotional support and tolerance of the crazy demands that come with graduate school and a dissertation are debts that I can never repay. I truly want her to know that I acknowledge, and truly appreciate, all of her help and support over the past few years.
## Table of Contents

List of Tables iv

List of Figures v

Abstract vi

Chapter 1: Introduction
    “Roadmap” For the Dissertation 1 7

Chapter 2: Theoretical Framework & Literature Review 8
    What is Fear of Crime? 8
    Theoretical Explanations of Fear 10
        Social Integration 11
            Informal social control hypothesis 13
            Indirect victimization hypothesis 14
            Which version of social integration? 15
    The Disorder Model 16
        What is disorder? 18
        Research assessing the relationship between disorder and fear of crime 19
        Research testing both the disorder and social integration models 20
    Vulnerabilities Model 21
        Types of vulnerabilities 22
            Sociodemographic groups and vulnerability 23
                Gender 23
                Age 25
                Racial/Ethnic minorities 27
                Socioeconomic status 28
            Prior victimization 29
    Reciprocal Effects 31
        Positive feedback loop 32
        Negative feedback loop 34
    Contextual Effects 36
        The relationship between social integration and contextual effects 38
        The relationship between disorder and contextual effects 40
        The relationship between vulnerabilities and contextual effects 41

Current Study 42
Chapter 3: Research Methods

Data

The 2004 Hillsborough County Sheriff’s Office community survey

Data strengths

The 2000 United States Census Data

Measures

Dependent variable

Independent Variables

Social Integration

Disorder

Vulnerabilities

Social Context

Neighborhood concentrated disadvantage

Neighborhood racial/ethnic heterogeneity

Neighborhood residential instability

Control Variables

Analytic Strategy

Measure Development Procedure

Analytic Procedure

First analytic stage

Second analytic stage

Third analytic stage

Chapter 4: Results

Correlations

Individual-Level Correlates of Fear of Crime

Social Contextual Correlates of Fear of Crime

Predicting Fear

Determining which Fear of Crime Model is Best

Assessing Direct Relationship to Fear of Crime

Reciprocal Relationship between Fear of Crime and Social Integration

The Effects of Social Context

Overview of Results and Hypotheses

Chapter 5: Discussion

Overview

Including Factors from All Three Models

The Reciprocal Relationship between Social Integration and Fear

Social Context Matters

Strengthening the Endogenous Relationship

The Independent Effects of Social Context on Fear

The Effects of Context on Other Variables of Interest

The Need for a More Comprehensive Theoretical Model

Moving Beyond Vulnerabilities

Developing a More Comprehensive Model

Policy Implications
<table>
<thead>
<tr>
<th>Function Fear</th>
<th>112</th>
</tr>
</thead>
<tbody>
<tr>
<td>COP as an Effective Strategy for Reducing Levels of Fear</td>
<td>113</td>
</tr>
<tr>
<td>Focusing on disorder</td>
<td>114</td>
</tr>
<tr>
<td>Limitations</td>
<td>115</td>
</tr>
<tr>
<td>Future Studies</td>
<td>120</td>
</tr>
<tr>
<td>Concluding Thoughts</td>
<td>122</td>
</tr>
</tbody>
</table>

Chapter 6: List of References 124

Appendix A: Copy of Survey Instrument 139

Appendix B: Demographics from the 2000 United States Census for Census Designated Places 143
List of Tables

Table 1: Selected Demographic Characteristics from Full Sample of Community Survey Respondents (N=1898) 51

Table 2: Selected Aggregated Demographics from Community Survey by Census Designated Place (N=30) 52

Table 3: Selected Demographics from the 2000 Census for each Census Designated Place (N=30) 52

Table 4: Distribution of the Dependent Variable 53

Table 5: Factor Loading Scores from Confirmatory Factor Analysis of Individual-Level Independent Variables (N=1898) 63

Table 6: Bivariate Correlations between All Individual-Level Variables (N=1898) 74

Table 7: Bivariate Correlations between Community-Level and Certain Individual-Level Variables (N=1898) 74

Table 8: Results from a Series of Likelihood Ratio Tests Assessing the Empirically Strongest Predictive Fear of Crime Model 76

Table 9: Individual-Level Factors Predicting Fear of Crime in Hillsborough County (N=1898) 77

Table 10: Individual-Level Factors Predicting Fear of Crime Controlling for the Reciprocal Relationship between Social Integration and Fear of Crime in Hillsborough County (N=1898) 80

Table 11: Predicting Fear of Crime Using a Multilevel Model Accounting for Multiple Theoretical Models, the Reciprocal Relationship, and the Effects of Social Context (N_{Within}=1898; N_{Between} = N=30) 84

Table 12: Summary of Results 89
List of Figures

Figure 1: Path Diagram of First Stage in the Analytic Procedure 66
Figure 2: Path Diagram of Second Stage in the Analytic Procedure 68
Figure 3: Path Diagram of Third Stage in the Analytic Procedure 69
Abstract

In the 1960s, the government formed the President’s Commission on Law Enforcement and Administration of Justice to look at the problem of crime and fear of crime in modern American society. In addition to looking at these issues, the Commission also looked at ways to potentially reduce both crime and fear of crime. One of the primary outcomes of the Commission’s report was that policing agencies in the United States needed to fundamentally alter the way they served their communities, notably by transitioning to community-oriented policing (COP). Starting in the 1970s, law enforcement agencies around the nation began to embrace the COP philosophy in the hopes that it would effectively reduce crime. A plethora of research suggests that the crime reduction benefits of COP are dubious at best; however, COP shows great promise in reducing fear of crime in neighborhoods. However, scholars remain uncertain as to why COP can effectively reduce fear. The uncertainty surrounding the efficacy of COP lies in the incomplete theoretical understanding of fear of crime.

Three largely divergent fear of crime models have been developed. The first, the social integration model, posits that fear is influenced by the degree to which a person is integrated into their community. The thought being that the more socially integrated a person is, the stronger the sense of informal social and thus the lower the fear of crime. Research generally—although not always—supports this notion. Other scholars developed the disorder model, which posits that disorderly conditions or other signs of incivility can lead residents to feel as though informal social control has broken down, and thus elevate levels of fear. Again, this notion is well
supported in the research. The final model suggests fear of crime is a result of sociodemographic differences (e.g., gender and age) that make a person feel more vulnerable to victimization, and thus those feeling most vulnerable exhibit the highest levels of fear. The findings from this so-called vulnerabilities model receive inconsistent support in the research.

The problem with the extant fear of crime research is that it largely relies on singular explanations of fear. In other words, it operates from the premise that one of the models described above is responsible for residents’ levels of fear. Recently, scholars have begun developing multimodel explanations in an effort to improve criminologists’ ability to explain fear of crime. However, this multimodel approach is not a complete theoretical model of fear because it fails to account for the likely existence of a reciprocal effect between fear of crime and social integration. Further, it fails to account for the effects of social context may exert on fear and the way in which neighborhood differences may condition the individual-level fear of crime relationships.

This dissertation, using two data sources, attempts to predict fear of crime using a more complete fear of crime model than those used in much of the prior research. The first source of data used is the 2004 Hillsborough County Sheriff’s Office community survey (N=1898), which was distributed to a random sample of households in unincorporated Hillsborough County. Additionally, to create measures of social context, this dissertation utilizes data from the 2000 United States Census for census designated places in unincorporated Hillsborough County—which serve as the proxy for neighborhoods (N=30). Based on theory and prior research, it was hypothesized that the best fear of crime model would contain elements from all three theoretical models developed in prior research. Additionally, it was hypothesized that there would be a significant and negative reciprocal effect from fear of crime to social integration. Finally, it was
hypothesized that social context would condition the relationships between individual-level fear of crime predictors.

As predicted by the hypothesis, the empirically strongest fear of crime model did contain elements from all three explanatory fear of crime models. Additionally as hypothesized, there was a significant reciprocal relationship between fear of crime and social integration. However, contrary to expectations the relationship was positive. In other words, fear of crime motivated residents to become more socially integrated in their neighborhoods. Finally, as hypothesized social context did condition the effects of the individual-level variables. However, contrary to the hypotheses proffered, social context augmented the size of the effect between the individual-level variables.

The findings from this dissertation offer some interesting insights for scholars and policy makers alike. The findings suggest that it is imperative to use a more complete (e.g., multimodel) approach when explaining fear of crime. Additionally, it is necessary to account for the reciprocal relationship between fear of crime and social integration; otherwise research will yield deceptive parameter estimates for social integration on fear of crime. Lastly, social context matters and needs to be considered in further research. However, the theoretical model in this dissertation—while a step forward—does not represent the theoretical model to explain fear of crime. The results suggest that the model may be even more complex than the model presented here. The results of this dissertation for policy makers suggest that community oriented policing strategies are likely an effective mechanism for reducing residents fear of crime for two reasons; 1) the strengthening of social integration programs in neighborhoods and 2) focusing on reducing disorder problems in neighborhoods. Study strengths and limitations, as well as directions for future research are discussed.
Chapter 1: Introduction

The President’s Commission on Law Enforcement and Administration of Justice was formed by President Johnson in 1965 to look for causes and potential solutions, not just to crime, but also to perceptions of elevated crime and associated levels of fear. The Commission’s report (1967) highlighted a number of potential solutions, including integrating the police and communities they serve. The mechanism for doing this was more fully fleshed out in the 1980s, eventually becoming what is today known as community-oriented-policing (COP; Rosenbaum, 1994). The core tenets of COP are the police being responsive to the needs of the community and helping communities to help themselves (Skogan, 1990). COP is based on the premise that crime control should be a community-led effort and that the police will not be able to control crime without the assistance of the community (Wilson & Kelling, 1982). The evidence of the effectiveness of COP strategies to actually reduce crime is inconclusive; however research consistently suggests COP strategies can effectively reduce fear of crime (Cordner, 2010; Eck & Maguire, 2006).

Some scholars have suggested it may be more important to focus on the fear of crime than on crime itself because high levels of fear can contribute to the level of crime (Bennett, 1991; Farrall et al., 2000; Hale, 1996; Warr, 1984). The scholars that claim fear can play a negative role in communities argue increased levels of fear diminish social processes that both reduce crime and fear of crime. Crime, and by extension fear of crime, can be controlled
effectively with consistent and positive interaction between neighborhood residents. However, fear of crime can cause people to alter their behavior in a way that reduces the amount of time spent in public spaces and interactions with neighbors (Sampson & Raudenbush, 1999; Taylor, 2001; Wilson & Kelling, 1982). Although some scholars have suggested fear of crime can bring neighborhood residents together to collectively address a problem in the community (Durkheim, 1933, 1938; Liska & Warner, 1991; Warr, 2000; Woldoff, 2002), most empirical research suggests fear of crime has adverse consequences on neighborhoods and the crime within them (Hale, 1996; Skogan, 1986, 1990). Therefore, COP, by reducing the fear of crime, may be an effective mechanism to indirectly reduce crime within neighborhoods.

The precise reason COP is effective at reducing fear of crime is unclear. This confusion reflects criminologists’ lack of understanding of the origins of people’s fear of crime. One of the most promising explanations developed to explain fear of crime is the social integration model, which posits a person’s level of fear is inversely proportional to the level at which they are socially integrated (e.g., have a vested interest) into their neighborhood (Adams, 1992; Taylor, 1996). Social integration reduces residents’ fear of crime because these residents perceive there are strong informal social control mechanisms within their neighborhood that allow them to anticipate each other’s behaviors (Franklin et al., 2008). Socially integrated residents can expect their neighbors not to victimize them and to work together to stop and prevent crime in the neighborhood (Lewis & Salem, 1986). With the expectation brought by social integration, residents’ levels of fear are reduced because they no longer anticipate others residents integrated into the same social network to victimize them (Franklin et al., 2008). Consistent with the explanation posited by the social integration model, COP strategies try to bring community members together to work in concert with the police to solve neighborhood crime problems.
Therefore, a likely reason that COP works to reduce fear of crime among neighborhood residents is that it bolsters levels of social integration within neighborhoods. Social integration is not the only explanatory model for fear of crime that has been developed; and criminologists’ ability to explain fear of crime may be further strengthened by integrating other explanatory models with the social integration model. The two other most promising explanations developed to explain fear of crime are the disorder and vulnerabilities models.

The disorder model suggests that disorderly conditions (e.g., litter, graffiti, and abandoned buildings) serve as visual cues to neighborhood residents that informal social control mechanisms, which serve to regulate the behavior of other residents, have broken down (Wilson & Kelling, 1982). As a result of this breakdown in informal social control, neighborhood residents feel that the behavior of others in the neighborhood is unpredictable. The unpredictable behavior of others causes people to perceive a high risk of victimization, which results in elevated levels of fear (Taylor, 1999). This explanation is very similar to the social integration model; however, there is a subtle difference that sets the two apart. The disorder model suggests visual cues (e.g., disorder) lead residents to believe that informal social control mechanisms have broken down; while the social integration model suggests that residents can strengthen these informal social control mechanisms by becoming more socially integrated and invested in their neighborhood. It seems the disorder and social integration models identify the same fear producing mechanism, although the models suggest different processes through which that mechanism is activated. Therefore, it would seem quite natural to integrate the social integration and disorder models together into a single model to explain fear of crime.

The vulnerabilities model suggests that people’s level of fear is influenced by their perception of the ability to prevent and recover from criminal victimization (Hale, 1996). Of
particular interest to the vulnerabilities model are sociodemographic differences that result in elevated levels of fear. Research suggests that two of the most robust demographic factors associated with elevated levels of fear are age and gender, with older people and females consistently reporting higher levels of fear (Hale, 1996). Neither age nor gender is theoretically related to any of the other explanatory fear of crime models. Therefore, integrating concepts from the vulnerabilities model into the social integration model would seem to strengthen the overall explanatory power of the model. It may be that fear of crime is a product of both (a) a person’s perception of the likelihood of crime based on concepts from the social integration model, and (b) that person’s perception of his/her ability to prevent and/or recover from crime, reflecting concepts from the vulnerabilities model.

The ability of the social integration model to fully explain fear of crime will likely be strengthened by integrating it with the disorder and vulnerabilities models. However, even this integrated explanatory model may be unable to fully explain fear of crime. The explanatory power of the more fully specified social integration model would be further enhanced by considering the likely reciprocal relationship some scholars say exists between fear of crime and social integration (Liska et al., 1988; Skogan, 1986). People who are more socially integrated tend to be less fearful because they have established networks of trust with neighbors, whereas less integrated people are more fearful because they are more concerned with becoming a potential victim of crime. Wilson and Kelling (1982) and Skogan (1990) noted that, in order to prevent potential victimization, fearful residents isolate themselves in their homes, thus preventing them from socially integrating into the neighborhood. However, other research has suggested that fear of crime may actually motivate residents to become more socially integrated and thus alleviate fear (Woldoff, 2002). Therefore, there are theoretically specified, logically
sound, and empirically supported reasons to believe there is a reciprocal relationship between fear of crime and a person’s level of social integration. Failing to account for this reciprocal relationship can lead to an incomplete understanding of the origins of fear (Paxton et al., 2011).

Scholars have suggested that social context might have an impact on the mechanisms that produce fear, including the reciprocal relationship described above (Gau & Pratt, 2008; Hale, 1996; Sampson, 1991). Research by Franklin and colleagues (2008) examined individual levels of fear of crime from multiple cities using multi-level modeling techniques. They found that residents living in cities characterized as urban expressed higher levels of fear than non-urban residents, suggesting the importance of considering the larger macro-level environment in which individuals reside when examining fear. Other research examining the context of fear at the neighborhood level (e.g., McCrea et al., 2005) finds that urbanization is not the key variable, but identify other relevant contextual differences (e.g., poverty level, residential instability, and racial/ethnic heterogeneity).

Theory can guide our exploration of the impact of context on fear of crime. Social disorganization theory is essentially the macro-level version (e.g., neighborhood level) of the micro-level (e.g., individual level) social integration explanation. Both models suggest that social integration is directly related to the strength of social control mechanisms. Evidence suggests the disorder explanation may also be sensitive to social context. Research suggests social context strongly influences perceptions of disorder, with those living in the most disadvantaged neighborhoods being least sensitive to the presence of disorder (Gau & Pratt, 2008, 2010; Piquero, 1999). Additionally, research suggests the effects of certain demographic characteristics (e.g., social vulnerabilities) may be spurious after considering social context (Skogan & Maxfield, 1981); that is, the existence of social vulnerabilities (e.g., race) as a predictor of fear of
crime may be rendered meaningless after considering the social context in which residents are situated. The social integration model proposed above, which incorporates the disorder and vulnerabilities models and examines the likely reciprocal effect of social integration and fear of crime, can be further strengthened by considering the effects of social context.

The purpose of this dissertation is to produce a model that enhances our ability to understand fear of crime, which may illuminate the reasons that COP effectively reduces fear of crime. This dissertation will evaluate a more complete model of social integration—one which integrates key components from other explanatory models, examines the reciprocal relationship between fear of crime and social integration, and examines the potential impact of social context on the individual-level fear of crime. This dissertation is guided by the following research questions:

1. Is the social integration model of explaining fear of crime strengthened with the addition of factors from the disorder and vulnerabilities models?
2. Is there a reciprocal relationship between fear of crime and social integration?
2a. What is the nature of the reciprocal relationship (i.e., positive or negative) between a person’s fear of crime and their level of social integration.
3. How are the individual-level relationships conditioned by social context?

This research will make several important contributions to the field of criminology, specifically the research examining fear of crime. First, the present research will examine the value of integrating the disorder and vulnerabilities models into the social integration model for explaining fear of crime at the individual level. Second, this dissertation will examine the theoretically specified reciprocal effect between fear of crime and social integration. Third, this
dissertation will examine the impact of social context on individual-level fear of crime and, fourth, it will do so using the theoretically and methodologically appropriate unit of analysis — neighborhoods. Ultimately, this dissertation will provide policy makers with a more holistic understanding of what causes fear of crime. This more holistic understanding will allow policy makers to implement and/or refine effective strategies to ameliorate fear of crime in communities and allow police officials to maximize the fear-reducing potential of COP.

“Roadmap” For the Dissertation

The remainder of this dissertation consists of four chapters designed to answer the specific research questions presented above. Chapter 2, will lay the theoretical foundations for this dissertation and review the relevant research. This chapter will conclude with the specific hypotheses to be tested in this dissertation. Chapter 3 will describe the data, research methodology, and strategy used to analyze the data. Chapter 4 will present the results from the analyses conducted to answer each research question and associated hypotheses. Chapter 5 will summarize the findings from this dissertation and situate the importance of these findings within the larger theoretical framework used to examine fear of crime. Additionally, this chapter will present the implications for public policy, limitations to this research, and possibilities for future research extending this dissertation.
Chapter 2: Theoretical Framework & Literature Review

What is Fear of Crime?

Fear is one of the basic emotional states identified by psychologists. The emotion of fear represents, “…a feeling of alarm or dread caused by an awareness or expectation of danger” (Warr, 2000, 453). Fear is not simply the perception of the risk in the environment, but rather fear represents a response to the conditions perceived in the environment (Ferraro, 1995; Roundtree & Land, 1996). Many researchers state that one of the primary roles of fear in modern society is to prevent people from being victimized (Doran & Burgess, 2012; Skogan & Maxfield, 1981; Warr, 2000). Prior studies have operationalized fear of crime in two primary ways; using attitudinal measures in surveys and behavioral measures. Attitudinal measures of fear typically ask respondents to report their level of fear at particular times, locations, and situations on a Likert type scale (Warr, 2000). These attitudinal measures of fear can be designed to test general or global levels of fear or fear of specific types of crime; both have been widely used in the research (Hale, 1996). Behavioral measures of fear ask people to report specific actions taken to reduce the likelihood of victimization (Hale, 1996). There are advantages and disadvantages to using each type of indicator to measure fear; which will be discussed in more detail in Chapter 3.

Criminologists became interested in fear of crime after analyses from early victimization surveys suggested a disjuncture between actual and perceived risk of victimization (Cook & Skogan, 1984; DuBow, McCabe & Kaplan, 1979). The research suggests that despite a relatively low risk of victimization, people expressed high levels of fear. Early research also noted an
inverse relationship between fear of crime and a person’s actual risk of victimization; those with the highest risk of victimization expressed the lowest levels of fear and those with the lowest risk of victimization the higher levels of fear (Garofalo & Laub, 1978). These findings suggest that fear of crime is more than simply a function of the actual risk of victimization.

While the emotion fear is interesting to many fields of study, criminology renewed its interest in fear after research suggesting that community oriented policing (COP) was an effective strategy for reducing levels of fear (Eck & Maguire, 2000). What was less clear, however, was why this is the case. In an effort to determine the reason why COP programs are effective, criminology has taken a renewed research interest in fear of crime. Scholars suggest that while fear of crime is important, criminologists are primarily interested in the effects of fear (Doran & Burgess, 2012). One of the most interesting effects of fear is the behavioral changes caused by elevated levels of fear.

Criminologists are interested in behavioral changes caused by elevated levels of fear, and particularly the unintended consequences associated with these changes (Doran & Burgess, 2012). The most common behavioral changes associated with elevated levels of fear are: 1) adopting protective behaviors, and/or 2) implementing avoidance strategies (Box et al., 1988; Keanne, 1998; Liska et al., 1988; Reid et al., 1998; Riger, Gordon, & LeBailly, 1982; Warr, 1984). Protective behaviors are specific actions taken to reduce the risk of victimization (e.g., walking with a dog or carrying a weapon) and thus reducing fear. Avoidance strategies are actions taken to reduce the exposure to potential threats (e.g., avoiding specific places or moving out of the neighborhood) and thus reducing fear (Skogan & Maxfield, 1981). Research suggests,

1 The terms fear of crime and fear of victimization are synonymous terms for the same process. As such the two are used interchangeably throughout the manuscript with congruence to the language from the original source.
all things being equal, most people would rather use avoidance strategies than adopt protective behaviors (Riger et al., 1982).

While the implementation of avoidance strategies and protective behaviors can be beneficial in reducing an individual’s likelihood of victimization, such strategies might also produce unintended negative consequences for other members of the community and the community as a whole (e.g., Skogan, 1986, 1990; Warr, 2000). The negative consequences most often noted in the literature are elevated levels of interpersonal distrust and social isolation (Doeksen, 1997; Garofalo, 1981), an eroded sense of social order (Ross & Mirowsky, 2000), and diminished neighborhood cohesion (Nasar et al., 1993). In short, an elevated level of fear among neighborhood residents weakens social control within neighborhoods by reducing the social integration of neighborhood residents (Ross & Mirowsky, 2000). Measures of social control, especially informal social control, are robust predictors of neighborhood crime rates (Pratt & Cullen, 2005) and to a lesser degree fear of crime (Gibson et al., 2002). Research suggests an inverse relationship between the strength of social control and neighborhood crime rates and fear of crime (Bursik & Grasmick, 1993). Therefore, individual behavioral changes caused by elevated levels of fear could increase the fear of other residents, and potentially increase crime in the neighborhood.

Theoretical Explanations of Fear

Scholars researching fear of crime have developed a number of models thought to explain increased levels of fear. Researchers have identified two mechanisms thought to be responsible for a person’s level of fear: inhibiting and facilitating mechanisms (Franklin et al., 2008).

---

2 Some scholars question the presumed negative effect that fear will have on social integration, which is more thoroughly discussed in the reciprocal effects section below.
Inhibiting mechanisms inhibit the development of fear, whereas facilitating mechanisms *directly contribute* to a person’s level of fear. Criminologists have only developed one theoretical fear of crime model, the social integration model, which identifies an inhibiting mechanism. The social integration model suggests fear is reduced when people feel there is a great deal of social cohesion (i.e., social integration) among neighborhood residents, which produces high levels of informal social control (Hale, 1996). Conversely, criminologists have developed two theoretical models, the disorder and vulnerabilities models, which identify a facilitating mechanism for elevated levels of fear. The disorder model suggests perceived signs of disorder, or incivilities, make residents more fearful because these signify a breakdown in the social order (Ross & Mirowsky, 2000). The vulnerabilities model suggests certain demographic characteristics (e.g., gender and age) are associated with higher levels of fear (Skogan & Maxfield, 1981). People with these characteristics feel as though they cannot fend off or recover from a potential victimization (Hale, 1996). In order to more fully explain fear of crime, it may be necessary to integrate the three explanations together into a singular model. The logic of each individual model, a review of the associated empirical literature, and the potential value of integration are presented below.

**Social Integration**

The social integration model posits fear of crime is largely a social process. This model is founded on the classic writings of Durkheim (1933, 1938), which suggest a person’s behavior is regulated largely by the degree to which they are socially integrated into larger social groups. The more integrated a person is into the larger social group (e.g., society), the more likely the person will behave in a manner deemed appropriate by the larger social group. In other words,
the more socially integrated a person is, the stronger the social controls on the individual. Although based on Durkheim's (1933, 1938) conceptualization, the social integration model discussed here varies slightly.

The social integration model developed in the fear crime literature refers specifically to the degree to which a person is socially integrated into their neighborhood. Levels of fear are a by-product of a person’s level of involvement with neighborhood groups and how attached a person is to their neighbors and their neighborhood (Adams, 1992; Kasarda & Janowitz, 1974; Keyes, 1998; Taylor, 1996). More recent conceptualizations suggest that socially integrated people knows their neighbors, regularly speak with their neighbors, and feel as though their neighborhood is more than just a place to live (Morenoff et al., 2001). This model suggests fear is regulated through a process of social integration because individuals know what is expected of them by others in the social group, and in turn what to expect from other members of the social group (Biderman et al., 1967; Merry, 1981).

There is some debate among scholars whether increased social integration will attenuate a person’s level of fear. The idea presented by Durkheim (1933, 1938) suggests that increased social integration will decrease levels of fear by increasing perceptions of social control. However, other scholars suggest increased levels of social integration may actually increase levels of fear through a process of indirect victimization (Skogan & Maxfield, 1981). Given the disparate implications for fear, it is important to understand the logic behind each of these models prior to examining the empirical research. The causal process and mechanisms through

---

3 Indirect victimization refers to a situation in which, “...an individual may suffer a loss from a crime in which he is not directly involved. To the extent that crimes do become known to the public, attitudes, and behaviors of individuals not directly victimized may be altered. When these changes are regarded negatively by the individuals themselves, indirect victimization occurs.” (Conklin, 1971, p. 374). An example of indirect victimization is when a person alters his/her behavior because his/her neighbor’s house was burglarized.
which social integration might affect a person's level of fear based on these models are discussed below.

**Informal social control hypothesis.** The social integration model’s informal social control hypothesis is a micro-level specification of the systemic model of social disorganization theory (Bursik & Grasmick, 1993; Gibson et al., 2002; Kasarda & Janowitz, 1974; Taylor, 1996). Like Shaw and McKay’s (1942) initial conceptualization, the systemic model is concerned with the ability of neighborhood residents to achieve social organization (Bursik & Grasmick, 1993). Social organization refers to the ability of a neighborhood to achieve positively valued goals and control the behavior of residents (Kornhauser, 1978).

A key aspect in the systemic model is the ability of neighborhood residents to both establish the positively valued goals of the neighborhood (e.g., low or reduced crime) and be able to regulate the conduct of others (Janowitz, 1978). The regulation of behavior is accomplished using the private and parochial levels of social control as defined by Hunter (1985) and expounded upon by Bursik and Grasmick (1993). The private level controls the behavior of members of primary intimate groups (e.g., family and friends) by providing or threatening to remove sentiment, social support, and mutual esteem (Hunter, 1985, p. 233). The parochial level of social control is used to control the behavior of larger interpersonal networks not necessarily sharing the same sentimental attachment (e.g., neighbors). The parochial level of social control relies upon the use of surveillance, whereby neighbors act as effective guardians for those with whom they share an interpersonal network (Hunter, 1985, p. 239). Informal social controls work to proactively control and prevent the behavior of others whereas formal social control mechanisms (the police) are usually called upon by residents after problem has already occurred.
The informal social control hypothesis suggests the more socially integrated a person is into the neighborhood, the lower their level of fear, presumably a result of effective informal social control mechanisms (Austin et al., 1994; Gibson et al., 2002; Hunter & Baumer, 1982; Franklin et al., 2008; Kanan & Pruitt, 2002; Krannich, Berry, & Greider, 1989; McGarrell et al., 1997; Roundtree & Land, 1996). Research suggests that neighborhoods characterized by high levels of socially integrated residents are more likely to use informal social control to regulate the behavior of other residents (Bellair, 2000; Freudenburg, 1986). Additionally, scholars argue that the more socially integrated people are the more social networks they will have through which to exert informal social control (Gibson et al., 2002; Hunter & Baumer, 1982; Lewis & Salem, 1986). Some scholars have argued that fear of crime is actually a fear of strangers, and becoming more socially integrated will reduce the number of strangers, which should then reduce one's level of fear (Biderman et al., 1967).

**Indirect victimization hypothesis.** As with the early work examining the fear of crime, social integration scholars were initially interested in examining the influence of victimization on a person's rational calculus of fear. The indirect victimization hypothesis moves beyond focusing directly on an individual's victimization and instead accounts for any victimization within a social network: *indirect victimization* (Skogan & Maxfield, 1981). These indirect victimizations refer to learning about the victimization of another person who is integrated into the same social network (Covington & Taylor, 1991; Taylor & Hale, 1986) and inferring one’s own likelihood of victimization from the experience of others. The power of indirect experiences to influence attitudes and behaviors has been well documented in the criminological literature, notably with deterrence. Stafford and Warr’s (1993) reconceptualization of deterrence suggests the
punishment experiences of a person's peers were a stronger deterrent than direct punishment experiences.

Initially scholars argued socially integrated people have higher levels of fear than those people who are not socially integrated (Furstenberg, 1971; Merry, 1981; Skogan, 1986; Skogan & Maxfield, 1981). This line of research highlights the detrimental effects that one person’s victimization can have on neighbors who are integrated into the same social networks (Covington & Taylor, 1991; Taylor & Hale, 1986). The social network serves to disseminate fear, through the same mechanisms as other types of information, to other people integrated into the same network. Research suggests only those people integrated into the same network with someone who has been victimized are actually affected (Merry, 1981). Early research examining this hypothesis made the tacit assumption that the transmission of information would be the same for all people socially integrated into the same network. Other scholars have questioned the absolute nature of this transmission effect and instead suggested that the relationship is conditioned by other factors. Specifically, Skogan and Maxfield (1981) suggest the degree to which fears are transmitted through social networks is moderated by the degree to which a person is integrated into the social network. The scholars argue transmission of these experiences is contingent upon the strength of the social integration of participants, noting the likelihood and effects of transmission are proportional to the level of social integration. This means that fear transmitting effects of a vicarious victimization will be strongest for those who are most integrated into the social networks and weakest for those who are least socially integrated into the network.

**Which version of social integration?** The discussion presented above suggests a robust relationship between levels of social integration and people’s fear of crime. It is unclear,
however, exactly how social integration influences people’s levels of fear. The social control version suggests increasing the social integration among neighborhood residents will decrease the fear of crime in the neighborhood. The indirect victimization hypothesis suggests increasing social integration will subsequently increase levels of fear, because potential victimization experiences will be “shared” by more people. These two versions of the model, that suggest contradictory conclusions, should not be assumed to have equal theoretical strength. Research consistently finds an inverse relationship between social integration and fear of crime (Austin et al., 1994; Gibson et al., 2002; Hunter & Baumer, 1982; Franklin et al., 2008; Kanan & Pruit, 2002; Krannich, Berry, & Greider, 1989; McGarrell et al., 1997; Roundtree & Land, 1996). Furthermore, while fear can be transmitted through a person’s social network, there is a relatively low likelihood of transmission for two reasons. First, more people learn about crime and criminal victimizations through media sources rather than others in the same social network (Graber, 1980). Second, fear is only transmitted when people view themselves as similar to the person who was victimized (Hale, 1996). Therefore, it is possible that the more powerful process is where social integration reduces a person’s level of fear (and not the opposite) through influencing perceptions of informal social control mechanisms. However, since the social control version of the social integration model does not perfectly explain fear of crime, it is necessary to consider other processes (e.g., vicarious victimization) and other explanatory models.

The Disorder Model

The second model developed to explain individuals’ levels of fear is the disorder model. This model dovetails nicely with the social integration perspective, specifically with the informal social control version. While some criminologists have conceived the disorder model as separate
from the social integration model, the disorder model can be considered a natural theoretical extension of the social integration model rather than a competing model.

The disorder model gets its name from Wilson and Kelling’s (1982) classic *Broken Windows* article, although the roots of this model come from a broader body of research on the incivilities thesis (Taylor, 1999). The incivilities thesis suggests that fear of crime is the product of visible cues, or signs of disorder, that lead people to believe informal social control mechanisms have broken down and thus the risk of victimization is elevated. The incivilities thesis developed in the wake of the first National Crime Victimization Survey, which indicated that residents’ levels of fear were substantially higher than warranted by the actual risk of victimization (Cook & Skogan, 1984; Taylor, 1999). The incivilities thesis tries to explain the gap between rational fear, that which is warranted by the risk of victimization, and reported levels of fear. It has been widely influential on scholarly research in public policy. The broken windows thesis, which is a variant of the incivilities thesis, has been paramount in developing research examining the influence of ecological conditions on fear of crime (Ferraro, 1995; Taylor, 1999). This thesis has also greatly influenced the development of community oriented policing strategies in the United States, which, as above, is an effective tool to reduce fear of crime (Eck & Maguire, 2006; Greene, 1999).

Apart from changing the nomenclature of incivilities to disorder, the broken windows thesis expanded the incivility thesis in two dimensions that are of interest for this dissertation. First, Wilson and Kelling (1982) address the developmental nature of the relationship between disorderly conditions and fear of crime. The authors argue that, to some extent, disorderly conditions exist in all neighborhoods; the distinguishing feature of problematic disorderly conditions is the length of time these conditions persist. If a symbol of disorder (e.g., broken
window) goes unaddressed for some time, residents’ fear is increased due to beliefs that informal social control mechanisms have broken down. The effect of fear on residents’ behavior is the second dimension of this version of the incivilities thesis important for this dissertation. Wilson and Kelling (1982) suggest that fearful residents will engage in behavior that further reduces the informal social control within the neighborhood. Fearful residents will minimize contact with other residents to minimize the likelihood of a personal victimization, meaning that residents will be unable or unwilling to enact informal social control within the neighborhood. What follows is a discussion of what disorder is, followed by a review of the empirical research examining the relationship between disorder and fear of crime.

**What is disorder?** In order to fully understand the disorder model, it is necessary to have a working knowledge of what constitutes disorder. The earliest operational definition comes from Wilson (1968) who stated conditions of disorder are violations of “standards of right and seemingly conduct” (p. 27). Disorder represents things that violate social norms, although importantly disorder does not necessarily violate the law (Ross & Mirowsky, 2000). In an effort to provide more specificity to this definition and the effects of disorder, researchers now largely divide disorder into two categories: physical and social (Hunter, 1978; Lewis & Maxfield, 1981; Skogan, 1990). Physical disorder involves visual cues of negligence and uncorrected urban decay in the form of abandoned or dilapidated buildings, litter, and overgrown landscaping. Social disorder involves exposure to the behavior of other neighborhood residents in the form of panhandling, public drinking, and audible sexual innuendos. One primary difference between physical and social disorder is the length of time a person is exposed to the aversive stimuli. Physical disorder is consistently experienced for a prolonged period of time, whereas social disorder is experienced as intermittent events (Skogan, 1990).
Research assessing the relationship between disorder and fear of crime. Recall that the earliest empirical research on fear of crime was trying to explain the disjuncture between levels of fear and an objective assessment of the risk of victimization within neighborhoods (Furstenberg, 1971; Lewis & Salem, 1986; Perkins & Taylor, 1996; Skogan, 1986; Skogan & Maxfield, 1981). A growing body of research shows there is a positive relationship between neighborhood crime rates and levels of fear expressed by residents; although, the relationship between the two is relatively weak (Borooah & Carcach, 1997; Liska et al., 1988; Markowitz et al., 2001; Skogan & Maxfield, 1981; Taylor & Hale, 1986, Wilcox et al., 1996). In an effort to explain the disparate fear in neighborhoods, researchers focused their attention on disorderly conditions. This body of research suggests a positive relationship between perceptions of disorder and fear of crime (Covington & Taylor, 1991; Lewis & Maxfield, 1980; Lewis & Salem, 1986; Maxfield, 1984; McGarrell et al., 1997; Skogan & Maxfield, 1981; Taylor & Hale, 1986). At the individual level, perceptions of disorder are stronger predictors of fear than are measures of a person’s vulnerabilities and prior victimization (Maxfield, 1987).

The relationship between disorder and fear of crime is robust in large urban centers in the United States. Skogan and Maxfield (1981) examined residents’ perceptions in three large cities in the United States (Chicago, Philadelphia, and San Francisco) and found a strong positive relationship between disorder and fear of crime ($r = 0.66$). Taylor and colleagues examined the relationship between disorderly conditions and fear of crime in another large city (Baltimore, Maryland) in the United States, finding a robust and positive relationship between disorder and fear (Perkins & Taylor, 1996; Robinson, Lawton, Taylor, & Perkins 2003; Taylor & Covington, 1990; Taylor & Shumaker, 1990).
Another vein of research has examined the link between disorder and fear of crime outside of large urban centers in the United States. Research examining data from Spokane Washington, a mid-sized city, found the disorder-fear relationship was a strong predictor of residents’ level of fear. This result was replicated by Gibson and colleagues (2002) using data from residents in Spokane and two other mid-sized cities in the United States (Council Bluffs, Iowa and Boise, Idaho). Further evidence of the robust disorder-fear relationship is found in data collected by Bloss and colleagues (2012) as part of police sponsored community-satisfaction survey in a smaller city (Greenville, North Carolina) in the mid-Atlantic region of the United States. Again, this research suggests the disorder-fear relationship is generalizable to various locations, outside of large urban centers, within the United States.

The disorder-fear relationship has been examined in areas outside of the United States. Research from United Kingdom, using data collected by the Home Office, found a positive relationship between disorder and fear (Brunton-Smith, 2009). These results are of interest because they serve to further bolster confidence in the generalizable nature of the disorder-fear relationship. Further, data from the Swedish Crime Survey, found a positive relationship between disorder and fear of crime in a small town and a larger metropolitan area in Sweden (Mellgren, 2011). Still other research from a survey of 346 Belgian municipalities (about 57.8% of all municipalities), of varying sizes, found the same disorder-fear relationship (Hardyns, 2010). Taken as a whole, there is ample evidence to suggest the disorder-fear relationship is generalizable to a multitude of locations within the United States and around the world.

**Research testing both the disorder and social integration models.** Research examining the effects of disorder and social integration simultaneously has found empirical support for both models. Franklin and colleagues (2008), using data from multiple cities in the
Pacific Northwest, found support for both the social integration model, specifically the social integration version, and the disorder model, although the results suggest that disorder is a stronger predictor of fear than is social integration. This same finding was reported by McGarrel and colleagues (1997) using data from one city in the Pacific Northwest.\(^4\) Alper and Chappell (2012) using data from a mid-size city in the southeastern United States found that social integration and disorder are each important when independently considered. When both concepts were included in the same model, disorder remained a significant predictor of fear of crime as did one subcomponent of social integration. Therefore, although some scholars (e.g., Sampson & Raudenbush, 1999) argue that the social integration model and the disorder model represent the same mechanisms producing fear, the empirical evidence indicates otherwise. As such, to create a more complete explanatory model of fear of crime it is necessary to integrate the social integration and disorder models. Furthermore, as discussed previously, integrating the social integration and disorder perspectives is quite natural. Both models posit that fear is a product of the strength of informal social control mechanisms. The chief difference between the two perspectives, is that disorder serves as a visual cue to residents that informal social control has broken down in the neighborhood—regardless of their individual level of social integration. It may be possible to improve this integrated model further by considering other explanatory models, such as the vulnerabilities model discussed below.

**Vulnerabilities Model.** The vulnerabilities model is based on findings that suggest sociodemographic groups differentially experience and express fear of crime (Liska et al., 1988; Warr, 2000). Early research identified certain individual characteristics consistently associated

\(^4\) It is interesting to note the similarity in the effects sizes for disorder in both studies, about .29, despite using independent data sources and slightly different measures.
with higher levels of fear of crime across samples and locations, finding high levels of fear among females and the elderly (see generally Doran & Burgess, 2012; Hale, 1996). Scholars were initially perplexed by the high levels of fear among these groups, considering their relatively low likelihood of victimization (Katz et al., 2003; Pantazis, 2000). Attempts to explain high levels of fear despite a low risk of victimization focused on perceptions of vulnerability among these groups (Skogan & Maxfield, 1981; Riger et al., 1978). Research has identified three specific criteria that need to be met to classify a fear response based on vulnerability: exposure to risk, loss of control, and perceptions of serious consequences (Killias, 1990).

**Types of vulnerabilities.** Two broad categories of vulnerabilities have been identified in the literature: physical and social vulnerabilities (Hindelang, Gottfredson, & Garafalo, 1978). Physical vulnerabilities are characterized by an individual’s ability to resist or physically recover from a crime after being victimized (Skogan & Maxfield, 1981). Physical vulnerabilities adequately explain levels of fear among certain sociodemographic groups (e.g., females and the elderly). Social vulnerabilities reflect the ability of a person to deal with victimization based on his/her social position (Ortega & Myles, 1987; Skogan & Maxfield, 1981). Social position refers to a person's financial resources used to avoid being victimized or recover from being victimized; the implication is that people of lower socioeconomic status are unable to avoid or effectively deal with potential victimization. Both physical and social vulnerabilities have been used to predict levels of fear among neighborhood residents of various sociodemographic groups (Doran & Burgess, 2012; Hale, 1996), as described below. Consideration of both types of vulnerabilities

---

5 Although the members of these groups are less likely to be victimized in general, they are at the highest likelihood of being victimized for certain types of crime. Specifically, females are astronomically more likely than males to be the victim of a sex crime (Stanko, 1985).
vulnerability (i.e., physical or social) is important because they reflect different sources of fear (Lewis & Salem, 1986; Skogan & Maxfield, 1981).

Sociodemographic groups and vulnerability. Prior research has identified a number of sociodemographic groups that express differential levels of fear of crime. The categories discussed below indicate the most widely researched factors.

Gender. The most robust predictor of fear of crime across studies and situations is gender. Specifically, research consistently shows females exhibit higher levels of fear than do males (Hale, 1996; Madriz, 1997). Early research suggests females are consumed with thoughts about their personal safety at nearly twice the rate of males (Gordon et al., 1980). Females’ higher levels of fear are particularly interesting because, with few exceptions (e.g., sexual violence), females have a lower risk of victimization than males (Skogan & Maxfield, 1981). Recent estimates suggest that males are violently victimized at a rate of 18.4 per 1000 population while females were victimized at the rate of 15.8 per 1000 population (Truman & Rand, 2010). In all crime categories, with the exception of sexual assault, males were victimized at higher rates than females. Scholars questioned the role machismo might play in explaining the anomalous finding: were males simply less inclined to admit being afraid because of gender roles? Research suggests, however, that these gender differences persist across age groups, social classes, and countries (Hale, Pack, & Salkeld, 1990; LaGrange & Ferraro, 1989; Warr, 1984); the persistent nature of the gender differences suggests that the role of machismo, if any at all, is small and less important to consider than other explanations for the gender difference (Hale, 1996). Two more promising explanations for the persistently higher levels of fear among females have been presented in the literature: inaccurate assessment of victimization risk and the belief that fear is a completely independent of actual assessments of risk (Hale, 1996). The former
explanation suggests scholars have inaccurately measured the actual risk of females and therefore the heightened female fear is a direct consequence of higher levels of victimization than those known to researchers. The latter explanation suggests that higher levels of fear among females is a product of feeling vulnerable to potential victimization rather than a measure of the objective risk of victimization (Sacco, 1990).

Based on the first explanation, there are strong reasons to believe that risk of victimization for females is inaccurately calculated. The largest problem with calculating objective risk for females stems from the types of crimes of which females are disproportionately victims, namely sexual assault (Stanko, 1985, 1987, 1990). Incidents of sexual assault, because they are notoriously underreported, pose an obstacle to calculating the objective risk of victimization for females (Block & Block, 1984). The problem is made salient by research which suggests that, when crime specific measures of fear are obtained, fear of sexual violence seems to be the root cause of fear that is generalized in these measures to all crime types (Warr, 1985).

In essence, the research suggests that fear of sexual violence is of paramount importance to females, a view widely supported by feminist researchers (Gordon & Riger, 1989; Junger, 1987).

The second explanation suggests females’ higher levels of fear are a byproduct of miscalculations of vulnerability, because higher levels of fear persist after controlling for reported risk of victimization (Skogan & Maxfield, 1981). Evidence suggests persons who perceive that they are unable to adequately fend off and/or recover from a victimization, will be more fearful regardless of the objective risk of actually being victimized in the first place (Killias, 1990). Therefore, levels of fear are not driven by an objective assessment of risk, but rather by a subjective assessment of the ability to prevent or deal with a potential victimization. Research suggests that, indeed, females judge the consequences of victimization more seriously
than males; meaning even with the same relative risk of victimization females would likely be more fearful than males (Warr, 1984). This argument is supported by research indicating women who feel they could physically resist an attack expressed significantly lower levels of fear than females who felt they could not physically resist an attack (Riger et al., 1982).

In sum, the research suggests that females’ elevated levels of fear reflects both of the explanations presented above—inaccurate assessments of victimization and miscalculations of vulnerability (Hale, 1996). Females’ levels of fear are largely driven by crimes of a sexual nature and these crimes are drastically underreported, which artificially reduces risk-of-victimization estimates. However, even if objective risk could be calculated, females would express higher levels of fear due to perceptions of serious consequences and potentially the inability to fend off the attack.

Age. As people age, they express higher levels of fear (Akers et al., 1987; Box et al., 1988; Hale, 1996; Yin, 1985). Some scholars have even suggested that, for the elderly, fear of crime is a more salient concern than is crime itself (Baumer, 1978; Cook et al., 1981). The elevated levels of fear are interesting because the risk of victimization decreases as a person ages (Fattah & Sacco, 1989). As with females, the levels of fear amongst the elderly seem to represent something other than objective risk of victimization.

The most probable explanation for elevated levels of fear among the elderly are the perceptions that they will be unlikely to physically prevent or recover from being victimized, or in other words feelings of vulnerability. The elderly feel they are more physically and socially vulnerable to potential victimization than younger members of society (Akers et al., 1987; Conklin, 1975; Hale et al., 1990). Research suggests that people feel the likelihood they will survive or be able to recover from a violent victimization is reduced as they age (Conklin, 1975).
The elderly often lack the physical capacity to fend off a violent attack and are less likely to take self-protective measures during an attack (Dussich & Eichman, 1976). Additionally, elderly persons often live in conditions that are not conducive to coping with victimization (e.g., alone and on fixed incomes; Akers et al., 1987; Hale et al., 1990). High levels of fear among the elderly do not represent their actual risk of victimization, but rather the result of feeling physically and socially vulnerable to victimization.

Some scholars have questioned the veracity of the consistent and inverse relationship between aging and fear of crime (Fattah & Sacco, 1989). These scholars have suggested that, while the risk of victimization among the elderly for most crimes decreases with age, for personal theft, the elderly have victimization rates similar to the general population. As such, the risk of victimization could have been substantially underestimated by previous researchers. Other scholars moved away from standard global measures of fear (e.g., how afraid are you to walk at night in your neighborhood) to more crime-specific measures (Ferraro & Lagrange, 1988; Lagrange & Ferraro, 1989). The findings from this research suggest that for most types of crime, the elderly had lower levels of fear than younger persons. The more specific the measure used to assess fear, the smaller the effect of age (Ferraro & Lagrange, 1988). This suggests elderly residents’ levels of fear may be crime specific like they were for females.

Some research suggests that the relationship between age and fear of crime is conditioned by the respondent’s contextual conditions (see generally Fattah & Sacco, 1989; Hale, 1996; Warr, 1984). Research suggests that neighborhood crime rates, type of neighborhood, and socioeconomic status of the neighborhood all work to moderate the relationship between age and fear of crime (Hale, 1996). Specifically, elderly residents express higher levels of fear when they reside in a high crime neighborhood (Jaycox, 1978). Additionally, elderly residents living in
inner city neighborhoods express higher levels of fear than similar residents in rural areas and small towns (Baumer, 1985; Clemente & Kleiman, 1976; Lebowitz, 1975). Finally, elderly residents express higher levels of fear than younger residents in low income neighborhoods than in higher income neighborhoods (Lebowitz, 1975).

In sum, while some research suggests there is a relationship between age and fear of crime, the relationship is not as direct as many would expect. In fact, the relationship seems to be driven by the elderly’s fear of being the victim of a personal theft. Additionally, the relationship between age and fear is moderated by the contextual conditions of the elderly person; with low income, high crime, and inner city neighborhoods augmenting levels of fear among the elderly.

**Racial/Ethnic minorities.** Another often cited sociodemographic characteristics associated with people’s fear of crime is race. Research suggests fear of crime is higher among African-Americans than among Whites (Biderman et al., 1967; Covington & Taylor, 1991; Garafalo, 1979; Parker et al., 1993; Skogan & Maxfield, 1981). Other researchers have inferred higher levels of fear among racial groups by noting that African-Americans are more likely to feel it is necessary to arm themselves to prevent being victimized (Hale, 1996). Elevated levels of fear likely stem from two mechanisms. First, African-Americans are disproportionately represented as residents of neighborhoods characterized by higher crime rates (Convington & Taylor, 1991; Hale, 1996; Skogan & Maxfield, 1981). This means that African-Americans are more likely to live in communities where the risk of victimization is higher, which should produce elevated levels of fear (Hale, 1996). Second, and related, elevated levels of fear among African-Americans may stem from feelings that one of the primary fear reduction mechanisms available in modern society, the criminal justice system, is less responsive to the concerns of African-American residents (Smith, 1987).
Although the bulk of the research examining racial differences has focused on differences between African-Americans and Whites, an emergent body of research examines the effects of ethnicity (e.g., Lane & Meeker, 2003; Madriz, 1997; Menjivar & Bejarano, 2004; Taylor et al., 2009). This research shows that Hispanics/Latinos report higher levels of fear than even African-Americans (Florida Department of Juvenile Justice, 2000; Parker et al., 1993; Haghighi & Sorenson, 1996). Further, the research conducted by Taylor and colleagues (2009) found higher levels of fear among Hispanics/Latinos than other racial/ethnic groups, despite living in neighborhoods with relatively low risks of victimization. These findings indicate that one of the mechanisms traditionally used to explain higher levels of fear among African-Americans—living in high crime neighborhoods—does not apply to Hispanics/Latinos. Scholars have suggested Hispanics/Latinos are socially vulnerable because of an aversion to contacting the police due to language barriers and concerns regarding immigration status (Langan et al., 2001; Walker et al., 2007). In other words, like African-Americans, Hispanics/Latinos are reticent to call the police because these residents feel the police are not working in their best interest. The end result of both situations is increased levels of social vulnerabilities for both African-Americans and Hispanics/Latinos.

*Socioeconomic status.* Research generally finds a relationship between socioeconomic status (SES) and fear of crime (Hale, 1996; Will & McGrath, 1995). Early research looking at the relationship between SES and fear of crime finds an inverse relationship (Clemente & Kleiman, 1977; Will & McGrath, 1995). The relationship between SES and fear of crime is explained through the lens of the vulnerabilities model. Specifically, lower SES individuals are unable to protect themselves or their property from victimization and are simultaneously exposed to higher levels of risk than those of higher SES (Hale, 1996; Wyant, 2008). The vulnerability of
SES works on two distinct dimensions. Per the first dimension, the lower a person’s SES, the higher the probability s/he will reside in or around a large pool of criminal offenders which increases their relative risk of victimization (Wyant, 2008). Research suggests that neighborhood levels of concentrated disadvantage, or extreme poverty, is one of the strongest predictors of neighborhood level crime rates (Pratt & Cullen, 2005). Per the second dimension, the lower a person’s SES the lower the likelihood s/he can avoid, protect against, and/or recover from a potential victimization (Hale, 1996). Higher SES individuals have the ability to purchase devices and things that will lower the risk of victimization (e.g., locks, alarms, etc.). Additionally, residents of higher SES have the ability to repair and replace items damaged or stolen when victimized. In sum, the inverse relationship between SES and fear of crime reflects both the greater likelihood of victimization and the lesser likelihood of mitigation and recovery on the part of the low SES individual.

Prior victimization. Many of the explanations presented above rest on the assumption that fear is, at least in part, a rational response to objective risk of victimization. Therefore, the logic follows that a person’s level of fear should be a function of their prior victimization experience. This model posits that being the victim of a crime, or experiencing “direct victimization,” will augment a person’s level of fear (Hale, 1996). The research examining the relationship between direct victimization and fear of crime has found strong support from prior research (Bennett & Flavin, 1994; Bursik & Grasmick, 1993; Ferraro, 1995; Skogan, 1990; Taylor, 1999). The strong positive relationship found by these researchers, is to be expected by the vulnerabilities model (Hale, 1996). However, other research finds the relationship between victimization and fear does not exist or is rather weak at best (Garofalo, 1979; Gates & Rohe, 1987; Liska, Sanchirico, & Reed, 1988; Wanner & Caputo, 1987).
In addition to considering the effects of direct victimization, research has long argued the importance of considering the effects of *indirect or vicarious victimization* on subsequent levels of fear. As reported above, in the discussion of the Indirect Victimization Hypothesis of the Social Integration model, indirect or vicarious, victimization refers to victimization of other people in a person’s social network or in their neighborhood rather than a personal victimization (Hale, 1996). Research suggests the relationship between vicarious victimization and subsequent levels of fear is stronger than the effect of direct victimization (Lewis & Salem, 1986; Skogan & Maxfield, 1981; Tyler, 1980). Hale (1996) suggests this is the result of people experiencing higher levels of indirect rather than direct victimization. This belief is in line with prior research that suggests people often over-estimate events that are relatively rare (e.g., being the victim of a crime) and that exposure to information about the victimization of others increases the perception of risk of personal victimization (Warr, 2000).

Research suggests there are two primary sources of information about indirect victimization: personal relationships and media coverage (Hale, 1996). Most research has tended to focus on the mass media as a source of vicarious victimization, largely because criminal victimization remains a relatively rare event. Research has found that fear of crime was higher amongst those people who were indirectly victimized through the consumption of both print and television mass media accounts of crime (Gordon & Heath, 1981; O’Keefe & Reid-Nash, 1987). Other researchers have found that the relationship between crime-centric media consumption and fear of crime is conditioned by other factors, including the spatial proximity of the story (Hale, 1996) and experience in dealing with crime (Gerbner & Gross, 1976). However, other researchers have found that the relationship between mass media exposure and crime is

This section described two additional theories—in addition to the social integration theory—that help us to understand fear of crime. Adding elements of these two theories to the social integration model may help us to better understand this important construct. Prior empirical research has consistently found a relationship between disorder and fear of crime (e.g., Hale, 1996; Warr, 2000) even after controlling for levels of social integration (e.g., Alper & Chappell, 2012; Franklin et al., 2008; McGarrel et al, 1997). Perceptions of disorder may be an important predictor of fear independent of social integration. Furthermore, prior research which simultaneously considered concepts from all three models finds that some types of vulnerabilities still matter after controlling for levels of social integration and perceptions of disorder (e.g., Alper & Chappell, 2012; Franklin et al., 2008; Gibson et al., 2002; McGarrel et al, 1997). Therefore, it seems clear that vulnerabilities may add something additional to the new social integration and disorder model.

**Reciprocal Effects**

Examining and understanding the consequences of fear has been an important development in the fear crime literature. Researchers are interested in determining what, if any, effect fear of crime has on a person's level of social integration (Bellair, 2000; Kubrin & Weitzer, 2003; Lee & Earnest, 2003; Liska et al., 1988; Liska & Warner, 1991; Markowitz et al., 2001; Oh & Kim, 2009; Skogan, 1986, 1990). These scholars suggest it is critical to consider the reciprocal effects between fear and social integration. Failing to account for the endogenous relationship between fear of crime and social integration will affect parameter estimates between
social integration and fear of crime, yielding biased and inconsistent estimates (Paxton, Hipp, & Marquart-Pyatt, 2011). Scholars have developed two viable theoretical explanations of what the reciprocal relationship might be: a *positive feedback loop* and a *negative feedback loop*. A feedback loop is when a resident becomes fearful of crime, the person then does something to reduce their level of fear. In this dissertation, it is hypothesized that the person will alter their level of social integration to alleviate the increased level of fear. This means there are two potential options, a person can become more socially integrated into the neighborhood (a positive feedback loop), in an effort to reduce fear by bolstering informal social control within the neighborhood. That is, as fear drives increased social integration, the higher rates of social integration subsequently will lead to lower rates of fear. As levels of fear decrease over time, the likelihood of social integration should decrease from on this perspective. Or, a person can decrease their level of social integration (a negative feedback loop) in an effort to reduce their risk of victimization, which leads to a reduction in fear. In this loop, fear leads to less social integration, lower social integration subsequently increases fear in a cycle. Each type of feedback loop is more fully discussed below along with the research that provides more support for the negative feedback loop.

**Positive feedback loop.** In the simplest terms, the positive feedback loop argument hypothesizes that increased levels of fear will strengthen people's social integration; that is more fearful people will become more socially integrated. This hypothesis stems from the *functionalist perspective* put forth by Durkheim (1933, 1938) that characterizes crime as something that is *necessary* in social groups. This characterization of crime as a necessity for social groups does not suggest that crime itself is desirable; rather it is necessary to achieve the desired social response. According to Durkheim (1933, 1938), crime works to bring people together to define
and reinforce standards of conduct appropriate for that social group. In other words, crime works as a mechanism of social control through feedback loops that are used to maintain functional social groups (Stinchcombe, 1968). For example, a child who is kidnapped and subsequently murdered in a society will serve to bring group members together to address the problem. The process identified by the functionalist perspective has been extended to the fear crime literature by other scholars (e.g., Liska & Warner, 1991; Woldoff, 2002). Scholars operating from the functionalist perspective suggest that both crime and fear of crime can work in the manner depicted by Durkheim (1933, 1938). Specifically, elevated levels of either/both crime and fear can serve to promote collective actions including: 1) establishing community groups, 2) community events, 3) support groups, and 4) victim and witness programs (Miethe, 1995). One of the most common types of collective responses is the formation of neighborhood watch programs (Miethe, 1995).

The idea that fear of crime would bring residents together in the process outlined by Durkheim (1933, 1938) is a tacit assumption made by many community organizers and policymakers, although empirical research yielded inconsistent results. A growing body of research, however, questions the assumption that fear is the primary mechanism that motivates people to become more socially integrated. Studies have suggested participation in community groups focused on crime reduction is driven by factors other than a person's fear of crime (DuBow & Podolefsky, 1979; Kidder, 1978; Lewis, Salem, & Szoc, 1986; Ross & Jang, 2000). Specifically, a person is more likely to participate in a community group specifically addressing crime issues if they already participate in other community groups (DuBow & Podolefsky, 1979; Lewis, Salem & Szoc, 1980). Additionally, people who reside in more ethnically and racially homogenous neighborhoods are more likely to participate in any type of community group (Ross
& Jang, 2000). However, the conclusions from this research are only suggestive as the research did not specifically test the positive feedback loop hypothesis.

There has been one study, by Liska and Warner (1991), to actually test the effects of the positive feedback loop as it relates specifically to fear of crime. The results from this study ultimately did not support the contentions of the positive feedback loop; and instead support a negative feedback loop (Liska & Warner, 1991). In other words, the study found that fear did not increase levels of social integration, but rather served to further diminish them. The results suggest that although crime becomes stabilized, as predicted by a positive feedback loop, this is largely the result of residents minimizing their exposure to risky situations.

One more recent study found this reciprocal relationship may be more nuanced than the relationship examined in earlier research. Fear of crime may augment only certain types of social interactions among neighborhood residents. Therefore, evidence of the positive feedback loop would only be found for certain types of social integration. According to Woldoff (2002), fear differentially strengthens the attitudinal and behavioral attachments to the community. Attitudinal attachments indicate that a person feels a strong emotional connection to their neighborhood, whereas behavioral attachments indicate that a person takes actions that show their attachment to the neighborhood. This study found that fear of crime increased the behavioral attachments to the community, but decreased the attitudinal attachment to the community. Therefore, the presence of the positive feedback loop may be a product of how social integration is measured.

**Negative feedback loop.** Pursuant to the negative feedback loop hypothesis, fear will ultimately reduce the social integration of neighborhood residents, resulting in increased levels of fear. For example, fearful residents may isolate themselves in their homes to minimize the risk
of victimization; this increases levels of fear because they lose social ties with their neighbors and become less socially integrated into the neighborhood. This type of feedback loop was originally presented by Wilson and Kelling (1982) in their *Broken Windows* piece, and was predicated on reduced social ties and weakened informal social controls. Skogan (1986, 1990) suggested that economic and commercial disinvestment within neighborhoods could further weaken informal social controls; he labeled this process the *spiral of decay*. Empirical research supports the notion that fear will negatively influence social interactions between neighborhood residents (e.g., Palmer, Ziersch, Arthurson, & Baum, 2005).

The negative feedback loop hypothesis is supported by prior research. As reported above, prior research suggests fear of crime can produce behavioral changes (Doran & Burgess, 2012), including the implementation of avoidance strategies (Box et al., 1988; Keanne, 1998; Liska et al., 1988; Reid et al., 1998; Riger, et al., 1982; Warr, 1985). These avoidance strategies are of key importance to the hypothesis of the negative feedback loop because they can reduce participation in social activities, increase levels of distrust, and inhibit social interactions (Ross & Mirowsky, 2000; Smith, 1987; Wilson-Doenges, 2000). As discussed in prior sections, reduced social integration will likely increase levels of fear.

Empirical research examining the reciprocal effects of social integration and fear of crime has confirmed the existence of a *negative feedback loop*. The first study in the fear crime literature to examine the reciprocal effects was conducted by Allen Liska and colleagues (1988) using data from the national crime survey conducted in the United States during the mid-1970s. The results from this research suggested an inverse relationship between a person's social interactions with their neighbors and their level of fear. These findings have been reproduced in other countries around the world. Specifically, Lee and Earnest (2003) used data from the 1992...
wave of the International Crime Survey conducted by the United Nations. The results, based on surveys from eleven countries, coincide with those of Liska and colleagues (1988). Therefore, there is evidence to suggest that the relationships specified by the negative feedback loop are robust and generalizable.

**Contextual Effects**

According to criminological research, crime is neither randomly nor evenly distributed in geographic space. Some of the earliest scholars to document the concentration of crime in certain areas posited the geographic variation in crime was the effect of geographic variations in *social factors* (Guerry, 1833; Quetelet, 1831). Subsequent scholars, particularly those of the Chicago School of Sociology, refined the theoretical explanations for the relationship between social factors and crime by incorporating concepts of human ecology (Park & Burgess, 1925; Shaw & McKay, 1942). This approach identifies a relationship between the individual and the environment in which they are located. In other words, “the actor selects, checks, suspends, regroups, and transforms the meaning [of things] in light of the situation [or *context*] in which he is placed and then directs his action” (Blumer, 1969, p.5). Modern scholars refer to the effects of the social conditions on individual behavior as *contextual effects*.

While criminologists have a relatively firm understanding of contextual effects as they relate to crime, there is comparatively little understanding about how contextual effects influence fear of crime. Scholars have suggested that any theoretical explanation of crime, or related events (e.g., fear of crime), that does not consider context is incomplete (Lee & Ulmer, 2000; Wikström, 2006). Research suggests contextual effects are important for understanding fear of crime, because fear is often based on the characteristics of the place in which a person lives,
rather than exclusively on the person’s own characteristics (Curtis & Jones, 1998). In other words, the contextual effects of fear represent something more than the amalgamation of individual-level fear of crime predictors.

Typically when criminologists are interested in assessing contextual effects, and especially within the fear crime literature, scholars focus on neighborhood context. The most prevalent context examined by criminologists, developed by Shaw and McKay (1942), is the neighborhood’s level of social disorganization (Pratt & Cullen, 2005; Raudenbush & Sampson, 1999; Sampson, 2000). Neighborhoods characterized as socially disorganized represent a context in which there are weak social control mechanisms in place to control the behavior of neighborhood residents (Raudenbush & Sampson, 1999; Sampson, 1991). This means crime, and by extension fear of crime, is the result of weakened or missing social controls within neighborhoods. The strength of neighborhood social controls, or the degree of social disorganization, is most frequently assessed using variables depicting the structural conditions (e.g., socioeconomic status, residential stability, and racial/ethnic heterogeneity) within the neighborhood (Raudenbush & Sampson, 1999). A meta-analysis by Pratt and Cullen (2005) shows the structural characteristics are among the most robust macro-level predictors of neighborhood crime rates.

Many scholars have also highlighted the importance of incorporating contextual effects into the study of fear of crime (e.g., Gibson et al., 2002; Hale, 1996; McGarrell et al., 1997; Skogan & Maxfield, 1981) and yet there remains a general dearth of such research. Additionally, with rare exception (e.g., Franklin et al., 2008), the research that incorporated contextual effects was hampered by methodological inadequacies. The specific methodological problems of prior research include very small sample sizes (e.g., McCrea et al., 2005) and violation of the
independent error assumption in linear regression modeling (e.g., Alper & Chappell, 2012; Katz et al., 2003). Despite the shortcomings of prior research, there are theoretical reasons to believe that contextual effects are important when studying fear of crime. The effects of contextual variation are important when considering how social integration, disorder, and vulnerabilities influence a person's level of fear. The process by which contextual variation affects each of these theoretical models is discussed below.

The relationship between social integration and contextual effects. The need for considering contextual effects when examining the relationship between social integration and fear of crime stems from social disorganization theory. The social integration model and social disorganization theory are part and parcel of one another. The social integration model depicts the likelihood that an individual would act in the neighborhood’s interest to control the behavior of others residents (Franklin et al., 2008; Gibson et al., 2002). Social disorganization theory, especially the systemic model, posits neighborhoods with certain social characteristics will be able to effectively control the behavior of its residents (Bursik & Grasmick, 1993; Kasarda & Janowitz, 1974). To accurately understand the relationship between informal social control and fear of crime, it is necessary to account for both the individual and neighborhood-level processes (Berry & Kasarda, 1977).

The social integration model accounts for individual variation, whereas social disorganization theory will account for the neighborhood-level processes. The social integration model and social disorganization theory focus on the idea of informal social control processes, the former at the individual-level and the latter at the neighborhood-level. Social disorganization theory suggests certain structural characteristics are proxies for the strength of social control processes at the neighborhood-level. The structural characteristics most often identified by social
disorganization theory are concentrated disadvantage, racial/ethnic heterogeneity, and residential instability. Research consistently finds the theoretically specified relationship, identified by the systemic model of social disorganization theory, between the structural characteristics and the strength of neighborhood-level informal social controls. The exact process for each of these structural characteristics, as it relates to fear of crime, will be briefly discussed below.

A neighborhood's level of concentrated disadvantage can affect the integration of neighborhood residents. Research suggests people living in neighborhoods with higher levels of concentrated disadvantage experience higher levels of social isolation than residents in more affluent neighborhoods (Merry, 1981; Suttles, 1972; Taylor, 1988). Social isolation is the residents’ perceptions of increased risk of victimization due to living in close proximity to a larger pool of potential criminal offenders (Baumer, 1978; Belyea & Zingraff, 1988; Franklin et al., 2008; Sacco, 1985; Wyant, 2008). Residents in neighborhoods with high levels of concentrated disadvantage might isolate themselves in order to mitigate their potential risk of victimization outside their home (DeKeseredy, Schwartz, Alvi, & Tomaszewski, 2003; Rainwater, 1966).

The social integration of neighborhood residents is likely effected by the neighborhood’s level of racial/ethnic heterogeneity. Research suggests residents, regardless of race, from neighborhoods with higher levels of racial/ethnic heterogeneity consistently express higher levels of fear than residents from more homogenous neighborhoods (Covington & Taylor, 1991; Merry, 1981; Taylor, 1988). The source of elevated levels of fear for residents in heterogeneous neighborhoods stems from the inability to predict the behavior of people from other racial/ethnic groups (Rainwater, 1966; Suttles, 1972). The lack of understanding leads to breakdowns in
communication among residents and ultimately to elevated levels of social isolation and diminished social control (Maccoby, Johnson, & Church, 1958; Merry, 1981).

The level of social integration is also likely affected by the degree of residential instability within a neighborhood. Scholars have identified residential instability as a crucial concept for developing neighborhood level social organization (Kasarda & Janowitz, 1974). Research suggests, independent of other neighborhood level processes, residential instability is negatively related to the social integration of neighborhood residents (Kornhauser, 1978; Sampson, 1988, 1991). Regardless of the tenure of individual residents, which is positively associated with social integration (Morenoff et al., 2001; Sampson, 1988, 1991; Sampson et al., 1997), it is difficult to develop effective social relationships with other residents in neighborhoods with high levels of residential instability (Bursik & Grasmick, 1993; Morenoff et al., 2001; Gibson et al., 2002; Sampson et al., 1997).

The relationship between disorder and contextual effects. Wilson and Kelling (1982) made no reference to contextual variation in the initial presentation of the broken windows hypothesis. Their initial conceptualization posited that disorder would have the same fear-evoking effects for all people regardless of neighborhood context. Scholars who have tested the invariant nature of broken windows theory were unable to substantiate this claim. Research consistently shows neighborhood context affects the perception of disorder (Franzini, Caught, Nettles, & O’Campo, 2007; Gau & Pratt, 2008, 2010; Piquero, 1999; Sampson & Raudenbush, 2004; Wilcox et al., 2004).

When considering the relationship between disorder and fear of crime, contextual effects matter for two reasons. The first reason is differential spatial patterning of disorder problems (Rohe & Burby, 1988; Spelman, 2004; Taylor & Hale, 1986). In other words, neighborhood
context is related to the prevalence of, and fear caused by, different types of disorder. Secondly, perceptions of the quantity, severity, and the effects of disorder vary according to neighborhood contextual conditions. Studies from Boston, Chicago, and Denver suggest the importance of considering the effects of concentrated disadvantage and racial/ethnic heterogeneity (Franzini et al., 2007; Piquero, 1999; Sampson & Raudenbush, 2004). This research finds disorder exerts the strongest effect on the perceptions of residents from wealthier and more racially homogenous neighborhoods. Other empirical studies have found the same effect when examining smaller cities and rural areas (Gau & Pratt, 2008, 2010). Therefore, failing to account for neighborhood context may mask the true relationship between disorder and fear of crime.

The relationship between vulnerabilities and contextual effects. When examining the relationship between vulnerabilities and fear of crime, it is theoretically imperative to consider the effects of social context. Research results indicating high levels of fear among residents who are racial/ethnic minorities and/or from a lower socioeconomic status were likely reflecting spurious relationships that will disappear after considering variations in neighborhood context. Social vulnerabilities (e.g., race/ethnicity and SES) may not represent intrinsic differences between people, but rather contextual differences associated with locations in which socially vulnerable groups are likely to reside. Early research highlighted potential spurious relationships between certain types of vulnerabilities (i.e., social vulnerabilities) and fear of crime; these relationships were the product of contextual variation (e.g., the neighborhood in which they live) rather than individual feelings of vulnerability (Hale, 1996; Ortega & Myles, 1987; Skogan & Maxfield, 1981). Specifically, members of racial and ethnic minority groups are more likely to reside and work in areas characterized as socially disorganized (Massey & Denton, 1993; Skogan & Maxfield, 1981). A similar effect can be seen with socioeconomic status. Poor residents are
not inherently more fearful than are wealthier residents, rather poor residents tend to live and work in areas with higher crime problems.

**Current Study**

The literature reviewed above suggests there is considerable variation in the ability to effectively explain fear of crime using the social integration, disorder, or vulnerabilities models. While certain factors associated with each of these models have consistently explained a person's level of fear, the effects of other factors have been inconsistent. Scholars have suggested the reason for the inconsistent findings is the use of incomplete theoretical models to explain fear of crime (Lewis & Salem, 1986). Recent research has attempted to correct this problem by simultaneously testing the effects of multiple models (e.g., social integration, vulnerabilities; Alper & Chappell, 2012; Franklin et al., 2008; Gibson et al., 2002; McCrea et al., 2005). The inconsistent effects of certain factors have continued, however, in this more recent research, leading scholars to conclude that explaining fear of crime requires an even more comprehensive explanatory model (Warr, 2000). A more comprehensive fear of crime model would not only incorporate social integration, disorder, and vulnerabilities models, but would also simultaneously account for reciprocal effects and contextual effects.

In order to develop this more comprehensive explanatory model for fear of crime, it is both necessary and appropriate to incorporate concepts from the disorder and vulnerabilities models into the social integration model. Despite the objections of some scholars (e.g., Sampson & Raudenbush, 1999) who have suggested social integration and perceptions of disorder share the same etiology, it is necessary to include both concepts in a comprehensive explanatory model. The necessity of including both stems from empirical research that has found that
disorder is one of the most robust predictors of fear of crime, even after controlling for factors linked to the social integration model (McGarrell et al., 1997; Taylor & Hale, 1986). This suggests that while social integration and disorder may be related, each construct represents something unique. Adding concepts from the vulnerabilities model to the blended social integration and disorder model is necessary because neither model fully accounts for certain types of vulnerabilities, notably age and gender (Hale, 1996; Skogan & Maxfield, 1981). This more fully specified model will be used to address the first research question of this dissertation by testing three hypotheses:

- The social integration model will be strengthened by integrating it with the disorder model.
- The social integration model will be strengthened by including concepts from the vulnerabilities model.
- The social integration model will be stronger still than either prior model by including concepts from both disorder and vulnerabilities. Additionally, a more complete fear of crime model will account for the potential that levels of fear can simultaneously influence some factors that are used to predict fear, notably social integration (Skogan, 1986; 1990). Although many scholars have specified this reciprocal relationship, it has not been widely tested in the literature. The extant empirical research that has examined the reciprocal relationship between fear of crime and social integration has generally found a negative feedback loop (Lee & Earnest, 2003; Liska et al., 1988; Liska & Warner, 1991). Failing to consider this reciprocal relationship could be another reason for the inconsistent findings regarding the effects of social integration. Research that does not consider a likely reciprocal relationship yields inconsistent and biased parameter estimates (Paxton et al., 2011). This more fully specified model will be used to address both parts of the second research question of this dissertation by testing three hypotheses:
There will be a significant reciprocal relationship between an individual’s level of fear and his/her level of social integration.

Higher levels of individual social integration will predict lower levels of fear, but the effect size will be decreased after controlling for the reciprocal relationship.

Higher levels of fear will predict lower levels of social integration after controlling for the reciprocal relationship.

Furthermore, a more comprehensive fear of crime model would simultaneously account for how social context can influence the relationships between each of the models and a person’s level of fear. Scholars suggest the relationships between certain demographic factors (i.e., race/ethnicity and socioeconomic status) are attributable to contextual variation, rather than demographics as originally thought (Skogan & Maxfield, 1981). Additionally, empirical research has found that contextual variation strongly influences perceptions of disorder (Gau & Pratt, 2008, 2010; Piquero, 1999). Lastly, scholars suggest that it is logically and theoretically imperative to examine the influence of contextual variation on social integration (Sampson, 1988, 1991). Few scholars in the fear of crime research have examined contextual effects, and those who have included contextual effects have been hampered by methodological weaknesses (Alper & Chappell, 2012; Franklin et al., 2008; McCrea et al., 2005). This still more fully specified fear of crime model will be used to address the third research question of this dissertation by testing three hypotheses:

- After considering social context, the only factors from the vulnerabilities model that will remain important are age and gender.
- After considering social context, the effect of disorder on fear of crime will be reduced.
- After considering social context, the reciprocal effect will remain, although the size of the effect between social integration and fear will be reduced.
Chapter 3: Research Methods

Data

The 2004 Hillsborough County Sheriff’s Office Community Survey is used to examine the relationship between vulnerabilities, perceptions of disorder, and social integration and fear of crime. The 2000 United States Census is used to obtain sociodemographic data to examine how these relationships are conditioned by neighborhood context. The data are described in greater detail below.

The 2004 Hillsborough County Sheriff's Office community survey.

In June of 2004 the Hillsborough County Sheriff’s Office (HCSO) began working on a community survey used to assess how the agency was perceived by constituents in Hillsborough County. The agency collected data from a cross-section of Hillsborough County residents to determine levels of citizen satisfaction with the police what crime problems, if any, the citizens of wanted HCSO to address. The agency, in conjunction with academic partners at the University of South Florida, developed an instrument and sampling plan to provide valid, reliable, and unbiased results. According to personal communication with HCSO command staff (Dr. Carl

---

6 Although using a different sample and including new questions (i.e., pedophilic sexual homicide), HCSO repeated a community survey again in 2005. The 2004 version of the survey was selected because it included measures for all constructs of interest and minimized potential priming effects associated with rare and sensationalized crimes included in the 2005 version.
Hawkins, HCSO retired) responsible for the community survey, the motivation for the survey was assessing the attitudes and perceptions of residents in unincorporated Hillsborough County.

The sample was selected using parcel data from the Hillsborough County Tax Assessor's Office. In order to ensure representativeness from all constituents served, a randomly selected and equal number of residentially zoned parcels (n ≈ 200) from all census designated areas (N=30) within unincorporated Hillsborough County. Census designated places (CDP) are geographically defined places that are not incorporated under state law, but which otherwise reflect established incorporated places (e.g., towns and villages). Often times within unincorporated counties, residents will identify with their CDP in the same way that residents of an incorporated municipality might identify with their neighborhood.

In August of 2004, the residents of each randomly selected parcel (N=6800) were sent a postcard in the mail advising them that they had been selected for participation in the study. One week later each randomly selected parcel was mailed a copy of the survey along with the postage-paid reply envelope. Beginning two weeks after the initial mailing, a follow-up postcard was mailed to residents of selected parcels that had yet to respond to the initial survey request reminding them to complete the survey. One week after the reminder postcard was sent, a replacement survey and another postage-paid reply envelope were sent to the units that had still not replied. The sampling method generally adheres to Dillman's (1978) Total Design Method which is largely accepted as the gold standard for mailed surveys (Fowler, 2009).

As of October 15, 2004 a total of 2,222 completed surveys were returned, a response rate of 32.67%. After entering data from all surveys received, some data were eliminated from the final sample. The most three most common reasons for eliminating data were duplicate

---

7 This date was selected as the cutoff date, to allow researchers to analyze the data and present the results to HCSO and the Hillsborough County Commission early in 2005.
The final data set consists of 1,898 usable surveys, a final response rate of 27.91%. Selected demographics of the final sample are presented in Table 1. Aggregated demographic information from the Community Survey participants in each of the 30 CDPs are presented in Table 2. The sample is disproportionately female (56.0%), White (Non-Hispanic; 79.2%), and married persons (67.8%). The sample is disproportionately comprised of White (Non-Hispanic) (79.2%) and married persons (67.8%). Almost 60% of the sample has at least some college education and the vast majority of participants were employed the week prior to completing the survey (63.7%).

Table 2 depicts selected average demographic characteristics of the respondents to the community survey for each of the census designated places in unincorporated Hillsborough County. The first thing that should be noted from Table 2 is the amount of heterogeneity between neighborhoods on most factors. For instance the number of responses from each neighborhood varies substantially, where the neighborhood with the most respondents has almost four times as many participants as the least responsive neighborhood. A similar trend is seen for the race/ethnicity of the respondents. Other items suggest that there is more homogeneity between the neighborhoods. The data suggest that regardless of neighborhood, the average respondent is middle-aged and has lived in the neighborhood for a substantial portion of time.

Data strengths. There are three features of the community survey, in conjunction with census data, which makes these data particularly well-suited for answering the current research questions. The first feature is the comprehensive nature of the questionnaire, a copy of which can

---

8 Data were eliminated as an incomplete submission when less than 70% of survey items were completed or written answers were written in a language other than English. Addresses that could not be located within a CDP of Hillsborough County were in areas that had typically been annexed by a city or fell outside the geographic boundaries of the CDP.
be found in Appendix A. Unlike prior research, often relying on theoretically incomplete survey data, the community survey has multiple items for each of the theoretical constructs of interest in this dissertation. The second desirable feature of the current data set is the location under study. Prior fear of crime research has typically been conducted using data collected from large urban centers around the world. Scholars argue that it is necessary to gather data from smaller places to determine if the results are generalizable (e.g., Warr, 2000). There has been no study, that I am aware of, examining fear of crime in Hillsborough County. This dissertation will test these relationships outside of the traditional established larger urban centers, to determine the generalizability of the relationships identified by prior research. The third desirable feature of the current data set is the sampling method. Most prior fear of crime research has examined data collected with convenience samples or using other nonprobability-based sampling methods which could bias the results. The community survey data is collected using a probability sampling method using the most effective method for getting a representative sample (Fowler, 2009).

While the data have several appealing features, there are four limitations that should be noted. First, this data was not specifically collected to address the research questions at the core of this dissertation. However, there is a great deal of commonality between the measures used in the community survey and those used in previous fear of crime research. Second, the response rate to the survey request by HCSO was 32.67%, which is less than the 50% criterion that is generally deemed as an acceptable response rate (Fowler, 2009). However, prior fear of crime research using data from law enforcement agencies has achieved a similar response rate (e.g., Franklin et al., 2008; Gibson et al., 2002). Third, research suggests that data collected by law enforcement agencies can suffer from a special form of social desirability bias (Travis et al.,
However, this limitation is likely not of great concern to this dissertation because the data were collected via mailed questionnaires and the variables of interest are not likely affected in the same manner as would citizens’ ratings of the police department. Finally, the community survey data uses the same methodology to collect data on various constructs of interest. This limitation is especially concerning with fear of crime research. Prior research has documented that using the same source of data can upwardly bias estimates of the relationships between crime, disorder, and fear of crime (Perkins & Taylor, 1996). However other research suggests that using data collected from various sources can be just as, if not more, problematic (Skogan, 2012). Therefore, while this data is not perfect, the strengths of the data far outweigh the limitations of the data.

The 2000 United States Census Data

Data from the 2000 United States Census is used to account for contextual effects that may influence a person's level of fear. The census data was used for each of the 30 census designated places within unincorporated Hillsborough County. Table 4 below reports the average demographic characteristics. The data show several important things that should be considered. First, there is disparity in the population sizes of the neighborhoods, which ranges widely from 2,000 (the size of a small subdivision; e.g., Fish Hawk) to 77,900 the size of a small/medium sized city (e.g. Brandon). Second, the indicators of socioeconomic status (e.g., median income, percent poverty, etc.) vary from quite impoverished neighborhoods (e.g., those with median household incomes less than $30,000 per year) to those that are much more affluent (e.g., those with median incomes more than $75,000 per year). Finally, note that there seems to be three types of neighborhoods: 1) those comprised of majority racial/ethnic minorities (i.e., greater than
50% racial/ethnic minorities), 2) those comprised of majority non-Hispanic whites (i.e., less than 10% racial/ethnic minorities), and 3) those that are more racially/ethnically heterogeneous (i.e., those with approximately 40% minorities). Again, these results suggest that it is necessary to consider the effects of social context when examining fear of crime.

Measures

**Dependent Variable**

The measure of fear of crime comes from a single item from the community survey. The item asks participants: “How fearful are you about crime in your NEIGHBORHOOD?” The item is measured on a four-point Likert type scale with options for: 1) not at all fearful, 2) not very fearful, 3) somewhat fearful, and 4) very fearful. The item also allows participants the option to mark “don't know”; those participants marking this option are filtered out in the analyses. The distribution of the dependent variable is shown below in Table 4. The distribution of the dependent variable is largely consistent with prior research, which finds that only a small number of people express high levels of fear—only 3.3% of respondents in this data set. This item is similar enough to attitudinal measures used in prior research that comparisons could be made between the results from this study and those from prior research. The drawback to using this measure is that it relies on a single item indicator, which makes assessing reliability and validity of the measure difficult (Furr & Bacharach, 2008). When feasible, the use of single item indicators should be avoided.
Table 1: Selected Demographic Characteristics from Full Sample of Community Survey Respondents (N=1898)

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>56.0</td>
</tr>
<tr>
<td>Male</td>
<td>43.0</td>
</tr>
<tr>
<td>Missing</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>White (Non-Hispanic)</td>
<td>79.2</td>
</tr>
<tr>
<td>Black</td>
<td>05.1</td>
</tr>
<tr>
<td>Native American</td>
<td>0.2</td>
</tr>
<tr>
<td>Other</td>
<td>0.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11.1</td>
</tr>
<tr>
<td>Missing</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>67.8</td>
</tr>
<tr>
<td>Widowed</td>
<td>8.7</td>
</tr>
<tr>
<td>Divorced</td>
<td>12.9</td>
</tr>
<tr>
<td>Separated</td>
<td>2.2</td>
</tr>
<tr>
<td>Never Married</td>
<td>7.4</td>
</tr>
<tr>
<td>Missing</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Never Attended</td>
<td>0.1</td>
</tr>
<tr>
<td>Elementary School</td>
<td>2.0</td>
</tr>
<tr>
<td>High School</td>
<td>36.6</td>
</tr>
<tr>
<td>2-Year College</td>
<td>21.3</td>
</tr>
<tr>
<td>4-Year College</td>
<td>25.9</td>
</tr>
<tr>
<td>Master's</td>
<td>10.3</td>
</tr>
<tr>
<td>Doctoral</td>
<td>2.3</td>
</tr>
<tr>
<td>Missing</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Employed Last Week</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>34.9</td>
</tr>
<tr>
<td>Yes</td>
<td>63.7</td>
</tr>
<tr>
<td>Missing</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td></td>
</tr>
<tr>
<td>Less than $10,000</td>
<td>3.5</td>
</tr>
<tr>
<td>$10,000 — $14,999</td>
<td>5.0</td>
</tr>
<tr>
<td>$15,000 — $24,999</td>
<td>7.7</td>
</tr>
<tr>
<td>$25,000 — $34,999</td>
<td>9.9</td>
</tr>
<tr>
<td>$35,000 — $49,999</td>
<td>13.6</td>
</tr>
<tr>
<td>$50,000 — $74,999</td>
<td>18.7</td>
</tr>
<tr>
<td>$75,000 — $99,999</td>
<td>13.2</td>
</tr>
<tr>
<td>$100,000 — $149,999</td>
<td>13.2</td>
</tr>
<tr>
<td>$150,000 — $199,999</td>
<td>3.2</td>
</tr>
<tr>
<td>$200,000 or more</td>
<td>2.8</td>
</tr>
<tr>
<td>Missing</td>
<td>9.2</td>
</tr>
<tr>
<td><strong>Number of Times Moved in Past 5 Years</strong></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>63.4</td>
</tr>
<tr>
<td>1</td>
<td>20.6</td>
</tr>
<tr>
<td>2</td>
<td>9.2</td>
</tr>
<tr>
<td>3</td>
<td>4.2</td>
</tr>
<tr>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>5 or more times</td>
<td>0.9</td>
</tr>
<tr>
<td>Missing</td>
<td>1.4</td>
</tr>
</tbody>
</table>
Table 2: Selected Aggregated Demographics from Community Survey by Census Designated Place (N=30)

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Min.—Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Respondents</td>
<td>63.27</td>
<td>16.35</td>
<td>25.00—95.00</td>
</tr>
<tr>
<td>% Female Respondents</td>
<td>57.00</td>
<td>8.39</td>
<td>36.70—77.30</td>
</tr>
<tr>
<td>% African-American Respondents</td>
<td>6.08</td>
<td>13.12</td>
<td>0.00—70.50</td>
</tr>
<tr>
<td>% Hispanic Respondents</td>
<td>11.40</td>
<td>6.58</td>
<td>0.00—31.30</td>
</tr>
<tr>
<td>% Married Respondents</td>
<td>66.55</td>
<td>11.98</td>
<td>31.80—87.00</td>
</tr>
<tr>
<td>% Employed Respondents</td>
<td>64.25</td>
<td>11.90</td>
<td>14.40—79.10</td>
</tr>
<tr>
<td>Age</td>
<td>52.18</td>
<td>5.17</td>
<td>43.65—74.96</td>
</tr>
<tr>
<td>Length of Residence</td>
<td>11.48</td>
<td>3.76</td>
<td>5.72—21.09</td>
</tr>
<tr>
<td><strong>Modal Category</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>% of Neighborhoods</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>High School</td>
<td>63.3</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>$50 — 74.99K</td>
<td>36.7</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Selected Demographics from the 2000 Census for each Census Designated Place (N=30)

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Min—Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population (in 1000s)</td>
<td>17.09</td>
<td>18.27</td>
<td>2.00—77.90</td>
</tr>
<tr>
<td>% Female</td>
<td>50.78</td>
<td>2.01</td>
<td>46.20—57.40</td>
</tr>
<tr>
<td>% of Population Age 15-24</td>
<td>12.32</td>
<td>10.50</td>
<td>0.20—25.10</td>
</tr>
<tr>
<td>% African-American</td>
<td>11.02</td>
<td>17.72</td>
<td>0.20—91.70</td>
</tr>
<tr>
<td>% Asian-American/Pacific Islander</td>
<td>2.60</td>
<td>4.10</td>
<td>0.40—7.10</td>
</tr>
<tr>
<td>% Hispanic</td>
<td>17.18</td>
<td>15.73</td>
<td>1.20—72.90</td>
</tr>
<tr>
<td>% Non-Hispanic White</td>
<td>68.91</td>
<td>21.61</td>
<td>5.90—97.90</td>
</tr>
<tr>
<td>% Female Headed Households with Children</td>
<td>7.15</td>
<td>3.42</td>
<td>0.00—14.00</td>
</tr>
<tr>
<td>% Renters</td>
<td>26.30</td>
<td>17.20</td>
<td>5.40—88.00</td>
</tr>
<tr>
<td>% Living in Different House than 5 Years Ago</td>
<td>53.25</td>
<td>10.83</td>
<td>28.60—80.70</td>
</tr>
<tr>
<td>% Foreign Born</td>
<td>9.81</td>
<td>6.24</td>
<td>2.20—29.50</td>
</tr>
<tr>
<td>% With at Least a High School Education</td>
<td>27.88</td>
<td>7.55</td>
<td>13.80—41.80</td>
</tr>
<tr>
<td>% Unemployed</td>
<td>3.18</td>
<td>2.06</td>
<td>0.60—10.50</td>
</tr>
<tr>
<td>Median Income (in $1000s)</td>
<td>47.00</td>
<td>15.21</td>
<td>22.10—80.70</td>
</tr>
<tr>
<td>% Receiving Public Assistance</td>
<td>2.78</td>
<td>2.41</td>
<td>0.00—9.20</td>
</tr>
<tr>
<td>% Below Poverty Line</td>
<td>10.48</td>
<td>2.40</td>
<td>1.70—31.70</td>
</tr>
</tbody>
</table>
Table 4: Distribution of the Dependent Variable

<table>
<thead>
<tr>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all fearful</td>
</tr>
<tr>
<td>Not very fearful</td>
</tr>
<tr>
<td>Somewhat fearful</td>
</tr>
<tr>
<td>Very fearful</td>
</tr>
</tbody>
</table>

The primary benefit of using attitudinal measure of fear is that the results from this dissertation could be easily compared to the bulk of the literature on which it is based. Changing the measure of fear will weaken the ability of this study to address the potential reasons for inconsistent findings in prior fear of crime research. For this reason, many scholars have acknowledged the weaknesses of attitudinal measures and still decided to use attitudinal measures of fear (Gibson et al., 2002; McGarrell et al., 1997). Still other scholars have used substantively similar attitudinal measures that attempt to correct the deficiencies noted below.

The primary drawback to using attitudinal measures of fear is the poor measurement of the attitudinal construct, which is thought to be responsible for the inconsistent results noted in the fear crime literature (Ferraro, 1995; Warr, 2000). The traditional attitudinal method for measuring fear of crime, used in most research, comes from the National Crime Victimization Survey (Warr, 2000). The measure asks participants to indicate, on a Likert type scale, how safe they felt being outside and alone in their neighborhood at various times of day. Scholars argue this is a multidimensional construct measuring both a risk of victimization dimension and an emotion-based fear dimension (Ferraro & LaGrange, 1987; LaGrange et al., 1992; Warr, 1984, 2000). The risk of victimization dimension reflects people’s estimates of the likelihood that they will be victimized, whereas emotion-based measurements assess how afraid people are of being victimized (Ferraro & LaGrange, 1987). Combining these two dimensions is logical as it assumes actual or perceived risk of victimization directly influences a person's level of fear,
however this is not supported by the empirical research. Prior research suggests those at the greatest risk of victimization often expressed the lowest levels of fear (Hale, 1996).

**Independent Variables**

Two types of independent variables were constructed; those relating to theoretical explanations of fear of crime and those related to context. The theoretically specified fear of crime variables are consistent with prior research examining fear of crime, and were constructed using data from the community survey. The social integration measure created is designed to measure and control for individuals’ levels of integration and participation in community and other social groups within their neighborhoods. The disorder measure created is designed to measure and control for individuals’ perceptions of certain disorderly conditions within their neighborhood. The vulnerabilities measures created are designed to measure and control for factors, identified by prior research, that are associated with feelings of vulnerability.

Consistent with prior research, the effects of social context will be controlled using concentrated disadvantage, racial/ethnic heterogeneity, and residential instability. Each of these variables was created using data from the 2000 census for each of the 30 census designated places within unincorporated Hillsborough County.

**Social Integration.** The measure of social integration for the current study consists of eight items from various questions on the community survey. All of the items were dichotomously coded such that all affirmative answers were coded as 1 and all other answers (including no, don’t know, and missing) were coded as 0. Two items were used to measure participation in community groups: 1) is there an organized neighborhood watch or citizens
protection group for your area? 9; 2) do you or does anyone in your household take part (in the neighborhood watch or citizens protection group)? Two items were used to measure information sharing about important events in the neighborhood: 1) you or someone you know was victimized; 2) you learned about crime through conversations with neighbors, neighborhood associations/civic organizations’ newsletters, and/or community meetings. Two items were used to measure actions taken by residents to integrate themselves into the community: 1) you and your neighbors have agreed to watch out for each other’s safety; and 2) you've made an effort to get to know the police in your neighborhood. Lastly, two items were used to measure recent participation in community groups: 1) in the past 12 months, have you heard about any community meetings concerning crime taking place in your neighborhood?; and 2) in the past 12 months, have you attended any of these community meetings? The measure of social integration will be constructed using a process described in the analytic plan section below. The strength of the social integration measure is the theoretical consistency with Durkheim’s (1933, 1938) concept of social integration. Social integration is more than just the length of residence and number of friends within a neighborhood, as operationalized in prior research (see Gibson et al., 2002). The social integration measure is constructed as a latent factor—described in detail below—but on average, residents engaged in fewer than two of the social integration behaviors ($M = 1.66; SD = 1.46; Range = 0 – 7$).

**Disorder.** The disorder measure for the current study is comprised of respondents’ reports of fourteen conditions or activities that exist in the participant’s neighborhood. Again, these items come from the community survey. Participants provide dichotomous responses (yes or no/don’t know) about the existence of the following conditions or activities in their neighborhoods.

---

9 Information in the Final Report presented to the Hillsborough County Sheriff’s Office, indicates that each of the 30 neighborhoods had an established community group that worked with the Sheriff’s Office in the year prior to the survey.
neighborhood: 1) abandoned cars and/or buildings, 2) rundown/neglected buildings, 3) poor lighting, 4) overgrown shrubs/trees, 5) trash, 6) empty lots, 7) illegal public drinking or public drug use, 8) public drug sales, 9) vandalism or graffiti, 10) prostitution, 11) panhandling/begging, 12) loitering/“hanging out”, 13) truancy/youth skipping school, and 14) transients/homeless sleeping on benches or streets. The disorder measure was constructed in a process described in the analytic plan section, but on average residents noted fewer than two signs of disorder in their neighborhood ($M = 1.69; SD = 2.48; \text{Range} = 0 – 14$).

The primary strength of the disorder measure is its theoretical and empirical consistency with prior measures of disorder. The measure of disorder is based largely on the conditions described by Wilson and Kelling (1982) in their *Broken Windows* piece and is consistent with measures used in prior research (Gibson et al., 2002; McGarrell et al., 1997; Skogan, 1990). The disorder measure has one drawback. Unlike in some prior research, no distinction is made between physical and social disorder. However, theoretically there is no reason to suspect that physical disorder and social disorder will differentially affect the levels of fear.

**Vulnerabilities.** To adequately account for the effect of vulnerabilities, five measures of vulnerability are included. Gender and age are included as measures of a person's physical vulnerability to victimization. Gender is coded 1 for females and 0 for males so that female gender represents a physical vulnerability, and thus should exhibit higher levels of fear. The age variable is a continuous measure that is based on the participant self-report of their age. Race/ethnicity, income, and education are included as measures of a person's social vulnerability to victimization. Racial/Ethnic minorities (e.g., African-Americans, Hispanics, Asian/Pacific Islanders, and Native Americans) were dummy-coded with a 1; and non-Hispanic Whites served as the reference group and were coded 0. The income measure is an ordinal scaled self-report of
the participant’s household income with potential response options of: less than $10,000; $10,000—$14,999; $15,000—$24,999; $25,000—$34,999; $35,000—$49,999; $50,000—$74,999; $75,000—$99,999; $100,000—$149,999; $150,000—$199,999; and $200,000 or more. The ordinal measure is appropriate because prior research suggests social vulnerability decreases as income increases, rather than one income group being more vulnerable than another. The education measure is a dummy-coded variable with those reporting a BA/BS degree or more receiving a 1, and those with less education receiving a 0.

**Social Context.** Prior research suggests that the aspect of social context most important to the study of fear of crime is the neighborhood’s level of social disorganization (Franklin et al., 2008). To that end, the three measures used in this study are: 1) concentrated disadvantage, 2) racial/ethnic heterogeneity, and 3) residential instability.

*Neighborhood concentrated disadvantage.* Neighborhoods with high levels of concentrated disadvantage are those characterized by a lack of social and economic resources (Ross & Mirowski, 2000). The measures of concentrated disadvantage used in this study comes from Peterson and Krivo’s (2005) measure of disadvantage; measuring poverty, income, family disruption, and joblessness/unemployment. Using data from the 2000 Census, for each of the 30 census-designated places within Hillsborough County, the measure will consist of: 1) the percentage of neighborhood residents under the poverty line, 2) the percentage of neighborhood residents receiving public assistance, 3) percentage of female-headed households with children, and 4) the percentage of neighborhood residents who are unemployed. Each of these variables is inserted independently, to allow for the potential of differential effects. The strength of this measure is derived from its theoretical and empirical consistency with prior research.
Neighborhood racial/ethnic heterogeneity. The measure of racial/ethnic heterogeneity is the Herfindahl Index, a measure originally used by Gibbs and Martin (1962) and has since used by other criminological researchers as well (e.g., Hipp, Tita, & Boggess, 2009). The measure was calculated with data from the 2000 census for each of the 30 census designated places within unincorporated Hillsborough County. The Herfindahl Index is calculated as follows:

\[ H = 1 - \sum_{j=1}^{J} G_j^2 \]

where \( G \) represents ethnic group \( j \)'s proportion of the population out of \( J \) ethnic groups. The subtraction from 1 makes this a measure of heterogeneity; whereby larger values of \( H \) indicates a greater degree of racial heterogeneity within the tract. The primary strength of the measure is its ability to capture theoretically relevant concepts without ascribing value to any one racial/ethnic group. Recall that research suggests fear is not the product of a particular racial/ethnic group, but rather not knowing what to expect from members of other racial/ethnic groups (Merry, 1981).

Neighborhood residential instability. Scholars have suggested that residential instability is a key barrier to forming strong social ties, and thus residential instability is the largest impediment to strong informal social control within neighborhoods (Kasarda & Janowitz, 1974; Sampson & Groves, 1989). The measure used here is consistent with the prior work of Samson and colleagues (1997), and is created using data from the 2000 Census data. The measure of residential instability consists of: 1) the percentage of residents not residing in the same house as five years earlier, and 2) the percentage of residents who are renting their residence. Each of these variables is inserted independently, to allow for the potential of differential effects between variables. The strength of these measures is derived from the theoretical and empirical consistency with prior research.
Control Variables.

Three additional control variables are included in this dissertation to minimize potential confounding effects with other variables. Two of the control variables are created using data exclusively from the community survey, and are designed to clarify the effects of the residential instability measure. The first control measure will be the self-reported number of months participants have lived at the address where the community survey was mailed, an individual-level residential stability measure. The second control measure will be the self-reported number of times that participants have moved in the five years prior to completing the community survey, which is another individual measure of residential stability. Inclusion of both measures is logical and necessary based on research that suggests the importance of residential stability in establishing residential ties. The measures will allow for estimates of the effect of residential instability at both the individual and neighborhood levels. This is necessary because a participant could have moved into a stable neighborhood, and yet their own residential instability could affect their level of fear. The third control measure will be created using data from both the community survey and the 2000 Census data. This measure assess whether the participant is a member of the neighborhoods racial/ethnic majority, if there was one, by comparing the participant’s self-reported race/ethnicity to the data from the 2000 Census, an individual level of ethic/racial heterogeneity. If the participant’s race/ethnicity matches the majority from the census data the variable was given a value of 1, and if not a 0. The measure will allow for examination of the effects of race/ethnicity at both the individual and neighborhood levels. Participants living in neighborhoods where they are among the racial/ethnic majority could be insulated from the increased levels of fear caused by racial/ethnic heterogeneity proposed by other scholars (Merry, 1981).
Analytic Strategy

The analytic strategy to test the hypotheses laid out at the end of Chapter 2, will consist of two phases. The first part of the analytic strategy will focus on the development of sound measures of the constructs of interest. The second part of the analytic plan will proceed in three stages. Each of the three stages is specifically designed to address one of the research questions, and associated hypotheses.

Measure Development Procedure

In order to adequately test the hypotheses of this dissertation, it is necessary to ensure that the measures are both valid and reliable depictions of the underlying constructs of interest. Traditionally in the social sciences, this is accomplished by using methodologically robust scale development procedures (DeVellis, 2012). Typical scale development procedures are based on classical test theory, which assumes a linear relationship between the manifest (i.e., observed) variable and the latent construct (de Ayala, 2013). The linear assumption poses specific problems for some of the measures (e.g., disorder and social integration). There is no linearity for data measured dichotomously, which makes them nearly impossible to develop using traditional classical test theory methods.

There are two potential solutions to correct for the non-linear nature of the data: 1) using a weighted least squares estimator (WLS), or 2) robust weighted least squares (WLSMV) estimator10 in confirmatory factor analysis (CFA). The WLS solution is similar to the classical test theory approach of confirmatory factor analysis, in that it uses a person's manifest score on a number of related items to produce a true score on a latent variable. The WLS solution corrects

10 WLSMV stands for Weighted least squares Muthen Version, which is fundamentally different than traditional WLS methods and was designed by Bengt Muthen and currently can only be estimated using the MPlus software.
for violations of the linearity by calculating a weights matrix (Brown, 2006). Evidence suggests the WLS solution may be undesirable as it requires a large sample size, affects model fit statistics, and can negatively bias standard error estimates in more complex models (Brown, Muthén & Kaplan, 1992). To compensate for these problems it is recommended that researchers use the WSLMV when possible (Brown, 2006). The robust weighted least squares version (WLSMV) is also similar to traditional classical test theory methods, except that it is capable of compensating for the lack of linearity in the data. The biggest difference between the WLSMV and WLS methods is how the weights matrix, which is used to compensate for violations of the linearity assumption, is calculated. The WLSMV uses a diagonal weights matrix, as compared to a full weights matrix, robust standard errors and uses specific procedures to correct some of the fit indices used to assess model fit (Muthén and Muthén, 2010).

One of the specific strengths of using classical test theory techniques (e.g., CFA) is that it is possible to evaluate the adequacy of model fit using multiple model fit indices. Hu and Bentler (1999) specify that the comparative fit index (CFI) value should be greater than .95, standardized root mean square residual (SRMSR) should be below .08, and the root mean square error of approximation (RMSEA) should be below .06. These criterion for the fit indices are helpful because traditional model fit indices (i.e., \( \chi^2 \)) can be problematic with social science data that tends to be skewed. However, when using the WLSMV estimator it is not recommended to use the SRMSR, because research suggests that it does not behave predictable when using binary indicators (Yu, 2002). Instead, the Tucker Lewis Index (TLI) will be used in conjunction with the other indicators suggested by Hu and Bentler (1999). Using the TLI, acceptable model fit is determined if the value of the statistic is great than .95 (Bollen & Long, 1993).

---

11 WLS uses all of the same information from a maximum likelihood estimate (e.g., variance/covariance matrix) and adds a weight matrix depicting the variances/covariances of the initial variant/covariance matrix while accounting for kurtosis (Brown, 2006).
estimated using *Mplus* version 6.2 and the results show good model fit ($\chi^2 = 15.68$, df = 8, $p < .001$; SRMSR = .12; RMSEA = .07; CFI = .935; TLI = .959) and the latent variables will be used in subsequent analyses.

The full factor loadings from the CFA are presented in Table 5 below. Looking at the strength of the factor loading scores, all items acceptably load onto the appropriate factor. While some factors are stronger indicators of social integration and disorder—respectively—than others, all factors surpass the .30 criterion generally accepted by researchers (Brown, 2006). The validity of the measures is bolstered by the Cronbach’s alpha values associated with each measure. The alpha value is greater than .60 for each measure, which surpasses the criterion that is generally deemed acceptable by researchers (Schutt, 2007).

**Analytic Procedure.**

In order to address the specific hypotheses associated with the research questions driving this dissertation, it will be necessary to estimate three statistical models\(^{12}\). The analytic procedure used here is a structural equation modeling (SEM) approach for each of the

---

\(^{12}\) Recall that the dependent variable is an ordinal variable that represents residents’ levels of fear. As such, all analyses are conducted using an ordered logistic regression. One of the primary assumptions of this type of statistical model is called the proportional odds assumption. This assumption suggests that the slope for each variable is consistent across each level of the dependent variable. This assumption cannot be easily checked in MPlus. To bolster confidence in the findings from the model, each model was constructed as a linear model where the proportional odds assumption could be assessed. The results from the Brant test ($\chi^2 = 14.63$; df = 9; $p > .05$) suggest that the proportional odds assumption was met. While this does not guarantee that the proportional odds assumption holds in the more complex analyses, it provides support that the assumption might hold in these models. Unfortunately, per the MPlus user’s manual, there is no other way of determining whether this assumption holds with the statistical software currently available.
Table 5: Factor Loading Scores from Confirmatory Factor Analysis of Individual-Level Independent Variables (N=1898)

<table>
<thead>
<tr>
<th>Item</th>
<th>Social Integration</th>
<th>Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood watch group in your neighborhood</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Do you or someone else participate</td>
<td>0.53</td>
<td></td>
</tr>
<tr>
<td>You/Someone you knew was victim of crime</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>Learned of crime through conversations with others</td>
<td>0.54</td>
<td></td>
</tr>
<tr>
<td>Agreed to watch out for neighbor’s safety</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td>Tried to get to know the police</td>
<td>0.41</td>
<td></td>
</tr>
<tr>
<td>Heard of community meetings</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td>Participated in community meetings</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>Presence of abandoned cars</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Presence of abandoned buildings</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Presence of poor lighting</td>
<td>0.83</td>
<td></td>
</tr>
<tr>
<td>Presence of overgrown shrubs</td>
<td>0.91</td>
<td></td>
</tr>
<tr>
<td>Presence of trash</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>Presence of vacant lots</td>
<td>0.93</td>
<td></td>
</tr>
<tr>
<td>People drinking in public</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Sales of illegal drugs</td>
<td>0.94</td>
<td></td>
</tr>
<tr>
<td>Vandals</td>
<td>0.98</td>
<td></td>
</tr>
<tr>
<td>Prostitutes</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>Begging</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td>People loitering</td>
<td>0.92</td>
<td></td>
</tr>
<tr>
<td>Truant youths</td>
<td>0.84</td>
<td></td>
</tr>
<tr>
<td>Presence of Transients</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>Covariance between social integration and disorder</td>
<td>-0.12</td>
<td></td>
</tr>
</tbody>
</table>

Cronbach’s α: 0.697, 0.816

three statistical models. This analytic approach was selected for five reasons. First, the SEM approach permits the analysis of complex relationships between both exogenous and endogenous variables. This property is important for this dissertation due to prior research which suggests a strong relationship between perceptions of disorder and social integration (Sampson & Raudenbush, 1999). The covariation of these constructs can be addressed by modeling a covariance term between disorder and social integration. Second, SEM is capable of analyzing the effect of latent variables. Therefore, SEM will allow for the analysis of the social contextual variables as latent constructs, which accounts for measurement error. Third, SEM is capable of
examining nested data (Kline, 2005; Muthen & Muthen, 2010). It is methodologically necessary to control for the nested structure of the data when looking at the effects of social context on individual behavior. Fourth, and finally, using the same analytic technique at all stages of analyses will permit model comparison. In other words, using the same analytic technique at all stages makes it possible to determine whether more complex models in fact fit the data better than more parsimonious models. All models will be estimated using Mplus version 6.2.

First analytic stage. The first stage of the analyses addresses the first research question:

1. Is the social integration model of explaining fear of crime strengthened with the addition of factors from the disorder and vulnerabilities models?

This first stage of the analyses is designed to specifically test the following hypotheses:

- The social integration model will be strengthened by integrating it with the disorder model.
- The social integration model will be strengthened by including concepts from the vulnerabilities model.
- The social integration model will be stronger still than either prior model by including concepts from both disorder and vulnerabilities.

The path diagram of the model is presented in Figure 1 with all measures included. If the results from this model support the hypotheses, Paths A, B, C, and D will be positive statistically significant coefficients. Additionally, in line with prior research (e.g., Sampson & Raudenbush, 1999) Figure 1 depicts a covariation term between perceptions of disorder and social integration. While no specific hypotheses are tested here, this coefficient should also be positive and statistically significant. Other covariance terms are not included here because they are not theoretically specified or logically consistent.

Second analytic stage. The second stage of the analyses is designed to address both parts of the second research question:
2. Is there a reciprocal relationship between the degree of social integration and a person’s fear of crime?

2a. What is the nature of the reciprocal relationship (i.e., positive or negative) between social integration and fear of crime?

The second stage of the analyses is specifically designed to test the following hypotheses:

- There will be a significant reciprocal relationship between an individual’s level of fear and his/her level of social integration.
- Higher levels of individual social integration will predict lower levels of fear, but the effect size will be decreased after controlling for the reciprocal relationship.
- Higher levels of fear will predict lower levels of social integration after controlling for the reciprocal relationship.

The path diagram for the model is presented in Figure 2. Hypothesis 4 will be supported if the reciprocal relationship between fear of crime and social integration, depicted by Path A, is significant and if the model fits the data better than the first model. The assessment of superior model fit will be determined using the likelihood ratio test; calculated by subtracting the chi-square value from the first model from the chi-square value of the second model. This value should exceed 3.84 to show significantly improved model fit. Hypothesis 5 will be supported if the coefficient depicted by the Path B is positive and significant, but smaller in magnitude than the value from the first model. Hypothesis 6 will be supported if the coefficient depicted by Path B is negative and significant.

**Third analytic stage.** The third stage of the analyses is designed to address the following research question:

2. How are the individual-level relationships conditioned by social context?

The third stage of the analyses is designed to test the following hypotheses:
After considering social context, the only factors from the vulnerabilities model that will remain important are age and gender.

After considering social context, the effect of disorder on fear of crime will be reduced.

After considering social context, the reciprocal effect will remain, although the size of the effect between social integration and fear will be reduced.
The path model for the analysis is depicted in Figure 3. To account for the nested effects of the data (i.e., participants within neighborhoods), this stage of the analyses will use a multilevel structural equation model (ML-SEM) for the analysis. This method is specifically designed to account for the nested nature of the data while simultaneously accounting for the latent variables and complex relationships necessary to address the third research question. Failing to account for the nested nature of the data is problematic, as it can affect the values of the standard errors and thus increase the probability of making a Type I error. The use of ML-SEM has been shown to be superior to conventional multilevel modeling techniques, because it accounts for measurement error (Muthén & Muthén, 2010).

The third model should fit the data better than either of the two previous models. The assessment of superior model fit will be determined using the likelihood ratio test; calculated by subtracting the chi-square value from the first and second models from the chi-square value of the third model. This value should exceed 27.59 for comparisons to the first model, and 26.30 for comparisons to the second model, to show significantly improved model fit. In order to find support for Hypotheses 7 and 8, Paths A, B, and C, will need to be positive and statistically significant coefficients. To find support for Hypothesis 9, Path D from social integration will need to depict the coefficient that is positive and statistically significant, but smaller in magnitude than in model two. To find support for Hypothesis 9, Path E depicting the reciprocal relationship will need to represent a coefficient that is negative and statistically significant, but larger in magnitude than model two.
**Figure 2:** Path Diagram of Second Stage in the Analytic Procedure
Figure 3: Path Diagram of Third Stage in the Analytic Procedure

% of Residents Under Poverty Line

% of Residents Unemployed

% of Residents Receiving Public Assistance

% of Residents Living in N.H. < 5 Years

% of Female-Headed Households

% of Renters

Racial/Ethnic Heterogeneity

Between

Social Integration

Perceptions of Disorder

Female

Age

Other Variables*

Within

Fear of Crime

* Other control variables include: Racial/Ethnic Minority, Income, BA/BS or Higher, Member of Neighborhood’s Majority Racial/Ethnic Group, and Length of Residence.

These variables omitted to make the figure easier to read.
Chapter 4: Results

This chapter presents the findings from the statistical analyses conducted to answer the research questions driving this dissertation. First, bivariate correlations are presented to show the extent of the relationships between the variables specified in this dissertation. Second, a series of structural equation models are presented to examine the complex relationships between the independent variables and fear of crime. Specifically, these statistical models are generated for the purpose of assessing the empirical validity of the theoretically informed more holistic fear of crime model presented earlier in this dissertation.

Correlations

Bivariate correlations are calculated for two reasons: 1) to examine the relationships between the independent variables; and 2) to look for potential multicollinearity problems in subsequent statistical models. Standard statistical packages do not assess multicollinearity when estimating structural equation models, therefore bivariate correlations are calculated to diagnose potential multicollinearity concerns. The standard recommendation is that researchers look for values of bivariate correlations, at the individual-level, that are abnormally large (e.g., $r \geq .60$; Allison, 1999). Two correlation tables are presented, one for the bivariate relationships

---

13 A few of the values from the correlation tables suggest there may be some multicollinearity problems with some variables. Although following Allison’s (1999) recommendations, these problems can be largely ignored as these large values are between control variables. These control variables are inserted into the statistical models, discussed in detail below, independently to follow studies examining the effects of social context and because of the limited number of level-2 clusters (n=30).
between all individual level variables in the study (Table 6) and one between the social context variables and the individual level variables that are hypothesized to be influenced by neighborhood conditions (Table 7).  

**Individual-Level Correlates of Fear of Crime**

At the bivariate level a number of variables are associated with levels of fear. Elements from all three explanatory models are associated with higher levels of fear among respondents. Levels of social integration ($r = .105$), and perceptions of disorder ($r = .368$) are both significantly and positively associated with elevated levels of fear. This means that individuals who rate high on fear also tend to rate highly on level of social integration and perceived disorder. Elements from the vulnerabilities models were rather weak and performed inconsistently, with some (e.g., gender [$r = .105$]) showing the expected relationship and others (e.g., age [$r = -.086$]) showing the inverse relationship. Furthermore, other control variables exhibited a relationship with fear of crime; again some (e.g., being a member of the neighborhood’s majority racial/ethnic group [$r = -.107$]) showed the expected relationship and others (e.g., length of time at current address [$r = .080$]) showing a relatively weak although unexpected relationship.

In addition to the bivariate relationships between these individual level factors and fear of crime, the table is also useful in looking at potential multicollinearity problems. Looking at Tables 6 and 7, only one value surpasses the $r = .60$ threshold identified by Allison (2012). The

---

14 Pearson’s correlation method is used for correlations with two continuous variables, Spearman’s rank order correlation is used when at least one of the variables is ordinal, the Phi coefficient is used to assess the correlation between two dichotomous variables (denoted with $\phi$), and the point biserial correlation is used to assess the relationship between a dichotomous variable and a continuous variable.
two variables with the potentially concerning bivariate correlation is being a member of the neighborhood’s majority racial/ethnic group and being a racial/ethnic minority ($\phi = -.610$).

**Social Contextual Correlates of Fear of Crime**

The bivariate correlations between the neighborhood conditions used to denote social context in this dissertation and the individual level factors thought to be influenced by social context are shown in Table 7. With the exception of the percentage of residents who have moved into a neighborhood in the past five years, all of the social context variables are positively and significantly related to fear of crime. The same trend is seen with disorder, although the magnitudes of the correlation coefficients are generally larger for disorder than for fear of crime. There is less evidence that social integration is significantly correlated to neighborhood conditions. Importantly, the only social context variable that exhibits a significant effect on fear of crime, social integration, and perceptions of disorder is the Herfindahl Index, which is a measure of racial/ethnic heterogeneity (fear of crime $r = .185$; social integration $r = -.083$; and perceptions of disorder $r = .210$). That is, all correlation coefficients for social integration are either non-significant or are negative; whereas all coefficients for fear of crime and disorder are positive and significant.

Additionally, Table 7 also suggests that there may be multicollinearity between several of the neighborhood level variables. Recall that multicollinearity generally becomes a concern when the value of correlation coefficient surpasses .60. However, research generally suggests that higher levels of aggregation (e.g., the neighborhood level) can easily tolerate higher levels of multicollinearity (e.g., Kennedy, 2008). Therefore, while the correlation value is high by
standards in individual-level research, because this correlation is between indicators of social context at the neighborhood level, it is not as concerning.

**Predicting Fear of Crime**

This section is devoted to presenting the results from the multivariate statistical analyses. This section is divided into three sections—one for each research question and the associated hypotheses. The first section is devoted to testing the hypotheses associated with the first research question, (Is the social integration model of explaining fear of crime strengthened with the addition of factors from the disorder and vulnerabilities models?) which again are:

1. The social integration model will be strengthened by integrating it with the disorder model.
2. The social integration model will be strengthened by including concepts from the vulnerabilities model.
3. The social integration model will be stronger still than either prior model by including concepts from both disorder and vulnerabilities.

Additionally, the first section will also examine the parameter estimates associated with the strongest empirical fear of crime model. The second section will look at addressing the hypotheses associated with the second set of research questions (Is there a reciprocal relationship between fear of crime and social integration? What is the nature of the reciprocal relationship [i.e., positive or negative]) between a person’s fear of crime and their level of social integration, which again are:

4. There will be a significant reciprocal relationship between an individual’s level of fear and his/her level of social integration.
5. Higher levels of social integration will predict lower levels of fear, but the size of the effect will be decreased after controlling for the reciprocal relationship.

6. Higher levels of fear will predict lower levels of social integration after controlling for the reciprocal relationship.

**Table 6: Bivariate Correlations between All Individual-Level Variables (N=1898)**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of Crime (1)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Integration (2)</td>
<td>.105</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disorder (3)</td>
<td>.368</td>
<td>.138</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (4)</td>
<td>.125</td>
<td>.041</td>
<td>.101</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (5)</td>
<td></td>
<td>.034</td>
<td>.155</td>
<td>.176</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Racial/Ethnic Minority (6)</td>
<td>.049</td>
<td>.305</td>
<td>.028</td>
<td>.000</td>
<td>.119</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor’s Degree or More (7)</td>
<td>.074</td>
<td>.110</td>
<td>.105</td>
<td>.066</td>
<td>.141</td>
<td>.017</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Income (8)</td>
<td></td>
<td>.025</td>
<td>.131</td>
<td>.033</td>
<td>.086</td>
<td>.018</td>
<td>.010</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Member of neighborhood’s majority racial/ethnic group (9)</td>
<td></td>
<td>.034</td>
<td>.119</td>
<td>.027</td>
<td>.076</td>
<td>.486</td>
<td>.426</td>
<td>.002</td>
<td>.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of times moved in past 5 years (10)</td>
<td>.013</td>
<td>.077</td>
<td>.016</td>
<td>.020</td>
<td>.373</td>
<td>.084</td>
<td>.118</td>
<td>.063</td>
<td>.058</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Length of residence at current address (11)</td>
<td>.080</td>
<td>.002</td>
<td>.083</td>
<td>.006</td>
<td>.465</td>
<td>.031</td>
<td>.229</td>
<td>.051</td>
<td>.004</td>
<td>.517</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**NOTES:** Numbers in parentheses refer to the column numbers at the top of the table. Those numbers listed in bold denote $p < .05$.

**Table 7: Bivariate Correlations between Community-Level Variables and Certain Individual-Level Variables (N=1898)**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of Crime (1)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Integration (2)</td>
<td>.105</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disorder (3)</td>
<td>.368</td>
<td>.138</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Under Poverty Line (4)</td>
<td>.218</td>
<td>.015</td>
<td>.390</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Unemployed (5)</td>
<td>.198</td>
<td>.032</td>
<td>.328</td>
<td>.844</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% On Public Assistance (6)</td>
<td>.218</td>
<td>.015</td>
<td>.394</td>
<td>.928</td>
<td>.809</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Female Headed Households (7)</td>
<td>.233</td>
<td>.019</td>
<td>.367</td>
<td>.702</td>
<td>.664</td>
<td>.679</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Renters (8)</td>
<td>.119</td>
<td>.047</td>
<td>.162</td>
<td>.578</td>
<td>.495</td>
<td>.454</td>
<td>.537</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Moved in Past 5 Years (9)</td>
<td>.035</td>
<td>.027</td>
<td>.052</td>
<td>.194</td>
<td>.242</td>
<td>.234</td>
<td>.034</td>
<td>.071</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herfindahl Index (10)</td>
<td>.185</td>
<td>.083</td>
<td>.210</td>
<td>.436</td>
<td>.470</td>
<td>.443</td>
<td>.616</td>
<td>.610</td>
<td>.134</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:** Numbers in parentheses refer to the column numbers at the top of the table. Those numbers listed in bold denote $p < .05$. 
The third section will test the hypotheses associated with the third research question (How are the individual-level relationships conditioned by social context?), which again are:

1. After considering social context, the only factors from the vulnerabilities model that will remain important are age and gender.
2. After considering social context, the effect of disorder on fear will be reduced.
3. After considering social context, the reciprocal effect will remain, although the size of the effect between social integration and fear will be reduced.

**Determining which Fear of Crime Model is Best**

Prior to looking at the direct effects on fear of crime, it is necessary to determine which model theoretical model or amalgamation of models is the most appropriate for examining fear of crime. This is accomplished by estimating a series of nested models and then using the likelihood ratio test to determine which of the theoretically specified models has the strongest empirical support to use in all subsequent models estimated in this dissertation. Four models are estimated for this purpose: 1) a model with only social integration predicting fear of crime (the “baseline” model without any additional predictor variables); 2) a model with social integration and disorder predicting fear of crime; 3) a model with social integration and concepts from the vulnerabilities model predicting fear of crime; and 4) a full model including concepts from social integration, disorder, and the vulnerabilities models predicting fear of crime. The results from these models are presented in Table 8. During this phase of the model building process, none of the parameter estimates are examined until the strongest empirical model is identified.

The explanatory fear of crime model at the center of this dissertation is the social integration model. Using the social integration model alone to predict levels of fear, produces a
model that fits the data well based on the Hu and Bentler (1999) criteria\textsuperscript{15} ($\chi^2 = 21.20; \text{df}=1; p < .001; \text{SRMSR} = 0.06; \text{RMSEA} = 0.09; \text{CFI} = 0.945$). Despite the simplistic model fitting the data well, the empirical model is significantly strengthened with the addition of disorder concepts ($\Delta \chi^2 = 265.84; \text{df}=1; p < .001$). The results of this likelihood ratio test provide support for Hypothesis 1, that the social integration model was strengthened by integrating it with the disorder model. Further, comparing the more simplistic social integration model to the model that considers the social integration and the vulnerabilities model suggests that the addition of concepts from the vulnerabilities model significantly improves model fit ($\Delta \chi^2 = 109.30; \text{df}=1; p < .001$). This provides support for Hypothesis 2, that the social integration model was strengthened by including concepts from the vulnerabilities model. The model that fits the data best is a full model that incorporates the social integration, disorder, and vulnerabilities models ($\chi^2 = 331.64; \text{df}=10; p < .001$). Based on the results from the likelihood ratio tests, and maximizing the $\Delta \chi^2$ value, this model is the strongest of all possible models that can be generated with the extant data. This provides support for Hypothesis 3, that the social integration model was stronger than either of the two prior models by including concepts from both the disorder and vulnerabilities models. This full model will be used in all subsequent analyses.

Table 8: Results from a Series Of Likelihood Ratio Tests Assessing the Empirically Strongest Predictive Fear of Crime Model.

<table>
<thead>
<tr>
<th>Model Statistics</th>
<th>Versus Social Integration Only</th>
<th>Versus Full Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\chi^2$</td>
<td>df</td>
</tr>
<tr>
<td>Full Model</td>
<td>331.64</td>
<td>10</td>
</tr>
<tr>
<td>Social Integration Only</td>
<td>21.20</td>
<td>1</td>
</tr>
<tr>
<td>Social Integration with Disorder</td>
<td>287.04</td>
<td>2</td>
</tr>
<tr>
<td>Social Integration and Vulnerabilities Only</td>
<td>130.50</td>
<td>9</td>
</tr>
</tbody>
</table>

\textsuperscript{15} Recall that Hu and Bentler (1999) suggest that a model fits the data well when the RMSEA (root mean square error of approximation) is less than 0.08; the SRMSR (standardized mean square residual) is less than 0.06; and when the CFI (comparative fit index) value exceed 0.95.
Assessing Direct Relationship to Fear of Crime

Next, the parameter estimates from the best fitting model, which again is the model that incorporates concepts from the social integration, disorder, and vulnerabilities models simultaneously are examined. This full model not only fits the data better than the other models, as discussed above, but also showed good model fit using a number of other model fit indices. Specifically, the model fits the data well according to the criteria set forth by Hu and Bentler (1999). Because the data fit the model well, it is appropriate to interpret the parameter estimates provided by the model. The parameter estimates from this baseline model are listed in Table 9.

Table 9: Individual-Level Factors Predicting Fear of Crime in Hillsborough County (N = 1898)

<table>
<thead>
<tr>
<th>Factor</th>
<th>b (s.e)</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Social Integration</td>
<td>0.04 (0.01)***</td>
<td>1.04</td>
</tr>
<tr>
<td>Perceived level of Disorder</td>
<td>0.11 (0.01)***</td>
<td>1.12</td>
</tr>
<tr>
<td>Female</td>
<td>0.14 (0.03)***</td>
<td>1.15</td>
</tr>
<tr>
<td>Age</td>
<td>-0.01 (0.00)*</td>
<td>0.99</td>
</tr>
<tr>
<td>Racial/Ethnic minority</td>
<td>-0.01 (0.05)</td>
<td>0.99</td>
</tr>
<tr>
<td>Bachelor’s Degree or Higher</td>
<td>-0.05 (0.03)</td>
<td>0.95</td>
</tr>
<tr>
<td>Income</td>
<td>-0.00 (0.00)</td>
<td>1.00</td>
</tr>
<tr>
<td>Member of neighborhood’s majority racial group</td>
<td>-0.13 (0.05)***</td>
<td>0.88</td>
</tr>
<tr>
<td>Number of times moved in past five years</td>
<td>0.02 (0.02)</td>
<td>1.02</td>
</tr>
<tr>
<td>Length of residence at current address</td>
<td>0.01 (0.002)***</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Note. $\chi^2$ (10) = 331.64, $p < .05$; RMSEA = 0.09; SRMSR = 0.06; CFI = 0.945
* $p < .05$ *** $p < .001$

The results from this baseline model show support for a multi-model explanation for fear of crime. The model yields support for the most consistent explanations of fear of crime including social integration ($b=0.04$, $p < .001$), disorder ($b=0.11$, $p < .001$), and certain vulnerabilities (e.g., female [$b=0.14$, $p < .001$] and age [$b=-0.01$, $p < .05$]). In order to ease the interpretation of the results, the log odds coefficients are converted to odds ratios by exponentiating the log odds coefficients from the model. A one unit increase in social integration
increases the likelihood of a person expressing higher levels of fear by 4% (OR = 1.04); however a one unit increase in perceived levels of disorder will increase the likelihood of a person expressing higher levels of fear by 12% (OR = 1.12). The largest change that is seen in the variables from the fear of crime models is the effect of gender, where females are 15% more likely to express higher levels of fear than males. It is important to note that while the effects of gender exhibit the highest magnitude of change for a single unit change, the effects of gender are not the most important when predicting levels of fear. This is largely driven by the fact that gender is a dichotomous variable where males receive a 0 and females a 1, meaning there is at most a one unit increase in the variable possible. The magnitude of the effects of gender can be quickly met, and even exceeded, by multiple unit increases in perceptions of disorder and social integration. With the exception of age, and largely as expected based on prior research, other variables from the vulnerabilities models are insignificant predictors of a person’s level of fear.

The control variables that are included in the model exhibited some interesting effects on reported levels of fear. Specifically, being a member of the neighborhood’s racial/ethnic majority reduced the likelihood that someone would express higher levels of fear (b= -0.13, OR = 0.88, p < .001). This translates into an 12% reduction in the likelihood that a person who is the member of the neighborhood’s racial/ethnic majority would express higher levels of fear. The other control variable that exerted a significant effect is the length of time that a person lived at their current address is positively and significantly related to levels of fear (b=0.01, OR = 1.01, p < .001). Each additional year that a person resided at their current address increased the likelihood that they would express higher levels of fear by 1%. Although the effect of the coefficient seems small, this could translate into a very large effect if the person had lived at their current address
for a considerable length of time. All other control variables exerted an insignificant effect on expressed levels of fear.

**Reciprocal Relationship between Fear of Crime and Social Integration**

Prior to examining the parameter estimates associated with the model that estimated the reciprocal effect, it is necessary to determine if the model fit the data well. Based on the Hu and Bentler (1999) criteria, the evidence suggests that the model fit the data very well ($\chi^2 (8) = 81.92, p < .05$; RMSEA = 0.07; SRMSR = 0.022; CFI = 0.971). Additionally it is necessary to determine if this model represents a significant improvement over the more parsimonious model presented earlier.\(^{16}\) Unfortunately, because of the way the models are estimated in *MPlus*, one cannot simply perform a traditional likelihood ratio test as was done previously using the reported $\chi^2$ value, although there is a solution to this problem.\(^{17}\) The results from the `difftest` procedure in *Mplus* comparing the more parsimonious model and the model estimating that recursive effect, yielded a significant results ($\chi^2 = 16.84, df=2; p < .001$). Therefore, the more complex model fits the data significantly better than the more parsimonious model above.

Table 10 presents the statistical relationships between the independent and control variables and fear of crime, while controlling for the reciprocal relationship between fear of crime and social integration. There are two critical findings presented in this table. First,

\(^{16}\) It is preferable when using the scientific method to use the most straightforward explanation possible, unless a more complex explanation offers a significant improvement in the explanation offered.

\(^{17}\) One cannot perform traditional likelihood ratio test within *MPlus* with categorical variables because *MPlus* uses a WLSMV (weighted least squares Muthén version) that is a proprietary algorithm for estimating the model that uses a modified and more simplistic weights matrix to estimate the solution more efficiently. Instead, it is necessary to use the `difftest` option in *Mplus* that conceptually does the same thing as the likelihood ratio test, although it is more complex due to the inclusion of weights matrix. If the results of the `difftest` procedure produce a statistically significant result, one concludes that the more complex model did not make the model fit significantly worse by adding addition parameters. If the `difftest` procedure produces a non-significant change, then the more parsimonious model is retained.
estimating the reciprocal relationship between social integration and fear of crime suggests there is a significant and positive impact of fear of crime on social integration (b=0.53, p <.001). This suggests that as people become more fearful of crime, they become more socially integrated into their neighborhoods. This provides support for the Hypothesis 4, that there will be a significant reciprocal relationship between an individual’s level of fear and his/her level of social integration. However, after estimating the reciprocal relationship there is a clear positive reciprocal relationship between fear of crime and social integration. This is contrary to the Hypothesis 6, which predicted a negative relationship.

Table 10: Individual-Level Factors Predicting Fear of Crime Controlling for the Reciprocal Relationship between Social Integration and Fear of Crime in Hillsborough County (N = 1898)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Fear of Crime b (s.e)</th>
<th>Odds Ratio</th>
<th>Social Integration b (s.e.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Integration</td>
<td>-0.10 (0.04)**</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>Disorder</td>
<td>0.12 (0.01)***</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.12 (0.04)***</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.00 (0.01)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Racial/Ethnic minority</td>
<td>-0.01 (0.05)</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>Bachelor’s Degree or Higher</td>
<td>-0.01 (0.04)</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>-0.00 (0.01)</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>Member of neighborhood’s majority racial group</td>
<td>-0.11 (0.05) *</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>Number of times moved in past five years</td>
<td>-0.01 (0.02)</td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>Length of residence at current address</td>
<td>0.01 (0.002) *</td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>Fear of Crime</td>
<td></td>
<td>0.53 (0.13)***</td>
<td></td>
</tr>
</tbody>
</table>

Note.  \( \chi^2 (8) = 81.92, p < .05; \) RMSEA = 0.07; SRMSR = 0.022; CFI = 0.981

\( * p <.05 \quad ** p <.01 \quad *** p <.001 \)
The second critical finding from this analysis is that when the reciprocal relationship
between fear of crime and social integration is controlled, the relationship of social integration
on fear of crime is now negative. In the original model (Table 9) not accounting for the impact of
fear on social integration, the relationship between social integration and fear of crime is positive
and significant (b=0.04; p <.001), whereas after accounting for the reciprocal effect the
relationship becomes negative and significant (b= -0.10; p <.001). In addition to switching signs,
the magnitude of the effect became stronger after controlling for the reciprocal effect: as a person
becomes more socially integrated, the odds of him/her reporting higher levels of fear decreases
by 10%. (Prior to accounting for the reciprocal effect a one unit increase in social integration
would result in a 6% increase in the odds that a person would express a higher level of fear.)
Without the reciprocal relationship in the model, the true negative impact of integration on fear
was masked.

This sign change before and after controlling for the reciprocal effect provides partial
support for Hypothesis 5, that higher levels of social integration will predict lower levels of fear,
but the size of the effect will be decreased after controlling for the reciprocal relationship. The
results show that, after controlling for higher levels of social integration there is, as predicted, a
negative relationship between social integration and expressed levels of fear. The size of the
effect, however, is not reduced as predicted. In fact the hypothesis largely assumed, based on
prior literature, that there would be a negative relationship between social integration and fear of
crime—when in fact there is not. Therefore, it is not possible to assess the portion of the
hypothesis that speaks to the change in magnitude of the coefficient.
In addition to the critical findings presented above, the model yielded several other interesting findings. Notably, after considering the reciprocal relationship, the effect of disorder on fear of crime increased slightly. Whereas in the baseline model (Table 9) a one unit increase in disorder resulted in a 12% increase in the odds that a person would express higher levels of fear, in the reciprocal model this same increase would yield a 13% increase in the odds. The effects of other independent variables of interest—those from explanatory fear of crime models—are attenuated after considering the reciprocal relationship. Notably the effect of gender is slightly reduced from 15% to 13%, although it remained significant. However, the significant effects of age are eliminated after controlling for the reciprocal relationship.\(^{18}\) Finally, the effects of the control variables remained largely the same, although the impact of being in the neighborhood’s racial/ethnic majority are attenuated in this model.

**The Effects of Social Context**

When estimating multilevel models, which are used here to assess the effects of social context, it is necessary to determine if estimating a multilevel model is necessary. This is accomplished by estimating a null model, which estimates the proportion of the variance that is explained between groups—in this case neighborhoods—versus the total variance. This value is called the interclass correlation (ICC) and is a measure of how much of the variation in the dependent variable is explained between groups (or neighborhoods) versus within the neighborhoods (Raudenbush & Bryk, 2002). The ICC is then used to determine a coefficient for

\(^{18}\) Due to the robust effect of age as a predictor of fear in prior research and the insignificance here, the quadratic age effect of age was tested in subsequent models. After including this quadratic effect, neither the linear effect nor the quadratic effect exerted a significant effect on perceived levels of fear.
the design effect\textsuperscript{19}, a value greater than two suggests the need to use a multilevel model (Snijders & Bosker, 1999). The design effect coefficient for this dissertation, in regards to fear of crime is 4.16, which suggests the methodological appropriateness of using multilevel modeling.\textsuperscript{20}

The multilevel structural equation model (ML-SEM) is estimated to assess the effects of social context on fear of crime while accounting for the theoretically specified and empirically supported notion that context likely effects social integration and disorder as well. Overall, the model fit the data well ($\chi^2 (16) = 104.01, p < .05$; RMSEA = 0.054; SRMSR = 0.021; CFI = 0.987). Again like the previous model, the \textit{difftest} procedure is used to test if the multilevel model is a significant improvement over the more simplistic reciprocal model presented above. The results from the \textit{difftest} procedure again suggest that the more complex model—the multilevel model—significantly improves the fit over the single level with the reciprocal effect ($\chi^2 = 54.21, df=23; p < .001$).

The full results for this model are presented in Table 11. The first thing that is apparent by looking at the parameter estimates from the ML-SEM, is that social context plays an important role in determining fear of crime. The contextual variable that exhibits the strongest effect on fear of crime is racial/ethnic heterogeneity as measured with the Herfindahl Index. A one unit increase in the heterogeneity within the neighborhood increases the odds that a person will report elevated levels of fear by 72\%. However, because the variable is measured on a scale of 0 to 1, a one unit increase would be nearly impossible to observe. Instead, looking at an incremental increase of 10\% in the degree of racial/ethnic heterogeneity in a neighborhood

\textsuperscript{19} The Design Effect (DE) = 1 + ([Average Cluster Size -1] * ICC)

For this dissertation the DE = 1 + ([63.27 -1] * 0.057) = 4.16

\textsuperscript{20} There are also high DE coefficients for Social Integration = 4.80 and Disorder = 13.58. To compensate for the nested nature of the variables, the effects of social context are estimated on these variables.
would increase the likelihood that a person would report higher levels of fear by 7.2%. In other words, all things being equal, the more heterogeneous the neighborhood in which a person lives

Table 11: Predicting Fear of Crime Using a Multilevel Model Accounting for Multiple Theoretical Models, the Reciprocal Relationship, and the Effects of Social Context (N_{within}=1898; N_{between}=30)

<table>
<thead>
<tr>
<th>Fear of Crime</th>
<th>Odds Ratio</th>
<th>Social Integration</th>
<th>Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Neighborhoods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Integration</td>
<td>-0.22 (0.08)**</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>Disorder</td>
<td>0.12 (0.01)***</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>0.10 (0.05)*</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.00 (0.01)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Racial/Ethnic Minority</td>
<td>-0.03 (0.05)</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>Bachelor’s Degree or Higher</td>
<td>0.08 (0.06)</td>
<td>1.08</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>-0.01 (0.01)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Majority</td>
<td>-0.05 (0.05)</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td>Number of Moves</td>
<td>-0.03 (0.03)</td>
<td>0.98</td>
<td></td>
</tr>
<tr>
<td>Length of Residence</td>
<td>0.00 (0.01)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Fear of Crime</td>
<td>0.98 (0.26)***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Between Neighborhoods |           |                     |          |
| % Under Poverty Line  | 0.09 (0.03)*** | 1.09               | 0.02 (0.03)*** |
| % Unemployed          | -0.13 (0.09)  | 0.88               | -0.12 (0.06)*  |
| % Receiving Public Assistance | 0.14 (0.08)† | 1.15               | 0.02 (0.05)  |
| % Female Headed Households | 0.15 (0.03)*** | 1.16               | 0.06 (0.03)*  |
| % Renters             | -0.02 (0.01)*** | 0.98               | -0.01 (0.01)   |
| % Moved in Past 5 Years | 0.00 (0.02)  | 1.00               | 0.00 (0.01)    |
| Herfindahl Index      | 0.54 (0.18)** | 1.72               | -0.95 (0.41)*  |

Note. $\chi^2 (16) = 104.01, p < .05; \text{RMSEA} = 0.054; \text{SRMSR} = 0.021; \text{CFI} = 0.987$  
$^* p < .10 \quad ^* p < .05 \quad ^* p < .01 \quad ^{**} p < .001$
the more likely that person will report higher levels of fear. Other social context variables exert a significant effect on fear of crime, although the effects are much smaller in magnitude. The percentage of residents living under the poverty line and the percentage of female headed households both increase the odds that a person will report higher levels of fear; however, the size of the effect is modest in both cases (odds ratios of 1.09 and 1.16, respectively). Although not a central component of this dissertation, social context also exhibited an effect on social integration and disorder. With few exceptions (e.g., % of female headed households and social integration and % of renters and perceptions of disorder), the more socially disorganized a neighborhood becomes, based on the values of social context variables used here, levels of social integration are reduced and perceptions of disorder are increased.

We turn to the within neighborhoods sections of the model to examine how the individual level relationships are affected once social context is taken into account. These results are presented in the top half of Table 11, in the section labeled within neighborhoods. What is striking is that only three individual level variables—social integration, perceptions of disorder, and gender—remain significant in explaining fear of crime, after considering social context. These are the same three variables that have consistently exerted an effect on fear of crime in previous models. The effect of social integration on fear of crime is actually strengthened by taking into account social context, and now a one-unit increase in the level of social integration would actually result in a 20% reduction in the odds that a person would report a higher level of fear (β=-.22, p < .01). Whereas prior to considering social context, looking at Table 10, social integration only reduced the likelihood that a person would report higher levels of fear by only a 10% (β=-.10, p <.01). This means that the effect of social integration on fear of crime is doubled after accounting for social context and the reciprocal relationship. Returning to Table 11, the
effects of disorder (b=.12; p<.001) and gender (b=.10; p<.05) are both slightly attenuated from the more simplistic model reciprocal model presented above, although both variables are still significant predictors of levels of fear. The results find only mixed support for Hypothesis 7, that age and gender will exert a significant effect on fear of crime after controlling for social context. This mixed support comes from the fact that while gender remained a significant predictor of fear, age is no longer a significant predictor of fear after controlling for social context. The fact that disorder remained significant after controlling for social context, but the magnitude of the effect is reduced provides support for the Hypothesis 8.

The effects of considering social context on the reciprocal relationship between fear and social integration are also quite interesting. After accounting for the effects of social context, the strength of the reciprocal relationship is augmented by approximately 85% (from Table 10, b=0.98, p<.001) over the more simplistic reciprocal model presented above (from Table 9, b=.53, p<.001).21 The fact that the reciprocal relationship remained, and is strengthened after considering the social context presents partial support for the Hypothesis 9, that after considering social context, the reciprocal relationship will remain, although the size of the effect will be reduced. While the reciprocal relationship remained significant as predicted, the magnitude of the coefficients for both the direct effect (social integration → fear of crime) and the reciprocal relationship (fear of crime → social integration) are both strengthened.

Overview of Results and Hypotheses

Table 12 summarizes the results reported above in the context of the three research questions and nine hypotheses. Recall that the first research question, which centered on the

21 This is determined by calculating the percentage of change between the two coefficients. This is calculated by taking the difference between the new coefficient and the old coefficient and then dividing this by the value of the old coefficient. Or mathematically, Percentage of change = (New-Old)/Old.
identifying the strongest predictive fear of crime model, had three hypotheses. The first two of these hypotheses predicted that adding concepts from various explanatory models (i.e., disorder and vulnerabilities) to the social integration model. Hypotheses 1 and 2 received full support because the model fit was significantly improved with the addition of concepts from each of the other models. Hypothesis 3, which predicted that the strongest model would be an amalgamation of all three explanatory models, also received full support. Therefore, the results suggest that no one explanatory model is as good at predicting a person’s level of fear as is a model which simultaneously incorporates all three models.

The second set of hypotheses focused on the reciprocal relationship between fear of crime and social integration. Hypothesis 4, which predicted a significant reciprocal relationship, received full support. Hypothesis 5, which predicted a negative relationship between social integration and fear of crime—smaller in magnitude than the more simplistic model—received partial support. The partial support for this hypothesis stems from the negative relationship between social integration and fear of crime; however, the magnitude of the effect was not reduced from the baseline model. Instead, the absolute value of the effect was increased after considering the reciprocal effect, and there was a change in the sign between the more simplistic model and the model accounting for the reciprocal effect. No support was found for Hypothesis 6, which predicted a negative feedback loop. Instead of finding a negative feedback loop, the results suggest that the endogenous relationship actually creates a positive feedback loop between fear of crime and social integration. This was directly contrary to the hypothesized relationship, and possible reasons for this are explored in the discussion chapter.

Turning to the third research question, which focused on the effects of social context, the results provide mixed support for the hypothesized relationships. Hypothesis 7, which predicted
that only age and gender would remain significant predictors of fear after considering social context, received partial support. The partial support stems from the fact that, while gender continued to exert a positive effect on levels of fear, the effect of age became insignificant in the subsequent the final model. There was no support found for Hypothesis 8, which predicted a diminished relationship between disorder and fear of crime after considering social context. Instead, the results here suggest that the effect of disorder on fear is relatively consistent regardless of the complexity of the model. This consistent result is largely congruent with prior research, which suggests that disorder is one of the most robust predictors of fear. There was partial support for Hypothesis 9, which predicted that the reciprocal relationship between fear of crime and social integration would remain, although the size of the effect would be reduced after considering social context. The results suggest that the significant reciprocal relationship remained, although the size of the effect was substantially increased after considering social context.
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Hypothesis</th>
<th>Support Found?</th>
</tr>
</thead>
</table>
| Is the social integration model of crime strengthened with the addition of factors from the disorder and vulnerabilities models? | 1. The social integration model will be strengthened by integrating it with the disorder model.  
  2. The social integration model will be strengthened by including concepts from the vulnerabilities model.  
  3. The social integration model will be stronger still than either prior model by including concepts from both disorder and vulnerabilities. | Full Support   |
| Is there a reciprocal relationship between fear of crime and social integration?   | 4. There will be a significant reciprocal relationship between an individual’s level of fear and his/her level of social integration.  
  5. Higher levels of individual social integration will predict lower levels of fear, but the effect size will be decreased after controlling for the reciprocal relationship.  
  6. Higher levels of fear will predict lower levels of social integration after controlling for the reciprocal relationship. | Full Support   |
| How are the individual-level relationships conditioned by social context?         | 7. After considering social context, the only factors from the vulnerabilities model that will remain important are age and gender.  
  8. After considering social context, the effect of disorder on fear of crime will be reduced.  
  9. After considering social context, the reciprocal effect will remain, although the size of the effect between social integration and fear will be reduced. | Partial Support|
Chapter 5: Discussion

Overview

The purpose of this dissertation was to incorporate aspects of three major criminological perspectives predicting fear of crime in order to more thoroughly understand the causes of fear such that crime and fear reduction strategies can be made more effective. Specifically, factors from the vulnerabilities model such as gender and age, and perceptions of disorder—all known correlates of fear—were combined with a model examining the impact of social integration on levels of fear. The majority of prior empirical literature has not incorporated factors from multiple models and thus may be unable to fully explicate the causal factors behind fear. Moreover, almost no studies have taken the analysis one step further and examined the reciprocal impact that fear may have on an individual’s social integration. That is, although extant studies (e.g. Franklin et al., 2008; Gibson et al., 2002) report finding that fear leads to lower levels of social integration, there is little research assessing whether people who are more socially integrated are consequently less fearful. Further, even fewer studies have accounted for the social context in which residents live even though it is likely that neighborhood conditions influence individual’s fear, integration, and perceptions of disorder. This dissertation fills these gaps.

There are three important conclusions from this research. First, factors from all three models—vulnerabilities, disorder, and social integration—are important predictors of fear. Even though the magnitude of individual-level factors associated with greater levels of fear are
diminished when social integration is controlled for, female respondents were still significantly more likely to report higher levels of fear. This suggests the need to continue to account for individual vulnerabilities in subsequent fear of crime models. Second, the results show that it is important to account for the reciprocal effect of fear and social integration. Specifically, in models that do not measure the reciprocal effect, social integration is found to exert a positive effect on fear of crime; after controlling for the reciprocal relationship, the impact of social integration on fear becomes negative. This important finding may have been masked in prior studies that have only examined a unidirectional relationship between fear and social integration. Third, the impact of social context significantly affects individuals’ reported fear. In particular, factors related to neighborhood poverty and racial/ethnic heterogeneity increased individual levels of fear.

**Including Factors from All Three Models**

Much of the earliest fear of crime research focused on the use of singular explanatory fear of crime models (Hale, 1996). The main problem with these singular explanations is that research produced conflicting results from the same model (Lewis & Salem, 1986). Starting in the mid-1980s, some scholars started arguing that more comprehensive explanatory fear of crime models were both theoretically necessary and appropriate (Taylor & Hale, 1986; Warr, 2000). While some researchers (e.g., Alper & Chappell, 2012; Franklin et al., 2008; Gibson et al., 2002; McCrea et al., 2005) have incorporated multiple models in the same study, the inconsistent performance of the explanatory models has continued. For example, one recent study finds that social integration has no effect on fear of crime (Alper & Chappell, 2012) while another finds

---

22 Although they have incorporated multiple models, none of the research to date has presented and tested as comprehensive a model as that presented in this dissertation. In essence, this dissertation took the theoretically supported elements from multiple studies and tested an amalgamated version of the theory.
that it has a significant and negative effect on fear (Franklin et al., 2008). An additional problem with an incomplete model is that it leaves policy makers without the ability to craft potential solutions to alleviate fear of crime. For instance, an often reported finding from the community-oriented policing (COP) literature is that COP can effectively reduce fear of crime (Cordner, 2010; Eck & Maguire, 2006). However, the reason that COP is so successful at reducing levels of fear remains largely unknown because of the lack of thorough multi-model investigations. Presenting this more complete picture of what causes fear, will allow policy makers—through COP programs and possibly other solutions—to adequately target and address the right sources that influence fear of crime.

It was hypothesized that a multi-model explanation of fear of crime would better predict fear of crime, because it encompasses a broader array of factors associated with fear. The first stage of the analyses consisted of extending the social integration model of fear by incorporating aspects from the vulnerabilities and disorder perspectives. While no hypothesis specified the direction of the relationship between fear of crime and social integration for this stage of the analysis, it was largely expected—based on prior research (e.g., Franklin et al., 2008; Gibson et al., 2002; McGarrel et al., 1997)—that social integration would be associated with less fear. Results from this first-stage model, however, indicate that social integration actually increases fear of crime when perceptions of disorder and individual vulnerabilities are controlled. This relationship is in line with the vicarious victimization model (Skogan & Maxfield, 1981), which suggests that fear is transmitted between members in the same social network. Therefore, although the results from this model are unexpected given the results from some prior research, they are potentially explainable. The positive relationship between social integration and fear may be the byproduct of strategies used by the Hillsborough County Sheriff’s Office (HCSO) to
address fear of crime. Specifically, HCSO has implemented community meetings in all of the neighborhoods included in this dissertation. These community meetings are specifically designed to address the concerns of neighborhood residents and to open a dialogue between neighborhood residents and HCSO deputies. Therefore, it is likely that the people who show up to these initial meetings are people who have elevated levels of fear due to a prior experience with victimization. During the course of the meetings, fear may be inadvertently passed between residents. It is interesting to consider that the results from the model in this dissertation would suggest that one of the frequent COP strategies used by police departments, holding community meetings, may actually serve to augment levels of fear (Cordner, 2010).

In addition to the effects of social integration, factors associated with both the disorder and vulnerabilities models were important predictors of fear. In accordance with the bulk of prior fear of crime research (e.g., Maxfield, 1987; McGarrell et al., 1997) disorder was one of the most robust predictors of levels of elevated levels of fear. Defined as instances of violations of social norms (such as loitering, drinking in public, graffiti, and litter) that do not necessarily equate to violations of the law (Ross & Mirowsky, 2000), disorder causes people to become afraid because these conditions serve as visual cues that informal social control mechanisms have broken down (Skogan, 1990). Although some scholars have argued that social integration and disorder are redundant because they are simply different manifestations of the same underlying process (e.g., informal social control; Sampson & Raudenbush, 1999), the results from this dissertation suggest that the two concepts are independently important predictors of fear of crime. This would suggest that while the two concepts are related—as noted by the significant covariance terms between them—they represent independent sources of fear.
This finding is particularly interesting for COP, because addressing disorderly conditions is often one of the strategies used by police agencies that have transitioned to COP. As such, it may be that COP works to reduce fear of crime among neighborhood residents because the programs are addressing disorderly conditions, which evoke fear in neighborhood residents. This finding suggests that Broken Windows style policing initiatives—while questionable in their ability to reduce crime—may be successful at reducing levels of fear among neighborhood residents (Harcourt, 2001; Kelling & Coles, 1996). Therefore, it is likely that COP strategies have significantly reduced levels of fear, at least in part, by targeting disorderly neighborhood conditions. The key question, which is beyond the scope of this dissertation, is whether targeting disorder has been exclusively responsible for reductions in fear. The results from this dissertation would suggest, based on the most simplistic models, that addressing disorder is likely not the unilateral source of fear reduction.

Certain factors from the vulnerabilities model also exhibited a significant relationship with fear of crime. Specifically, females exhibited significantly higher levels of fear than males, net of other factors. Prior research has identified this elevated level of fear among females as one of the most consistent and robust predictors of fear of crime (Hale, 1996; Madriz, 1997). This dissertation found no support for any of the social vulnerabilities (e.g., race/ethnicity and socioeconomic status) and only limited support for physical vulnerabilities—only gender—in the full model. While age is a significant predictor of fear in the model from the first stage of the analyses, after considering a more comprehensive explanatory model, the age effect disappears. This could represent that risk of victimization naturally decreases with age because the elderly do not expose themselves to as much risk because they leave their homes less frequently.
The results from the vulnerability model are particularly important for understanding how COP can adequately address fear of crime. If many of the factors associated with the vulnerabilities model were significant, this would suggest that COP would have to overcome fear associated with a person’s sociodemographic characteristics. These current results suggest individual sociodemographics, with the exception of gender, are largely unimportant to consider when designing fear of crime reduction strategies. Addressing the fears of females in the neighborhood would require that scholars and policy makers have an improved understanding of the specific source of females’ fear. Some scholars have suggested that the etiology of this fear stems from concerns about sexual assault (e.g., Stanko, 1985, 1987, 1990), however this needs to be confirmed with future research. However, assuming this is the source of elevated levels of fear, law enforcement organizations may be able to design specific strategies (e.g., self-defense classes for women) to overcome this fear.

The results from this dissertation, along with a growing body of empirical research (Franklin et al., 2008; Gibson et al., 2002), suggests that it is imperative to use a multiple-model explanation in subsequent fear of crime research. Scholars (e.g., Taylor & Hale, 1986) have suggested that it is theoretically appropriate to consider multiple sources of fear simultaneously, and the results from this study empirically validate this. Failing to consider multiple sources of fear will likely lead to theoretically incomplete explanations of fear, and may even lead to theoretically inaccurate statements of fear. Prior explanations have largely suggested that fear is the product of a single factor (e.g. perceptions of disorder) or group of related factors (e.g., vulnerabilities). The current results suggest that this prior research (e.g., the Broken Windows) may be less useful at explaining behavior than a more complete explanation. Interestingly, with the exception of some of the concepts from the vulnerabilities models, each model can
independently contribute our understanding of fear of crime, but the results of this study suggest there is a need to combine the models to improve our ability to explain fear of crime. Working with a singular model to explain fear is illogical, as it makes the already difficult task of explaining fear of crime more difficult by ignoring other explanatory models that have also been shown to be predictive of fear of crime. With the exception of social vulnerabilities, largely as expected by prior research (e.g., Skogan & Maxfield, 1981), the models are not redundant with each other.

The Reciprocal Relationship between Social Integration and Fear

The second stage of the analyses, and one of the primary contributions of this research, accounts for the reciprocal relationship between fear of crime and social integration. Recall, that for a multitude of reasons, prior research has argued that it is critical to account for the potential endogeneity between fear of crime and social integration. That is, while the majority of scholars have assessed the impact of social integration and involvement on fear, other scholars have argued that this relationship is actually a feedback loop and that one’s level of fear also impacts his/her social integration. That is, fear of crime causes the person to do something—ostensibly to reduce their level of fear—that likely affects their social engagement. These actions on the part of the individual can either be pro-social (e.g., improving levels of social integration by connecting with neighbors) or anti-social (e.g., moving out of the neighborhood). Consideration of the feedback loop is crucial for understanding how COP might influence fear of crime, especially in regards to social integration. The presence of a significant feedback loop between fear of crime and social integration suggests that community residents are willing to do something to try and address elevated levels of fear. However, there is a need to determine in which direction the
feedback loop works; that is are residents going to become more or less socially integrated as a result of changing levels of fear.

Prior research has shown that elevated levels of social integration will reduce fear of crime (Bellair, 2000; Kubrin & Weitzer, 2003; Lee & Earnest, 2003; Liska et al., 1988; Liska & Warner, 1991; Markowitz et al., 2001; Oh & Kim, 2009; Skogan, 1986, 1990), although the results from the first-stage analyses in this dissertation indicate that social integration actually leads to more fear. Most of these studies that found a negative relationship, however, have not accounted for the reciprocal impact that fear may have on residents’ levels of social integration and involvement in the first place, even though it is plausible that fear leads to either less social involvement or greater social involvement. First, people who are more fearful may be less likely to become socially active and engaged in their community because they are afraid of leaving the house or the neighborhood because they are concerned about victimization. The negative effect of fear of crime on social integration closes an endogenous loop between the two constructs, which is called a negative feedback loop. Largely based on this body of prior research, this dissertation hypothesized the existence of a negative feedback loop, whereby people would limit their social interactions with other in the neighborhood—in an effort to reduce their personal risk of victimization. Second, a positive feedback loop could also exist whereby fear increases levels of social integration among neighborhood residents. In other words, residents start attending community meetings, or somehow get more involved with the other residents in their neighborhood, to address the conditions causing elevated levels of fear. Contrary to the hypothesized negative feedback loop, the results from this dissertation find support for a positive feedback loop.
While the positive feedback loop in which fear leads to greater social involvement was largely unanticipated based on the bulk of prior research, it is theoretically explainable. Theoretically speaking, high levels of fear may motivate community members to come together socially to identify potential solutions to ameliorate this fear (Durkheim, 1933, 1938). Prior research has suggested that elevated levels of fear can generate a positive feedback loop in four ways: 1) residents establish community groups; 2) residents create and participate in community events; 3) residents create support groups; and 4) residents create and participate in victim and witness programs (Miethe, 1995). These four solutions suggest that as residents become more fearful, they look for collective responses to address and reduce crime and to ultimately ameliorate or reduce fear. If these solutions are successful, fear among the residents is reduced; whereas if the solutions are not effective, fear is not reduced and may even be augmented through the vicarious victimization process discussed above.

Additionally, the measure of social integration used in this study may be responsible for the presence of the positive feedback loop instead of the negative feedback loop. Recall that the measure of social integration consisted of eight things that a person could do to assuage his/her fear of crime (e.g., attend neighborhood watch, get to know the police, ask neighbors to look out for their safety). The positive feedback loop present in this research may be a methodological artifact, whereby the measure of social integration only asks participants about things they are actively doing to reduce their levels of fear. Interpreting the results through this lens, makes the results seem very logical (i.e., something scary happens and a person does something to reduce that fear). However, it should be noted that this measure of social integration does not necessarily reflect all potential types of social integration. This will be discussed in more detail in the limitations section.
The results from this dissertation, specifically considering the measure of social integration used here, likely reflect that the social responses to residents’ fears successfully addressed levels of fear. Specifically, without controlling for the reciprocal effect, social integration leads to increased fear of crime; however, after accounting for the reciprocal effect of fear on social integration social integration reduced levels of fear. In other words, failing to account for the reciprocal relationship—as did most prior research—will likely yield erroneous results. That the true effects of social integration were being masked without considering the reciprocal relationship is also supported by methodological research. This research suggests that failing to account for endogenous relationships will result in biased and inconsistent parameter estimates (Paxton et al., 2011). The existence of the reciprocal relationship between fear of crime and social integration highlights the need for future research to investigate, more thoroughly, how social integration and fear are inextricably linked.

The results from the analysis of the reciprocal relationship between fear of crime and social integration has important implications for COP. Specifically, a frequent strategy that is used with COP is to artificially create and bolster levels of social integration among neighborhood residents by organizing neighborhood meetings between community residents and the police (Cordner, 2010). If researchers investigate the effectiveness of increasing social integration among neighborhood residents without controlling for the reciprocal relationship, the results will likely present an erroneous picture of what is actually happening. Without considering the reciprocal relationship, policy makers are likely to conclude that increasing social integration among neighborhood residents is not desirable—as it serves to increase levels of fear. This perception that levels of fear are increasing may lead police executives to stop these efforts to increase levels of social integration because of the adverse consequences of the
solution. However, this decision would be premature. Simply estimating the reciprocal relationship reveals the true relationship between social integration and fear of crime in that social integration decreases fear, which is in the desired direction. Furthermore, after accounting for the reciprocal relationship between fear and social integration, scholars and policy makers are left with a more clear understanding of what is responsible for levels of fear among neighborhood residents. Broken Windows style policing tactics—that have often been criticized as heavy handed (Harcourt, 2001)—may be effective at reducing disorder, which in turn leads to reductions in fear of crime; however in the full model, the magnitude of the effect pales in comparison to that of social integration. This means that it would be nearly twice as effective to increase social integration among neighborhood residents as it would be to reduce the presence of disorder. This suggests that it may be more effective for the police to be facilitators of social integration and other socially engaging processes, rather than to focus on the less effective enforcement efforts. However, doing both simultaneously would likely yield the greatest fear reduction benefits.

**Social Context Matters**

The third stage of the analyses estimated the effects of a still more holistic model by examining the influence of neighborhood social context. Many scholars have highlighted the importance of incorporating contextual effects into the study of fear of crime (e.g., Gibson et al., 2002; Hale, 1996; McGarrell et al., 1997; Skogan & Maxfield, 1981) and yet there remains a general dearth of such research. Despite the shortcomings of prior research, there are theoretical reasons to believe that contextual effects are important when studying fear of crime. Specifically, criminological theory suggests that levels of informal social control vary with neighborhood
social context (Bursik & Grasmick, 1993; Kasarda & Janowitz, 1974). Since informal social control is achieved through social integration, it is necessary to determine which neighborhood factors may directly influence social integration and fear. The results suggest that it is imperative to consider social context when examining fear of crime. Four important findings emerge from the results of the multi-level structural equation model estimated in the third step of the analyses. First, considering social context strengthens the relationship between social integration and fear of crime, and the reciprocal relationship. Second, social context exerts independent effects on fear of crime at the individual level. Third, in addition to fear of crime, social context affects perceptions of disorder and social integration. Fourth, evidence suggests that explaining fear of crime may require an even more comprehensive model than the one utilized here. Each of these important findings is discussed in detail below.

**Strengthening the Endogenous Relationship**

The increased strength of the relationship, after accounting for social context, between social integration and fear of crime provides additional support for the informal social control hypothesis. This conclusion is driven by the social disorganization theory research (e.g., Alper & Chappell, 2012), which suggests that neighborhood conditions—the same ones controlled for in this dissertation—are proxies for deteriorating informal social control mechanisms at the neighborhood level. Interestingly, controlling for breakdowns in informal social control at the neighborhood level strengthened the effect of informal social control at the individual level, suggesting something crucial: fear is not exclusively an individual-level phenomenon. Instead, fear seems to be a function of the individual situated within his/her social context. This represents a more complete explanation than that provided by most prior fear of crime models.
The strengthening of this relationship was largely expected, although it is important to note that the original expectation was for a negative feedback loop, rather than a positive feedback loop.

These results suggest that if residents perceive effective informal social control mechanisms, they are likely to seek out those resources to deal with increased levels of fear. This means that the perceptions of residents are crucial in determining levels of fear. However, unlike prior research that suggests that sociodemographic characteristics were important for determining levels of fear (e.g., Hale, 1996), it is also very important to consider what resources the residents have available as a recourse to deal with their fear. Research largely suggests this is a function of the degree to which a neighborhood is socially organized (Bursik & Grasmick, 1993; Kasarda & Janowitz, 1974). The results from this dissertation would suggest that, if there are informal social control mechanisms to turn to, residents will likely seek out those resources to assuage their fear. Furthermore, and perhaps more importantly, those informal social control mechanisms appear to be quite effective reducing levels of fear.

Furthermore, the fact that the strength of the fear of crime relationships is dependent upon social context suggests there may be cross-level interactions occurring. A cross-level interaction is when there is an interaction between a variable at the individual-level and a variable at the neighborhood-level, that may then influence a third variable at the individual level (Snijders & Bosker, 2012). In other words, the value of a variable at the individual-level is a function of the interaction between two other variables at multiple levels of analysis. These type of cross-level interactions are common in multilevel research, however some scholars caution against looking for cross-level interactions that are not theoretically specified (Aguinis, Gottfredson, & Culpepper, 2013; Snijder & Bosker, 2012). Therefore, future research should investigate cross-level interactions and individual assessments of fear of crime. Based on the
results from this dissertation, a potential cross-level interaction that should be examined is between social integration at the individual level and racial/ethnic heterogeneity at the neighborhood level. Recall that scholars suggest racial/ethnic heterogeneity influences fear because people are less able to predict the behaviors of others (i.e., people of a different racial/ethnic group than themselves) within their neighborhood. Therefore, it is possible that the effect of social integration on fear of crime is dependent upon the degree of racial/ethnic heterogeneity at the neighborhood level. Specifically, social integration may have less of an influence on fear of crime in neighborhoods that are more racially/ethnically heterogeneous.

**The Independent Effects of Social Context on Fear**

In addition to affecting the individual-level relationships previously estimated, social context also exerted independent effects on fear of crime. Some variables depicting social context behaved as would be expected based on social disorganization theory. Specifically, the percentage of residents living under the poverty line and the percentage of female-headed households both increased the likelihood that a person would express higher levels of fear. A potential explanation for these findings is that female-headed households tend to be of lower socioeconomic status than dual-parent households (Peterson & Krivo, 2005); additionally, a large portion of households in these neighborhoods are headed by women who have been shown to have higher levels of fear in general. Therefore, the finding linking fear of crime to poverty and female-headed household likely reflects a single explanation for the increased levels of fear: Residents in these types of neighborhoods do not have the financial resources to protect themselves from fear-evoking events or to move out of these neighborhoods. In essence, the financial situation of residents in these neighborhoods makes them more fearful because they
have little recourse to deal with their fear such as install protective gates, alarm systems, or video cameras. Other variables behaved as would be expected based on prior research and logic. Notably, Franklin and colleagues (2008) found that unemployment at the city level had no effect on fear of crime. The results from this dissertation, at the neighborhood (census designated place) level confirm these results. Unemployment may not impact fear because having more unemployed people in the neighborhood produces more people available to provide surveillance in the neighborhood. Although residential instability, a key component of informal social control within social disorganization theory, is not significantly associated with fear of crime, the finding is largely to be expected based on the location of the study. Research suggests during the early 2000s Florida, among other states, saw massive population grown and a construction boom (Woodward & Damon, 2001). Because of this housing boom, a large portion of residents would be classified as unstable (e.g., residing in their current residence for less than five years). Therefore, it is not entirely surprising that this measure of residential instability did not exert an effect on the variables of interest here.

Another interesting finding when examining the role of social context, is the effect of the degree of racial/ethnic heterogeneity within a neighborhood. The results from this dissertation suggest that increasing the degree of racial/ethnic heterogeneity in a neighborhood significantly increases levels of fear, net of other factors. An explanation for fear increasing with racial/ethnic heterogeneity comes from prior qualitative research that suggests that as heterogeneity increases so does fear, because residents are not able to predict and understand the behavior of their neighbors—especially those from other racial/ethnic groups (Rainwater, 1966; Suttles, 1972). Furthermore, prior to controlling for social context, the individual measure of being in the
racial/ethnic majority was a significant predictor of lower levels of fear. Therefore, it would seem that this effect represents a fear of others rather than representing a racial/ethnic effect at the individual-level (Covington & Taylor, 1991; Merry, 1981; Taylor, 1988). Furthermore, prior research has suggested that this breakdown in communication—through a process of social isolation between members of different racial/ethnic groups—will lead to elevated levels of fear (Maccoby et al., 1958; Merry, 1981). The results from this dissertation support this conclusion.

**The Effect of Context on Other Variables of Interest**

Largely as expected, based on prior research, the results from this dissertation support the notion that levels of social integration and perceptions of disorder are both affected by social context (Boggess & Maskaly, 2014; Bursik & Grasmick, 1993; Gau & Pratt, 2010; Kasarda & Janowitz, 1974; Piquero, 1999). With one exception—percent of female-headed households—levels of social integration and perceptions of disorder seem to be the product of different types of social context. It is important to note, that while levels of social integration and perceptions of disorder both vary with social context, the reason for this variation likely differs between the two.

Social disorganization research generally suggests that three key factors—concentrated disadvantage, residential instability, and racial/ethnic heterogeneity—are related to levels of social integration. Adverse neighborhood conditions (e.g., those characterized by high values on any of these measures) should lead to reduced levels of social integration (e.g., Kasarda & Janowitz, 1974). This classic pattern of social disorganization theory is seen with the variables for percentage of unemployed residents and the measure of racial/ethnic heterogeneity. However, 

---

23While the signs of the individual and neighborhood level measure are different, conceptually, they are in the same direction. The more heterogeneous a neighborhood (e.g., the higher the value of the Herfindahl Index), the lower the likelihood that a person would be a member of the neighborhoods racial or ethnic majority.
largely contrary to expectations, a break in the trend is seen with percentage of female-headed households, which shows a positive relationship with levels of social integration. This finding is difficult to explain, as the vast majority of research shows an inverse relationship between levels of female-headed households and levels of informal social control within neighborhoods (see generally Sampson, 1988). A possible explanation for this finding may reflect the intervention of the Hillsborough County Sheriff’s Office (HCSO) specifically a more intensive community policing strategy in those neighborhoods with high levels of female-headed households. First, research suggests HCSO—as an organization—was committed to community oriented policing (COP) strategies during the early 2000s (Bromley & Cochran, 2000; Cochran, Bromley, & Swando, 2002). In fact, the data that are used in this dissertation come out of HCSO’s COP efforts. Second, part of the COP strategy involved targeting resources at communities with disproportionately high levels of crime—like those typically characterized by high levels of female-headed households. Therefore, it is likely that HCSO had directed resources to these communities prior to the administration of the survey, and that part of the COP program was increasing levels of social integration in these communities.

The contextual variation in perceptions of disorder has been documented in prior research, and for the most part the results from this dissertation are in-line with the expectations from prior research. The results here show a positive relationship between two measures of concentrated disadvantage (i.e., the percentage of residents under the poverty line and percentage of female-headed households) and perceptions of disorder. Prior research has generally found an inverse relationship between perceptions of disorder and socioeconomic conditions of neighborhoods (Boggess & Maskaly, 2014; Gau & Pratt, 2010; Piquero, 1999). However, there
is an anomalous finding in the effect of social context on perceptions of disorder, the effect of the percentage of renters.

Generally, there will be an inverse relationship between the percentage of renters in a neighborhood and the socioeconomic status of the neighborhood (Bursick & Grasmick, 1993). However, the results from this dissertation suggest the percentage of renters is negatively related to perceptions of disorder. While this finding of a negative relationship is not unique to this study (e.g., Boggess & Maskaly, 2014), it is curious that, despite representing the same underlying construct as other contextual measures, the percentage of residents variable did not perform as expected. A potential explanation for this is that many renters are now living in environments that cannot be characterized as disorderly by design (e.g., Crowe, 2000). In other words, because there are groups of people responsible for ensuring neighborhood conditions (e.g., apartment management or homeowners associations) who artificially control the neighborhood conditions of residents by ensuring the neighborhood conditions stay within certain tolerances.

Taken as a whole, these findings are crucial for explaining the process through which COP can effectively reduce fear of crime. The results from this dissertation suggest that, while COP may successfully reduce fear of crime, doing so will require the consideration of social context. One implication of these findings is that it is likely inappropriate to think that COP can create blanket solutions to address fear of crime, that can be effectively used in all neighborhoods. Instead, it is necessary to customize COP fear-reduction strategies to address challenges that exist in particular neighborhoods. In other words, it is necessary to truly consider the nature of the community in creating community-oriented policing strategies. For example, in a traditional racially homogenous middle-class neighborhood, the police might not need to do anything more than invite neighborhood residents to a meeting to reduce fear of crime. However,
in a more impoverished racially heterogeneous neighborhood, the police may need to find a way
to bridge some of these extra gaps before inviting residents to a community meeting if they want
to achieve the same results as in the middle-class neighborhood. The good news is that, while it
is more effort on the part of the police to address fear of crime in more socially disorganized
neighborhoods, the dividends (e.g., fear reduction) are likely to be greatest in these
neighborhoods.

The Need for a More Comprehensive Theoretical Model

While the fear of crime model presented—and tested—in this dissertation is an
improvement over prior models, it is not the fear of crime model. The results from this
dissertation suggest it may be necessary to do two things. First, it may be time to reconsider the
utility of the vulnerabilities model moving forward. Secondly, scholars likely need to consider
still a more comprehensive fear of crime model. Each of these implications is discussed below.

Moving Beyond Vulnerabilities

While the study of fear of crime has its roots in the vulnerabilities model (Skogan &
Maxfield, 1981), the results from this dissertation suggest that it may be time to move beyond the
vulnerabilities model for two reasons. Recall that the vulnerabilities model suggests there are
certain factors—usually sociodemographic factors—that are associated with feelings of
vulnerabilities. The first reason to reconsider the inclusion of a vulnerabilities model is that, as
previously discussed, many of these findings may be represent spurious relationships, especially
after considering the social context of the residents. Therefore, the vulnerabilities model may be
redundant with other theoretically relevant constructs after considering a more complex model.
While there were no indications of multicollinearity in the present research, it is still not advisable to include redundant—and thus unnecessary—variables when engaging in theoretically oriented research.

The second reason to consider moving beyond the vulnerabilities model is the difficulty of theoretically integrating it with the social integration and disorder models. Recall that the social integration and disorder models integrate quite nicely together, because each is focused on the idea of informal social control. The social integration model suggests that the more integrated residents are into their neighborhoods the stronger the informal social control. The disorder model suggests that the presence of disorder serves as a visual cue to residents that informal social control mechanisms have broken down. Because each of these perspectives is focused on different manifestations of informal social, it is quite natural to integrate them together. However, the vulnerabilities model does not integrate with the other two quite as easily. Part of the reason for this is because there is so much variation—for each factor included in the vulnerabilities model—as to how it influences residents’ levels of fear. Therefore, future scholars may want to consider not integrating the vulnerabilities model with other models when there is a lack of theoretical and logical fit.

Despite the fact that we should move away from the vulnerabilities model, does not mean that the traditional sociodemographic factors (i.e., age and gender) are not important to consider in future fear of crime studies. To the contrary, scholars should pay careful attention to selecting certain factors from the vulnerabilities perspective and including them as control variables in the statistical models. Based on the results from this dissertation, in conjunction with other research, at a minimum scholars should include age and gender in subsequent research. Including the factors from the vulnerabilities model as control variables would change the way the model is
estimated and the results interpreted (Allsion, 1999). Using the structural equation modeling techniques used in this dissertation, would allow researchers to estimate all theoretically relevant relationships of interest for the control variables. Including the variables as the vulnerabilities perspective minimizes the relationship to be estimated to that which is theoretically justifiable (i.e., vulnerabilities to fear). Furthermore, interpreting the results when these factors are included as control variables, makes it so that scholars can more succinctly interpret the theoretical relationships of interest, without needing to focus on superfluous relationships.

**Developing a More Comprehensive Model**

The need to develop a more comprehensive model stems from some of the unexpected results seen during the iterative process of building a more fully specified fear of crime model in this dissertation. Specifically, the size of some of the coefficients associated with individual level variables (i.e., social integration to fear of crime and the reciprocal fear of crime to social integration) were amplified after accounting for social context. Multilevel modeling is designed to address violations of the regression assumption that units are independent of one another (Raudenbush & Bryk, 2002). Failing to consider the non-independence of observations will result in downwardly biasing the standard error estimates, which increases the likelihood that a researcher will make a Type I error. However, using multilevel modeling techniques does not typically result in changed magnitude of the parameter estimates, unless there is a cross-level interaction present (Hox, 2002). The type of cross-level interaction likely of interest for fear of crime research would involve the process whereby a relationship at the individual-level (i.e., social integration on fear of crime) is moderated by some factor(s) at the neighborhood level (i.e., racial/ethnic heterogeneity). This dissertation did not look for cross-level interactions
because best practices suggest researchers should have a developed multilevel theory, one that specifies how likely cross-level interactions function, prior to looking for cross-level interactions (Aguinis et al., 2013).

Moving forward, subsequent fear of crime research should specifically account for these likely cross-level interactions. While this dissertation did not definitively specify the causal model for fear of crime, it gives future scholars a good foothold to start addressing the multilevel theoretical fear of crime model. Based on the results from this dissertation, scholars now know two important things. First, based on the augmented size of certain effects after accounting for social context, future scholars can focus on a reduced number of individual-level variables that are affected by cross-level interactions. Specifically, there are three likely individual-level variables that are influenced by cross-level interactions: 1) social integration, 2) fear of crime, or 3) both.

Finding which theoretically specified variables, at the neighborhood level, likely moderate the individual-level relationships with the variables listed above, could be more difficult. However, based on prior theoretical and empirical work in conjunction with this dissertation, the process may be easier than initially anticipated. Specifically, the results from this dissertation suggest that neighborhood racial/ethnic heterogeneity exerts the strongest neighborhood-level direct effects on social integration and fear of crime. In fact, this is the strongest neighborhood-level predictor of both concepts at the individual-level. This result in conjunction with prior research (e.g., Merry, 1981; Rainwater, 1966; Suttles, 1972) suggests that fear of crime may be augmented by a fear of the unknown or a fear of dissimilar others. The argument proffered in this dissertation about social integration being influenced by social context was largely built on this argument. Therefore, future researchers need to develop a multilevel
theoretical explanation of fear of crime that accounts for the direct effects of social context, the cross-level interactions, and the non-recursive effect at the individual level. Developing and then testing this model will represent a progressive step forward that will improve criminologists’ ability to explain fear of crime.

**Policy Implications**

There are three key policy implications to be drawn from the results presented here. First, fear of crime may be functional. Second, certain COP strategies may be effective for reducing levels of fear. Third, other alternative policing strategies may be effective at reducing levels of fear by focusing on disorder. Each of these policy implications is discussed in detail below.

**Functional Fear**

Despite the fact that many residents would like to be free of fear, it may be undesirable to eliminate fear; instead, we want people’s perceptions of fear to match their objective level of risk. Prior scholars (e.g., Warr, 2000) have suggested that, in addition to being next to impossible, it is undesirable to eliminate fear. These scholars argue that fear serves an important function for neighborhood residents; it can reduce the risk of victimization when fearful residents minimize their exposure to risk of victimization through behavioral changes. But even if fear can be constructive, it would be unacceptable to adopt a public policy whereby residents’ fear of crime is unaddressed. Residents can experience debilitating levels of fear. These high levels of fear bring unintended consequences (e.g., social isolation or residential mobility; Doran & Burgess, 2012). Instead, we want a person’s fear of crime to represent the objective risk that they
will become the victim of a crime—a function based on the person’s exposure to risk and the self-protective behaviors.

So society should support functional fear of crime—fear that works to prevent the person from foreseeable victimization experiences. But society would not want the level of fear that would prevent the person from interacting with other residents. Understanding that there is a proverbial “sweet-spot” to a person’s level of fear is crucial for policy makers. If policy makers do not understand this, the kneejerk reaction is to try to eliminate residents’ fear because it is seen as an entirely negative state for the residents.

**COP as an Effective Strategy for Reducing Levels of Fear**

Recall that the empirical evidence is inconclusive when assessing whether COP effectively reduces crime are; however, research generally suggests that COP is quite effective at reducing levels of fear of crime among neighborhood residents (Cordner, 2010; Eck & Maguire, 2006). Research suggests COP strategies can reduce levels of fear by more than 70% (Zhao, Schneider, & Thurman, 2002). What is not known, however, is why COP is effective at reducing fear of crime.

The specific strategies that agencies have used to address elevated levels of fear vary from agency to agency. This dissertation can help police to focus those efforts so as to be maximally effective. If the police provide residents with the opportunity to become more socially integrated into the communities where they live, this could help reduce levels of fear. The measures of social integration on the survey asked about the presence and participation in formal community groups, knowledge of criminal victimizations in the neighborhood, and voluntarily agreeing to watch over neighbor’s property. These all reflect ways that police can intervene in
neighborhoods with a minimal investment of time and money. The evidence, from this dissertation and elsewhere, seems to suggest that engaging members of the community—through regular community meetings—is a key COP mechanism that effectively reduces levels of fear and potentially increases informal social control within neighborhoods (Kerley & Benson, 2000). The effectiveness of these community meetings can be further enhanced when the police give residents their full and sincere attention, and take the concerns of the residents seriously (Weisel, 2005).

**Focusing on disorder.** There is a substantial literature indicating that police can effectively reduce disorder. What is not so clear is whether reducing disorder can lead to reductions in crime. Scholars fall into three different camps in their views of the importance or effectiveness of reducing neighborhood disorder. First, there are scholars who argue—for a multitude of reasons—that focusing on disorder is a fruitless endeavor for the police (e.g., Harcourt, 1998; Sampson & Raudenbush, 1999). A second group of scholars argue that focusing police efforts on disorder is a worthwhile endeavor for addressing concerns about serious crimes (e.g., Kelling & Coles, 1996; Xu et al., 2005). A third group of scholars argue that, if the police focus on disorder, it is not a complete loss for addressing serious crime, but it is not a productive use of police resources (e.g., Boggess & Maskaly, 2014). The results from this dissertation seem to suggest a fourth perspective with implications for policy makers: it is important to target disorder to reduce fear of crime among neighborhood residents.

The results from this dissertation suggest that perceptions of disorder significantly increase residents’ levels of fear among neighborhood residents. This conclusion is well supported by prior fear of crime research (e.g., Franklin et al., 2002; McGarrel et al., 1997). The evidence seems to clearly suggest that law enforcement agencies—or other applicable municipal
service providers (e.g., code enforcement)—should focus on reducing disorderly conditions within neighborhoods. Focusing on reducing disorderly conditions, thereby reducing perceptions of disorder, has been a popular law enforcement—called broken windows style policing—strategy in the United States (Kelling & Coles, 1996). Again the ability of this type of policing strategy to reduce actual crime has been questionable, although the evidence seems to suggest broken windows style policing can effectively reduce fear of crime (Cordner, 2010). The likely reason for this is that it reduces disorderly conditions, which are positively related to fear of crime. Therefore, while law enforcement executives should probably not exclusively rely on broken windows style policing, adopting some of the tenets of this style of policing will yield dividends in combating fear of crime among neighborhood residents.

**Limitations**

Although this study has several strengths, it is not without its limitations. Specifically, there are three limitations that need to be considered when assessing the results from this study. First, the data used in this study were not specifically designed to address the current research questions. Second, the response rate to the mail survey was lower than optimally desired, which presents some potential problems about the representativeness of the sample. Third, the definition of neighborhood used here varies substantially from neighborhood to neighborhood and does not necessarily align with prior operational definitions of the concept and these neighborhoods may not accurately depict what neighborhood participants feel they may actually reside in.

While the data used to address the research questions in this dissertation were useful, as with most secondary sources, they were not ideal. The three key weaknesses of the data
pertained to the items available to measure fear of crime and to measure social integration, and the level of measurement for the variables. The fear of crime variable used in this dissertation was a single-item indicator that represented participants’ levels of fear on an ordinal scale. Using a single-item indicator may raise questions of reliability and validity with the dependent variable (Furr & Bacharach, 2008). However, because the item utilized directly asked about the construct of interest (i.e., fear), it is less problematic than if the measure had assessed a potentially related construct (e.g., being scared). Ergo, while the measure of fear is not perfect and it may have been beneficial to include other dimensions of the fear of crime construct, the measure utilized here—while restrictive—is a very direct measure of fear with a high degree of both face and content validity (Skogan, 2012).

The social integration measure was empirically valid and theoretically consistent with prior operational definitions, but it was narrow. The survey items did not measure all potential domains of social integration. This restricted definition of social integration is relevant to the interpretation of the results from this dissertation. The operationalization of social integration may not be valid in all neighborhoods, notably those neighborhoods without serious or visible crime problems. It follows logically that in neighborhoods with visible crime problems (i.e., those that people are aware of), residents would likely do something to reduce their levels of fear. However, in neighborhoods without visible crime problems this measure of social integration may not accurately capture residents’ level of social integration. Subsequent research should look into incorporating items assessing collective efficacy and the presence and strength of relationships with neighbors, among other things. Failing to do so will potentially limit the validity of the social integration to those neighborhoods with visible crime problems.
Other variables from the community survey also present measurement issues. Most of the variables included in this dissertation were measured on truncated ordinally scaled measures (e.g., four point Likert type scales) or were dichotomous (e.g., yes and no/don’t know). The simplified measurement is likely due to the survey being designed and administered by a law enforcement agency with limited expertise in survey methodology. There are two problems with the measurement of the variables in this manner: first truncating the variables without a neutral category, forces participants to make a selection that may not represent their true beliefs (Schutt, 2012). Second, while measuring things dichotomously is not inherently bad, combining the “no” and “don’t know” categories into a single category is problematic. The measure violated the basic assumptions of dichotomous measures because one of the response categories measures two different things, which cannot be sorted out (Schutt, 2007). This leads to an inability to separate out those participants who did not know or understand, from those who did know/understand, but for whom “no” was the legitimate response. It is possible that those people who were truly in the “don’t know” category were fundamentally different from those in the “no” category.

The second limitation of these data is the response rate from the mail survey. Recall that approximately one in three surveys were returned and only a little more than one in four of the surveys was suitable for analysis. This response rate is low for mail surveys, especially those using the Dillman’s (1978) Total Design Method, which typically seeks to have 50% or more response rate to mail surveys. One problem with a lower than optimal response rate is that there is the potential for response rate bias, whereby those people who responded to the survey were fundamentally different from the people who chose not to respond to the survey. A potential problem with this lower than optimal response rate is a non-response bias problem, whereby
those who chose to participate are fundamentally distinct (e.g., higher levels of fear or higher levels of social integration) from those who chose not to participate, resulting in a potential threat to internal validity (Schutt, 2012). If there were differences between the two the relationships in this study would be biased towards the characteristics of those who responded to the study. Because of the manner in which the data were collected, through a random sampling method, there is no way to determine if the respondents differ significantly from the non-respondents. Comparing the demographic characteristics of the sample respondents against the demographic profile of the Census Designated Places (CDP) in Hillsborough County bolsters confidence in these findings. Specifically, the demographic profiles of the respondents of the community survey matched the information from the Census in all but three CDPs. These results were based on information presented in two tables that are presented in Appendix B. While these results do not ensure a perfectly representative sample—and the response rate is still less than optimal—the lack of significant differences between the sample and the population bolsters confidence in the findings. Confidence in the validity of the data—and the conclusions of this dissertation—are further bolstered by the fact that the community survey was not motivated by adverse conditions (e.g., high crime rates or problematic police community relations). Instead the community survey was motivated by a genuine interest on the part of HCSO administrators to understand the attitudes and perceptions of residents from unincorporated Hillsborough County (personal communication with Carl Hawkins April 04, 2014).

Although the response rate is potentially problematic for the interpretation of the results, this weakness is shared by much of the other fear of crime research against which these findings are compared. Most recent fear of crime research is largely based on community surveys from

---

24 The only way in which the sample significantly varied from the demographic profile presented by the Census was in income and age. The sample was significantly older and wealthier than the demographic profile from the Census would suggest.
other law enforcement agencies around the United States. The surveys from other research have similar—and often times lower—response rates to the HCSO community survey. Furthermore, while the HCSO survey has some skewed demographic data (e.g., age, gender, and race/ethnicity of respondents), the sample is strikingly similar to those from other research studies (e.g., Alper & Chappell, 2012; Franklin et al., 2008; Gibson et al., 2002; McGarrel et al., 1997). Therefore, while the sample potentially has some issues in terms of representativeness, it has the same problems as other samples, which allows for a qualified (e.g., under these sampling conditions) comparison of the results between the studies.

The third, and final, limitation of the current study is the definition of neighborhood utilized. The definition of neighborhood is something that is contentious in the social sciences (see Hipp, Faris, & Boessen, 2012). Many studies that look at contextual effects will use an artificially created administrative boundary (e.g., census track) as the operational definition of neighborhood. This is problematic because the social context variables that are thought to influence the individual-level relationships could be potentially biased. A person may be influenced by the context of another neighborhood, or multiple neighborhoods, other than that in which they live. However, because of the size of neighborhood boundaries used here, this is likely not as problematic as if smaller units of aggregation were used as the operational definition of neighborhood.

Another issue is that the census units used in the current study do not match those used in other research on this topic. Most of the other studies have used census tracks or block groups to define neighborhoods. The definition of neighborhood used in this study was the census designated place (CDP), which represents larger administrative units of aggregation in unincorporated counties in the United States. Apart from the standard criticisms of neighborhood
definitions (see Hipp et al., 2012), this definition is potentially problematic for two reasons. First, as above, the definition is distinct from the definition used in other studies, which means the results may not be comparable. The second potential problem comes from the variation in the sizes of the CDP in unincorporated Hillsborough County. The smallest CDPs represent small housing developments or rural agrarian farming communities; the largest are the size of many small to medium sized cities. Using a different operational definition of neighborhood could have solved this problem; however, the decision to use this definition of a neighborhood was driven by the ability to ascribe data to the CDP as the smallest unit of aggregation. While it would have been desirable to have defined neighborhoods as smaller places, doing so would have come at the expense of being able to fully estimate the contextual effects.

Despite the problems associated with the operationalization of neighborhood used in this study, the definition and the setting of the neighborhoods are one of this study’s strengths. Few of the prior fear of crime studies have examined fear outside of largest major metropolitan areas (cf. Franklin et al., 2008; Gibson et al., 2002) and those that have, have been forced to look at larger levels of geographic aggregation (e.g., the city). This study is one of the few that looks at fear of crime outside of major urban areas and has the ability to examine smaller levels of aggregation (e.g., the census designated place). Furthermore, because the census unit used in this study was larger than the units used in other studies, an argument can be made that they more accurately reflect the true neighborhoods with which people would identify.

**Future Studies**

In spite of the limitations, the current study adds to the fear of crime literature by examining a more holistic explanatory fear of crime model that accounts for a reciprocal
relationship and contextual effects. This study also provides a basis for three directions for future research that would increase scholars understanding of fear of crime are proposed below. First, future research should examine whether these results are replicated when using an alternative measure of fear of crime. Second, research should examine the effect of highly publicized crimes on the complex relationships between fear of crime. Finally, fear of crime research should account for what role, if any, formal social control mechanisms play in determining fear of crime.

One of the key questions in the social sciences in general, and the fear of crime literature in particular, is whether there is correspondence between people’s attitudes and behaviors? In other words, if people report that they have high levels of fear (an attitudinal assessment) do their behaviors match this? Psychologists Fishbein and Ajzen (1975) have tried to answer this question using the theory of reasoned action. Criminologists have recently started advocating for improving fear of crime research by testing the assertions of the theory of reasoned action. Specifically, criminologists are interested in determining if explanatory models of fear of crime would remain the same using behavioral indicators of fear rather than attitudinal measures.

Generally speaking, the theory of reasoned action would suggest that people’s attitudes and behaviors have strong concordance (i.e., they match), although there are numerous instances where the two do not match (Sheppard, Hartwick, & Warshaw, 1988). Criminologists are interested in determining whether behavioral indicators of fear match the attitudinal indicators of fear most often used in fear of crime research (Skogan, 2012; Warr, 2000). Addressing the potential variation between attitudes and behavior may help to further flesh out a comprehensive fear of crime model.
The second future direction for research is to examine what role, if any, highly publicized criminal cases play in affecting people’s levels of fear. This is another aspect of “context” that could have an impact on fear of crime. Research should assess whether these high profile cases affect the explanatory model used to explain fear of crime. Optimally, this would be done using longitudinal data. Looking at these high profile cases would help determine what role, and to what degree, the media’s portrayal of crime influences peoples levels of fear. Most research examining the influence of media consumption on levels of fear, suggests that the media plays a minor role in establishing levels of fear. However, most of these studies were conducted prior to the advent of cable news and the propagation of the internet into the daily lives of citizens.

The third and final direction of future research proposed here includes examining the role formal social control mechanisms (e.g., the police) play in controlling levels of fear. Research suggests that there is a relationship between the satisfaction with the police and levels of fear (see Cordner, 2010). However, the majority of the research looking at this does not include concepts from the other explanatory fear of crime models (e.g., social integration). Therefore, it may be that including perceptions of the police in the holistic fear of crime model presented in this dissertation would improve the explanatory power of the fear of crime model.

Concluding Thoughts

Although criminologists tend to focus on actual manifestations of crime, it is also important to consider the reactions to crime. Specifically, some scholars argue that it is equally important to consider fear of crime (Bennett, 1991; Farrall et al., 2000; Hale, 1996; Warr, 1984). This concern is driven by the fact that fear of crime can have a destabilizing role on neighborhoods, which could result in elevated levels of actual crime. Policy makers have
recognized the importance of controlling fear of crime, and have devised new policing strategies specifically designed to target crime—called community-oriented policing (COP) strategies. Research suggests that COP strategies are effective for reducing fear of crime, but do little to reduce actual levels of crime. A likely reason for this is an incomplete explanatory fear of crime model.

The current study utilized a data set from residents living in unincorporated Hillsborough County, to try and improve criminologists ability to predict fear of crime. Specifically, the study examined a multi-model—controlling for known factors associated with fear of crime—and a multilevel model—controlling for social context—to predict fear of crime. Furthermore, the study accounted for a theoretically specified reciprocal relationship between fear of crime and social integration. The results suggest that there are multiple causal factors associated with fear of crime, and that the performance of those factors may differ from the conclusions presented in prior research which relied on more simplistic explanatory models. The current study offers insight into the source of fear among neighborhood residents and offers policy makers potential solutions to be used to further reduce fear of crime using COP strategies, and for scholars who continue to advance our understanding of fear of crime.
Chapter 6: List of References


124


Appendix A: Copy of Survey Instrument
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: What was your age on your last birthday?</td>
<td>Age (e.g., 25)</td>
</tr>
<tr>
<td>Q2: What is your gender?</td>
<td>Male, Female</td>
</tr>
<tr>
<td>Q3: What is your race?</td>
<td>White, Black, American Indian, Aleut, Eskimo, Asian, Pacific Islander, Other</td>
</tr>
<tr>
<td>Q4: Are you of Hispanic origin?</td>
<td>No, Yes</td>
</tr>
<tr>
<td>Q5: Are you married, widowed, divorced, separated or have you never been married?</td>
<td>Married, Widowed, Divorced, Separated, Never Married</td>
</tr>
<tr>
<td>Q6: Which category represents the total combined income of all members of this household during the past 12 months that is since August 2003?</td>
<td>Less than $10,000, 10,000 - 14,999, 15,000 - 24,999, 25,000 - 34,999, 35,000 - 49,999, 50,000 - 74,999, 75,000 - 99,999, 100,000 - 149,999, 150,000 - 199,999, $200,000 or more</td>
</tr>
<tr>
<td>Q7: Are you CURRENTLY a member of the Armed Forces?</td>
<td>No, Yes</td>
</tr>
<tr>
<td>Q8: What was the highest level of education that you have completed?</td>
<td>Never attended or Kindergarten, Elementary, High School, 2-year college, 4-year college, Masters, Doctoral</td>
</tr>
<tr>
<td>Q9: Are you currently enrolled, either full-time or part-time, in a college, university, trade, or vocational school?</td>
<td>College/University full-time, College/University part-time, Trade or vocational school full-time, Trade or vocational school part-time, Not at all</td>
</tr>
<tr>
<td>Q10: How long have you lived at this address?</td>
<td>Number of years, Number of months</td>
</tr>
<tr>
<td>Q11: Altogether, how many times have you moved in the last 5 years?</td>
<td>Number of times</td>
</tr>
<tr>
<td>Q12: Did you have a job or work at a business last week? Do not include volunteer work or work around the house.</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Q13: We're interested in finding out if people we survey do anything in particular to keep thieves or intruders out of their homes. Does your household have any special devices such as dead bolt locks, electric timers for lights, or an alarm system? Do not include animals.</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Q14: Is there an organized neighborhood watch or citizen's protection group for your area?</td>
<td>Yes, No, Skip to Q16</td>
</tr>
<tr>
<td>Q16: Do you, or does anyone in your household, take part?</td>
<td>Yes, No, Don't know</td>
</tr>
<tr>
<td>Q17: Which of the following types of serious crimes do you know to have occurred in your neighborhood in the past 12 months that is since August 2003?</td>
<td>People openly selling drugs, People openly using drugs, Auto theft, Theft of personal property, Breaking and entering to steal personal property, Violent physical attacks, Crimes committed with guns, Sexual Assault/Rape, Murder</td>
</tr>
<tr>
<td>Q18: How did you find out about these crimes?</td>
<td>You or someone you know was victimized, Witnessed criminal acts in neighborhood, Learned about crime through conversations with neighbors, neighborhood association newsletters, and/or organizations' newsletters and/or community meetings, Received information directly from the local police through community meetings, newsletters, pamphlets, crime bulletins, and/or police Internet websites, Received information through the media, such as newspapers, TV, and radio, Received information through a public kiosk/terminal or by visiting a police substation, Other</td>
</tr>
<tr>
<td>Q19: Overall, do you think you are well informed of crime which occurs in your neighborhood?</td>
<td>Yes, No, Don't know</td>
</tr>
<tr>
<td>Continue to next page</td>
<td></td>
</tr>
</tbody>
</table>
Q20: How satisfied are you with the quality of life in your NEIGHBORHOOD? Are you very satisfied, satisfied, dissatisfied, or very dissatisfied?

- Very satisfied
- Satisfied
- Dissatisfied
- Very dissatisfied
- Don't know

Q21: How fearful are you about crime in your NEIGHBORHOOD? Are you very fearful, somewhat fearful, not very fearful, or not at all fearful?

- Very fearful
- Somewhat fearful
- Not very fearful
- Not at all fearful
- Don't know

Q22: Over the last 12 months, have your fears increased, decreased, or stayed the same?

- Increased
- Decreased
- Stayed the same
- Don't know

Q23: Do any of the following conditions or activities exist in your NEIGHBORHOOD ...

(CHECK APPROPRIATE BOX FOR EACH)

- Abandoned cars and/or buildings
- Rundown/neglected buildings
- Poor lighting
- Overgrown shrubs/trees
- Trash
- Empty lots
- Illegal public drinking/public drug use
- Public drug sales
- Vandalism or Graffiti
- Prostitution
- Panhandling/Begging
- Loitering/hanging out
- Transient/youth skipping school
- Transients/Homeless sleeping on benches, streets

Q24: Do any of the conditions you just identified make you feel less safe in your neighborhood?

- Yes
- No - Skip to Q25
- Don't know - Skip to Q26

Q25: Which one of the conditions you just identified affects your feeling of safety THE MOST?

Select ONE of the following

- Abandoned cars
- Rundown/neglected buildings
- Poor lighting
- Overgrown shrubs/trees
- Trash
- Empty lots
- Illegal public drinking/public drug use
- Public drug sales
- Vandalism or Graffiti
- Prostitution
- Panhandling/Begging
- Loitering/hanging out
- Transient/youth skipping school
- Transients/Homeless sleeping on benches, streets
- Don't know

Q26: Here are some things people do to protect themselves or their property from crime that takes place AT HOME. In the past 12 months, have you done any of these things in a direct response to your own family's fear of crime.

(CHECK APPROPRIATE BOX FOR EACH)

- You go to neighborhood watch meetings
- You are your neighbor and you have agreed to watch out for each other's safety
- You've installed a security system for your home
- You've asked the police to do a home security check
- You have guard dogs at home
- You've engraved security identification numbers on your belongings
- You've installed extra locks on windows and/or doors
- You keep weapons inside the home
- You've added outside and/or automatic lighting (e.g. timers)

Q27: The next few questions pertain to ALL areas of Hillsborough County. Are you afraid of becoming a victim of STREET crime?

- Yes
- No - Skip to Q29
- Don't know - Skip to Q28

Q28: Which one of the following types of street crime are you MOST afraid of?

Select ONE of the following

- Robbery, someone stealing from you
- Physical assault that does not involve a gun (non-domestic violence)
- Assault with a gun, someone hurting you with a deadly weapon
- Sexual assault/Rape
- Murder
- Don't know

Q29: Here are some things people do to avoid becoming a victim of crime that takes place outside the home. In the past 12 months, have you done any of these things...

(CHECK APPROPRIATE BOX FOR EACH)

- You carry a self-defense weapon such as a whistle or alarm
- You carry a self-defense weapon (includes knife, gun, club, mace, taser, stun gun)
- You no longer take certain routes or go into certain areas in your neighborhood
- You avoid going out at night
- You avoid going out alone
- You took a self-defense class
- You attend community meetings in your neighborhood
- You've made an effort to get to know the police in your neighborhood
- You plan to relocate to outside of your neighborhood
- You took other preventative measures
- If "other", specify:

Q30: In the past 12 months, have you been in contact with the HILLSBOROUGH COUNTY SHERIFF'S OFFICE (HCSO) for any reason?

- Yes
- No - Skip to Q31
- Don't know or can't remember - Skip to Q32

Continue to next page → 141
Q31: How would you describe your contact with HCSO?

- Casual conversation with a police officer
- Officer responding to respondent's call for service
- Gave information to officer about a crime or incident (e.g., crime tip)
- Reported a crime to the police
- Participated in a survey given by the police department
- Asked the police for information for advice
- Participated in a community activity that involved the police (e.g., clean-up, social event, community meeting)
- Traffic violations/traffic accidents
- Working with police to address specific problems
- Other

Q32: In the past 12 months, have you observed any increases or decreases in HCSO deputy presence in your neighborhood or did the number stay the same?

- Increase
- Decrease
- No change
- Never seen police in my neighborhood - Skip to Q34
- Don't know - Skip to Q34

Q33: In the past 12 months, what activities have you personally witnessed?

(CHECK APPROPRIATE BOX FOR EACH)

- HCSO deputies talking with residents in the neighborhood
- HCSO deputies talking with business owners in the neighborhood
- HCSO deputies attending community meetings
- HCSO deputies facilitating crime watch and prevention activities such as night's out
- HCSO deputies involved with rides through recreational or school activities
- HCSO deputies opening stations or information centers

Q34: In the past 12 months, have you heard about any community meetings concerning crime taking place in your neighborhood?

- Yes
- No - Skip to Q37
- Don't know - Skip to Q37

Q35: In the past 12 months, have you attended any of these community meetings?

- Yes - Skip to Q37
- No
- Don't know - Skip to Q37

Q36: What are your reasons for not attending any meetings?

(SELECT ALL CATEGORIES THAT APPLY)

- Aware of meetings, but do not know location and/or dates/times
- Unable to obtain child care
- Meetings held in unsafe/crime part of town
- Attendance would not help crime problem
- Meeting place is too far
- Meeting takes place during work hours
- Don't have the time to attend
- Not especially concerned about crime in my neighborhood
- Other

Q37: In general, how satisfied are you with the HCSO deputies who serve your neighborhood? Are you very satisfied, satisfied, or very dissatisfied?

- Very satisfied
- Satisfied
- Very dissatisfied
- Don't know (no opinion or not aware of police services)

Q38: Does the HCSO have a phone number for you to call for non-emergencies, OTHER than 911?

- Yes (even if you do not remember the number itself)
- No
- Don't know/Can't remember

Q39: How much does HCSO do with the residents of your neighborhood to PREVENT crime and safety problems, a lot, some, very little, or nothing at all?

- A lot
- Some
- Very little
- Nothing at all
- Don't know

Q40: Are you familiar with the term Community Policing?

- Yes
- No
- Don't know

Q41: Community policing involves deputies working with the community to address the causes of crime in an effort to reduce the problems themselves and the associated fear, through a wide range of activities. Based on the definition, during the past 12 months do you think the HCSO deputies in your neighborhood practiced community policing?

- Yes
- Somewhat
- No - Skip to Q44
- Don't know - Skip to Q44

Q43: How do you know?

(SELECT ONE of the following)

- Saw police doing community policing activities
- Saw in newspaper, on TV, or heard on the radio that police were doing community policing - Skip to Q44
- Other

Q44: You indicated that you saw deputies doing community policing activities. Please specify what types of activities you saw the police participating in.

(SELECT ALL CATEGORIES THAT APPLY)

- Increasing traffic stops
- Increasing their presence in high crime/hot spots areas
- Increasing patrol by vehicle/foot/bike patrol
- Working with the community and/or business owners to address specific problems
- Attending community meetings
- Conducting crime prevention or community policing workshops
- Conducting community and/or business surveys about neighborhood problems
- Running youth programs like DARE, GREAT, PAL
- Other

Q45: What type of things do you wish the deputies were doing in your neighborhood?

(SELECT ALL CATEGORIES THAT APPLY)

- Working with the community to prevent crime
- Increasing the number of officers patrolling the streets
- Assigning the same officers to my neighborhood day in and day out
- Removing the trash, abandoned cars, destroying abandoned buildings or helping to evict bad tenants
- Cleaning up the streets
- Working more with the children in the area; give them a safe place to play
- Doing home security checks/surveys
- Do not want them to do anything more; they are doing what I want them to do
- Other

You've reached the end of our survey. Please return the completed questionnaire in the postage paid return envelope.

Thank you for your participation!
Appendix B: Demographics from the 2000 Census for Census Designated Places
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apollo Beach</td>
<td>7.4</td>
<td>50.1</td>
<td>8.8</td>
<td>1.4</td>
<td>2.0</td>
<td>7.4</td>
<td>89.1</td>
<td>3.5</td>
<td>12.7</td>
<td>54.0</td>
<td>11.5</td>
<td>26.7</td>
<td>2.9</td>
<td>51.5</td>
<td>0.7</td>
<td>4.1</td>
</tr>
<tr>
<td>Bloomingdale</td>
<td>19.8</td>
<td>50.5</td>
<td>12.4</td>
<td>6.8</td>
<td>3.2</td>
<td>6.9</td>
<td>82.8</td>
<td>5.2</td>
<td>12.1</td>
<td>47.6</td>
<td>7.8</td>
<td>34.8</td>
<td>2.3</td>
<td>68.9</td>
<td>0.8</td>
<td>3.3</td>
</tr>
<tr>
<td>Boyette</td>
<td>5.9</td>
<td>49.7</td>
<td>10.5</td>
<td>5.8</td>
<td>2.3</td>
<td>8.2</td>
<td>82.9</td>
<td>5.4</td>
<td>9.8</td>
<td>51.8</td>
<td>6.5</td>
<td>20.7</td>
<td>1.5</td>
<td>55.1</td>
<td>1.7</td>
<td>5.9</td>
</tr>
<tr>
<td>Brandon</td>
<td>77.9</td>
<td>51.5</td>
<td>12.9</td>
<td>10.0</td>
<td>3.3</td>
<td>12.7</td>
<td>73.7</td>
<td>7.4</td>
<td>28.4</td>
<td>50.2</td>
<td>5.5</td>
<td>24.7</td>
<td>2.6</td>
<td>51.6</td>
<td>1.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Cheval</td>
<td>7.6</td>
<td>51.2</td>
<td>10.5</td>
<td>5.2</td>
<td>5.8</td>
<td>13.0</td>
<td>75.5</td>
<td>5.8</td>
<td>59.3</td>
<td>54.4</td>
<td>7.6</td>
<td>37.2</td>
<td>2.2</td>
<td>46.9</td>
<td>1.6</td>
<td>4.9</td>
</tr>
<tr>
<td>Citrus Park</td>
<td>20.2</td>
<td>50.9</td>
<td>11.4</td>
<td>8.3</td>
<td>4.1</td>
<td>20.3</td>
<td>67.1</td>
<td>7.2</td>
<td>16.6</td>
<td>73.9</td>
<td>8.9</td>
<td>16.8</td>
<td>3.6</td>
<td>54.7</td>
<td>1.9</td>
<td>6.3</td>
</tr>
<tr>
<td>Dover</td>
<td>2.8</td>
<td>46.5</td>
<td>18.9</td>
<td>0.8</td>
<td>0.9</td>
<td>50.9</td>
<td>47.1</td>
<td>6.3</td>
<td>29.6</td>
<td>47.2</td>
<td>11.8</td>
<td>22.9</td>
<td>10.5</td>
<td>31.3</td>
<td>8.5</td>
<td>28.0</td>
</tr>
<tr>
<td>East Lake-Orient Park</td>
<td>5.8</td>
<td>50.7</td>
<td>13.5</td>
<td>29.2</td>
<td>1.1</td>
<td>12.0</td>
<td>57.0</td>
<td>11.3</td>
<td>23.2</td>
<td>51.5</td>
<td>29.5</td>
<td>26.6</td>
<td>3.6</td>
<td>34.4</td>
<td>5.4</td>
<td>14.6</td>
</tr>
<tr>
<td>Egypt Lake-Leto</td>
<td>32.8</td>
<td>51.2</td>
<td>14.8</td>
<td>9.0</td>
<td>4.1</td>
<td>45.8</td>
<td>42.0</td>
<td>9.1</td>
<td>53.7</td>
<td>41.1</td>
<td>6.5</td>
<td>37.2</td>
<td>3.3</td>
<td>35.4</td>
<td>2.9</td>
<td>14.4</td>
</tr>
<tr>
<td>Fish Hawk</td>
<td>2.0</td>
<td>50.4</td>
<td>10.5</td>
<td>4.3</td>
<td>1.2</td>
<td>6.1</td>
<td>88.0</td>
<td>5.0</td>
<td>8.0</td>
<td>60.9</td>
<td>27.3</td>
<td>28.8</td>
<td>1.3</td>
<td>65.9</td>
<td>0.0</td>
<td>3.3</td>
</tr>
<tr>
<td>Gibson</td>
<td>8.8</td>
<td>48.5</td>
<td>14.3</td>
<td>1.6</td>
<td>1.1</td>
<td>18.0</td>
<td>78.1</td>
<td>9.3</td>
<td>37.6</td>
<td>71.3</td>
<td>4.4</td>
<td>28.5</td>
<td>4.7</td>
<td>34.0</td>
<td>6.2</td>
<td>18.3</td>
</tr>
<tr>
<td>Greater Carrollwood</td>
<td>33.5</td>
<td>52.3</td>
<td>11.3</td>
<td>6.5</td>
<td>4.2</td>
<td>18.3</td>
<td>71.0</td>
<td>6.5</td>
<td>29.3</td>
<td>54.1</td>
<td>7.4</td>
<td>34.7</td>
<td>1.8</td>
<td>50.8</td>
<td>0.9</td>
<td>5.0</td>
</tr>
<tr>
<td>Greater Northdale</td>
<td>20.5</td>
<td>52.1</td>
<td>13.1</td>
<td>6.2</td>
<td>4.5</td>
<td>15.0</td>
<td>73.9</td>
<td>7.1</td>
<td>26.6</td>
<td>52.2</td>
<td>13.5</td>
<td>18.4</td>
<td>2.9</td>
<td>58.4</td>
<td>0.9</td>
<td>4.7</td>
</tr>
<tr>
<td>Greater Sun Center</td>
<td>16.3</td>
<td>57.4</td>
<td>0.2</td>
<td>0.2</td>
<td>0.5</td>
<td>1.2</td>
<td>97.9</td>
<td>0.0</td>
<td>10.2</td>
<td>49.3</td>
<td>12.0</td>
<td>21.0</td>
<td>0.6</td>
<td>38.1</td>
<td>0.7</td>
<td>4.6</td>
</tr>
<tr>
<td>Keystone</td>
<td>14.6</td>
<td>49.9</td>
<td>9.1</td>
<td>3.8</td>
<td>3.0</td>
<td>8.5</td>
<td>84.3</td>
<td>2.5</td>
<td>5.4</td>
<td>47.5</td>
<td>6.5</td>
<td>31.0</td>
<td>0.7</td>
<td>80.7</td>
<td>0.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Lake Magdalene</td>
<td>28.8</td>
<td>52.2</td>
<td>11.9</td>
<td>6.5</td>
<td>3.0</td>
<td>13.5</td>
<td>76.8</td>
<td>6.2</td>
<td>30.3</td>
<td>58.6</td>
<td>8.2</td>
<td>19.7</td>
<td>2.3</td>
<td>43.3</td>
<td>1.8</td>
<td>7.2</td>
</tr>
<tr>
<td>Lutz</td>
<td>17.1</td>
<td>50.2</td>
<td>11.9</td>
<td>3.3</td>
<td>1.9</td>
<td>7.9</td>
<td>86.4</td>
<td>4.2</td>
<td>14.3</td>
<td>45.7</td>
<td>9.7</td>
<td>23.3</td>
<td>3.4</td>
<td>60.3</td>
<td>1.2</td>
<td>6.0</td>
</tr>
<tr>
<td>Mango</td>
<td>8.8</td>
<td>49.8</td>
<td>13.5</td>
<td>7.0</td>
<td>1.4</td>
<td>9.2</td>
<td>81.0</td>
<td>11.5</td>
<td>33.1</td>
<td>43.0</td>
<td>5.5</td>
<td>25.1</td>
<td>4.3</td>
<td>34.0</td>
<td>3.1</td>
<td>12.6</td>
</tr>
<tr>
<td>Palm River-Clair Mel</td>
<td>17.6</td>
<td>51.3</td>
<td>14.1</td>
<td>35.7</td>
<td>1.8</td>
<td>22.5</td>
<td>40.3</td>
<td>13.9</td>
<td>26.1</td>
<td>54.2</td>
<td>3.5</td>
<td>39.2</td>
<td>4.6</td>
<td>35.4</td>
<td>5.3</td>
<td>17.4</td>
</tr>
<tr>
<td>Pebble Creek</td>
<td>4.8</td>
<td>51.4</td>
<td>9.6</td>
<td>6.7</td>
<td>7.1</td>
<td>9.3</td>
<td>76.7</td>
<td>6.0</td>
<td>16.3</td>
<td>49.3</td>
<td>11.9</td>
<td>33.1</td>
<td>1.8</td>
<td>68.4</td>
<td>0.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Progress Village</td>
<td>2.5</td>
<td>54.4</td>
<td>12.9</td>
<td>91.7</td>
<td>0.4</td>
<td>2.7</td>
<td>5.9</td>
<td>14.0</td>
<td>17.2</td>
<td>53.0</td>
<td>10.4</td>
<td>13.8</td>
<td>5.1</td>
<td>27.7</td>
<td>4.2</td>
<td>18.4</td>
</tr>
<tr>
<td>Riverview</td>
<td>12.0</td>
<td>50.6</td>
<td>10.7</td>
<td>9.0</td>
<td>2.1</td>
<td>9.0</td>
<td>79.5</td>
<td>8.9</td>
<td>20.3</td>
<td>28.6</td>
<td>2.2</td>
<td>41.8</td>
<td>1.3</td>
<td>51.0</td>
<td>2.4</td>
<td>6.8</td>
</tr>
<tr>
<td>Ruskin</td>
<td>8.3</td>
<td>49.0</td>
<td>13.8</td>
<td>1.3</td>
<td>0.8</td>
<td>36.7</td>
<td>60.7</td>
<td>6.2</td>
<td>27.3</td>
<td>62.9</td>
<td>4.5</td>
<td>30.9</td>
<td>3.3</td>
<td>28.2</td>
<td>5.0</td>
<td>17.1</td>
</tr>
<tr>
<td>Selfner</td>
<td>5.5</td>
<td>51.2</td>
<td>12.0</td>
<td>3.6</td>
<td>1.3</td>
<td>8.2</td>
<td>86.4</td>
<td>6.7</td>
<td>20.0</td>
<td>48.8</td>
<td>13.3</td>
<td>32.9</td>
<td>2.3</td>
<td>42.6</td>
<td>2.8</td>
<td>4.6</td>
</tr>
<tr>
<td>Thonotosassa</td>
<td>6.1</td>
<td>50.1</td>
<td>11.6</td>
<td>5.4</td>
<td>0.6</td>
<td>6.3</td>
<td>86.7</td>
<td>7.3</td>
<td>23.5</td>
<td>40.8</td>
<td>4.9</td>
<td>35.7</td>
<td>2.5</td>
<td>43.2</td>
<td>3.6</td>
<td>16.0</td>
</tr>
<tr>
<td>Town n Country</td>
<td>72.5</td>
<td>51.3</td>
<td>12.5</td>
<td>8.7</td>
<td>4.1</td>
<td>29.0</td>
<td>58.5</td>
<td>7.1</td>
<td>35.1</td>
<td>51.2</td>
<td>4.3</td>
<td>39.3</td>
<td>2.8</td>
<td>42.4</td>
<td>2.5</td>
<td>8.6</td>
</tr>
<tr>
<td>University</td>
<td>30.7</td>
<td>50.7</td>
<td>25.1</td>
<td>35.9</td>
<td>4.6</td>
<td>19.3</td>
<td>40.6</td>
<td>13.9</td>
<td>88.0</td>
<td>55.0</td>
<td>17.6</td>
<td>26.4</td>
<td>6.9</td>
<td>22.1</td>
<td>5.3</td>
<td>31.3</td>
</tr>
<tr>
<td>Valrico</td>
<td>6.6</td>
<td>51.3</td>
<td>10.8</td>
<td>3.5</td>
<td>1.9</td>
<td>12.8</td>
<td>80.5</td>
<td>3.6</td>
<td>21.6</td>
<td>80.7</td>
<td>15.0</td>
<td>26.7</td>
<td>2.4</td>
<td>39.2</td>
<td>2.3</td>
<td>7.5</td>
</tr>
<tr>
<td>Westchase</td>
<td>11.1</td>
<td>50.9</td>
<td>7.1</td>
<td>5.5</td>
<td>4.8</td>
<td>11.9</td>
<td>77.8</td>
<td>3.3</td>
<td>12.4</td>
<td>43.5</td>
<td>6.9</td>
<td>34.6</td>
<td>1.5</td>
<td>79.6</td>
<td>0.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Wimauma</td>
<td>4.3</td>
<td>46.2</td>
<td>19.8</td>
<td>7.6</td>
<td>0.8</td>
<td>72.9</td>
<td>19.0</td>
<td>11.1</td>
<td>41.0</td>
<td>73.3</td>
<td>9.6</td>
<td>14.0</td>
<td>6.5</td>
<td>35.1</td>
<td>9.2</td>
<td>31.7</td>
</tr>
</tbody>
</table>

**Table Value Labels**

1 = Total Population (in 1000s); 2 = % Female; 3 = % of Population Age 15-24; 4= % African-American; 5 = % Asian/Pacific Islander; 6 = % Hispanic; 7 = % Non-Hispanic Whites; 8 = % Female-Headed-Households with Children; 9 = % Renters; 10 = % Living in Different House than 5 Years Ago; 11 = % Foreign Born; 12 = % With At least High School Education; 13 = % Unemployed; 14 = Median Income (in 1000s); 15 = % Receiving Public Assistance; 16 = % Below Poverty Line